CHARLES FREY

Pioneer-Standard

Industrial Electronics
11th Edition

1460 437

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PIONEER-STANDARD ELECTRONICS, INC.
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The many mini-multimeters of Weston.

We don't want you to pay extra for DMM features you don't need. So instead of concentrating entirely on just one super mini-DMM that does everything, we offer our super mini Model 4444 (see below) plus two other excellent mini DMMs.

Prices start at $250. Probe leads, batteries, AC power supply/battery charger and extra fuses are included, not optional or additional. All cases are 2.25″ high, 5.45″ wide, and 7″ long. They'll fit in the corner of your briefcase, and they all weigh less than 2-1/2 lbs.

We're either first or best. Or both.

WESTON® WESTON Schlumberger

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4442
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The first mini-DMM. Weston 4440. This 17-range 3½-digit multimeter started a mini revolution. Batteries inside the case give power for up to 12 hours of continuous operation. Priced at $250, complete.

The new Weston 4442 series. More ranges. More accuracy. Offers accuracy of .05% of reading, plus-or-minus one digit, on 200 mV DC range. Model 4442 priced at $275; Model 4443 priced at $250.

Smallest 4-digit autoranging DMM in the world. Weston 4444. Accuracy on 200 mV DC range is an amazing .02% of reading, plus-or-minus one digit. Autoranging is instantaneous. Specialized custom LSI circuits. Priced at $575, complete.

NEW PRODUCTS shown for the first time in the Pioneer-Standard catalog

A P PRODUCTS INCORPORATED
INTEGRATED CIRCUIT ACCESSORIES
Pages 96 and 97

Digitran
THUMBWHEEL SWITCHES
Contact Pioneer
for Catalog

Arco
DISC CERAMIC and DIPPED MICA CAPACITORS
Pages 142 thru 144

AIRPAX™ parkermeter
MAGNETIC PICK-UPS and TACHOMETER SYSTEMS
Pages 420 thru 425

ILIXCO
FIELD EFFECT LIQUID CRYSTAL DISPLAYS
Page 94

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Subsidiary of Thomas & Betts Corporation
RIBBON CABLE and CONNECTORS
Pages 100 and 101

B&K
SCOPES, CURVE TRACERS, and LAB POWER SUPPLIES
Pages 434 thru 436

nci INCORPORATED
TANTALUM CAPACITORS
Pages 193 thru 199

GENERAL ELECTRIC
CAPACITORS
Pages 177 thru 187

Clarostat
POTENTIOMETERS and RESISTORS
Pages 118, 119, 136 and 137

PRECISION MONOLITHICS INCORPORATED
ANALOG and A/D/A INTEGRATED CIRCUITS
Pages 84 and 85

HARRIS SEMICONDUCTOR
A DIVISION OF HARRIS-INTERTYPE CORPORATION
CMOS INTEGRATED CIRCUITS, PROM's, ROM's, LINEARS
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SCANBE
ELECTRONIC PACKAGING HARDWARE
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CMOS INTEGRATED CIRCUITS
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QUICK FIND THUMB TABS

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- Tubes
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- Capacitors
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- Relays
- Transformers
- Hardware
- Terminals
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- Chemicals & Tools
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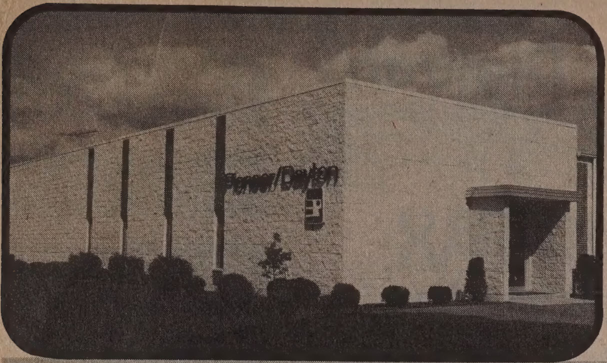
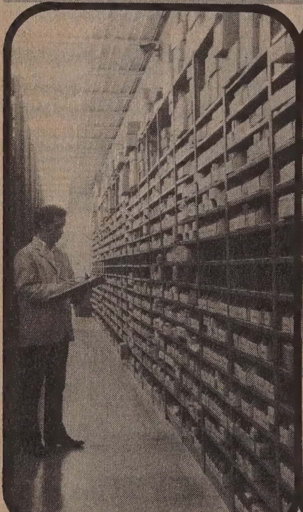
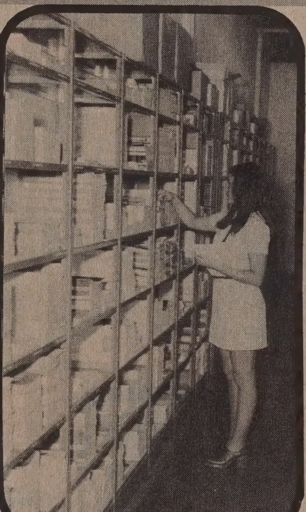
Pioneer-Standard



Pictured to the left is one of our eight modern industrial warehouses. These eight warehouses have a total of 113,000 square feet devoted to the distribution of electronic components.

Each Pioneer facility is well staffed with trained telephone personnel. Personnel capable of taking your orders, processing them promptly and efficiently for one day shipment.





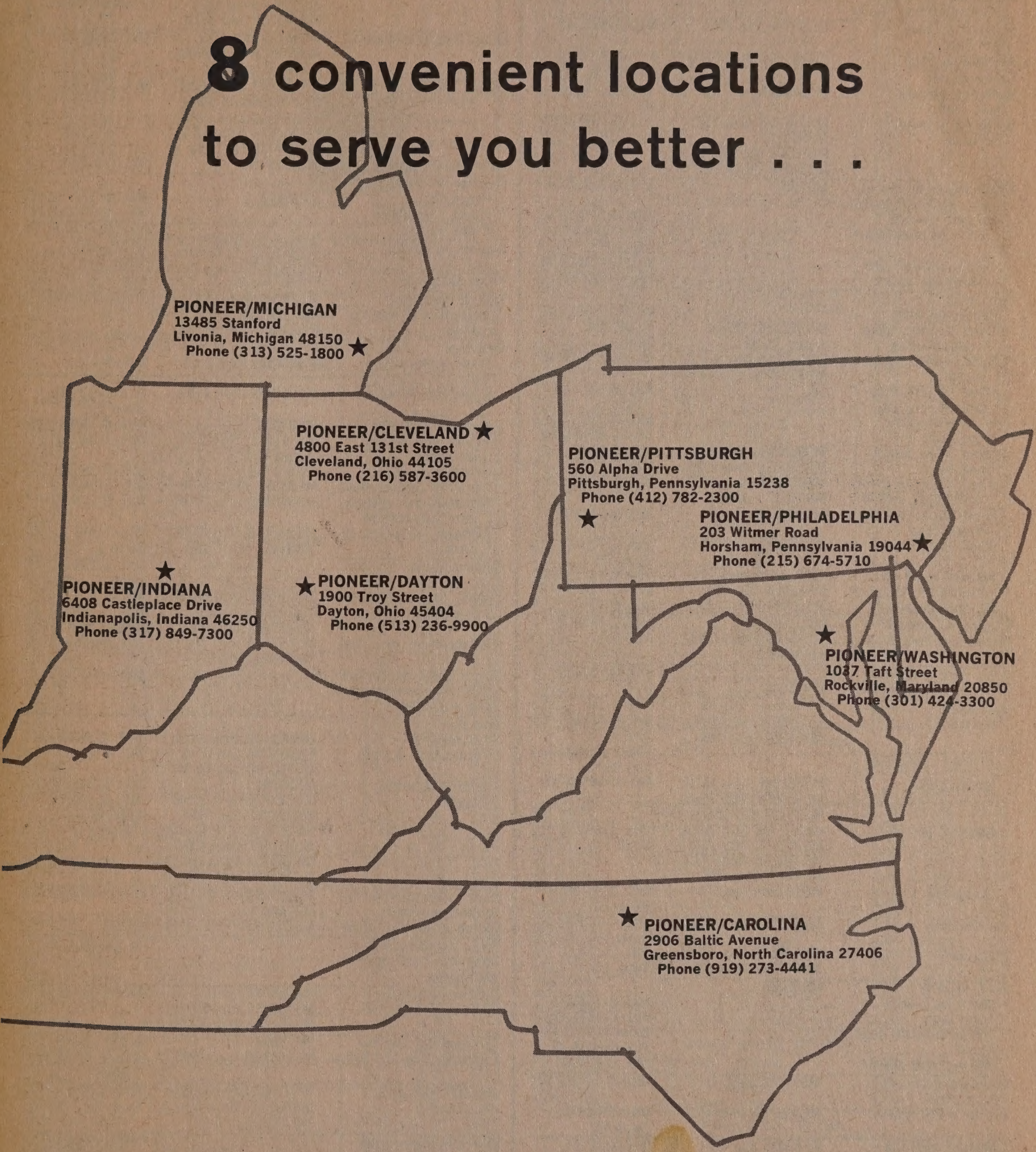
Pictured at the far left is one of the Pioneer warehouse personnel checking stock. Physical stock checks are made to help eliminate erroneous stock information. If you are told it is in stock, there is less chance for errors that are found on stock checks through Visi-records or computers.

Each facility maintains its own well-stocked catalog room (pictured left). An ample supply of all manufacturers catalogs are kept by trained personnel who stand ready to send you catalogs and semiconductor data sheets and application notes on request.

Our Instrument Laboratories, located in Cleveland and Dayton (photo shown here and on Page 416) are equipped to supply, modify, calibrate, and repair panel meters, test instruments, tachometers, and related items. Turn to the Instrument Section of this catalog for details.

Pioneer-Standard

8 convenient locations to serve you better . . .



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prices and terms

We have made every effort to present the latest prices. O.E.M. Price Schedules represent the manufacturer's own prices for like quantities. Should prices change, you will be billed at the manufacturer's own prices for like quantities. Where list prices are shown, trade discounts apply. Terms are 2% 10 days, net 30 days, and a $5.00 minimum billing applies to all charge account orders.

Military Standards—MIL Specs Guide

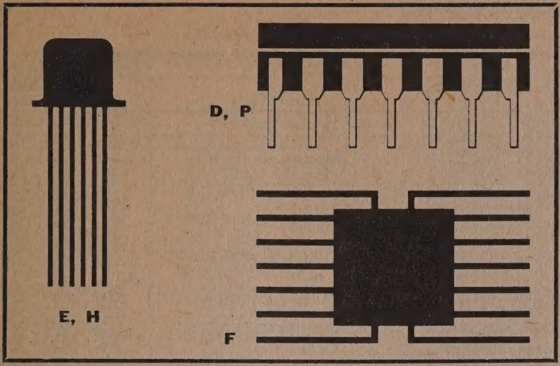
DESCRIPTION	MS NUMBER	MIL SPECIFICATION
Ammeters, AC, DC and RF, round, flush mtg.	MS35075 thru 079	MIL-A-6/2,/4, /5,/9, and/11
Ammeters, voltmeters and loadmeters, #ASG#	....	MIL-A-6752A #3
Attenuator, fixed, coax line	MS90704 and 705	MIL-A-3933 #2
Attenuator, fixed	MS16071B thru 094B	MIL-A-3933 #2
Batteries, dry	....	MIL-B-18C #1
Batteries, storage, lead-acid	MS15367A	MIL-B-11188B #03
Batteries, storage, portable	MS90109B thru 122; MS90114A MS90901 thru 907B; MS91310 thru 1332	MIL-B-15072A#4, Supp 1B
Cable and cord, assemblies, electrical, comm.	MS75027	MIL-C-3885A #1
Power, 3-wire		MIL-C-15987D #1
RF, coax and twin		MIL-C-17C #2, Supp 1F
Special miniature		MIL-C-10392B #1
Multipair, audio		MIL-C-10065A
Capacitors		
Bypass RF filter	....	MIL-C-12889A #2
Fixed ceramic, temp. compensating	MS35014B, 35348, and 35349	MIL-C-20C, Supp 1
Fixed ceramic, gen. purpose	MS90125A thru 131B; MS91216 and 217A	MIL-C-11015B #1
Fixed AC, dry, electrolytic, non-pol.	....	MIL-C-3871 #3
Fixed electrolytic tantalum	....	MIL-C-3965D #1 MIL-C-39003/1A
Fixed, mica, button	MS91102 thru 106	MIL-C-10950B #1
Fixed, mica	MS35007B thru 012B	MIL-C-5B #4
Fixed, paper or mylar, metallized, sealed	MS35021A thru 023A; MS35037 and 038	MIL-C-18312B
Fixed, paper, sealed metal case	MS35027A	MIL-C-25D/3
Fixed, paper	MS35019B and 020B	MIL-C-91A #3, Supp 1A
Feed-thru, RF filter	MS91173A thru 175	MIL-C-11693B #2
Variable, air, trimmer	MS35028, 39, 40A	MIL-C-92A
Variable, ceramic	MS35024C and 025C	MIL-C-81A
Chokes, RF molded	MS91189	MIL-C-15305B
Circuit breakers, manual	MS25003C thru 006C; MS25017D	NONE
Coils, RF transformers	....	MIL-C-15305B
Coils, RF choke, molded	MS75008	NONE
Connectors		
Electrical	MS3100B thru 3137; MS27001 thru 016	MIL-C-5015D; 3767A #1; 26482 Change 3; and 8384B
Series BNC	MS35168E thru 187B; MS35367B and 368B; MS91184 and 185	MIL-C-3688A #1
Series C and RF	MS35279C thru 288B; MS35315C thru 330C; MS90214B thru 277C; MS91117 thru 124	MIL-C-3607A, Supp 1
Series HN	MS90258 thru 263	MIL-C-3643A, Supp 1A
Series LC	MS91596B thru 620B	MIL-C-3650A, Supp 1A
Series N	MS90292A thru 293B MS91231B thru 239C	MIL-C-71A, Supp 1D
Cord, Electric	MS75027	
Audio frequency		MIL-C-3883 #2
Short lay		MIL-C-3884 #2
Retractile multi-cond.		MIL-C-13273 #3
Tinsel		MIL-C-3849 #2
Headset and mike		MIL-C-6166C
Couplers, coax and waveguide	MS91718 and 719	MIL-C-15730J #4
Crystal units, quartz	MS91375A thru 401A	MIL-C-3098C, Supp 1B
Electron tubes and crystal rectifiers	MS90039 and 40	MIL-E-1D #5, Supp. 1B
Filters, high pass, low pass, bandpass, supp.	....	MIL-F-18327A
Filters, RF	....	MIL-F-15733D #1
Flanges, waveguide	MS90044C thru 063A	MIL-F-3922A #1
Fuses, instrument and power	MS15249A thru 258A; MS90013; MS90077A thru 104A	MIL-F-15160D #2, Supp 1A
Fuseholder, block & plug	....	MIL-F-21346 #1
Jacks, telephone	MS35064A thru 074A	MIL-J-641 #1

DESCRIPTION	MS NUMBER	MIL SPECIFICATION
Knobs, control	MS25164D thru 170D; MS35064A thru 074A; MS90120A; MS91522 thru 525; MS91528B and 531B	MIL-K-3926 Supp 1B
Lampholders, miniature	MS35413 thru 415; MS90282A and 283A; MS90290 and 291	MIL-L-3661A
Lamps, miniature	MS15530A thru 600B; MS15602B and 603A; MS15605C thru 618C; MS90287A and 288A; MS35478A thru 481	W-L-111C #2
Light, panel, plastic plate	MS25010C	MIL-C-7806A
Meters		
Panel, DC	MS90212	MIL-M-17275A #1
Panel, ruggedized	....	MIL-M-10304B #1
Panel, sealed	....	MIL-M-3823 #1
Mounts, vibration	MS91526A, 27B, and MS91406B	MIL-C-172C, Supp 1D
Plugs, telephone	MS35374 thru 78	MIL-P-13715
Relays, electrical, electronic and communication	MS24139 thru 199A; MS25267 thru 273; MS25917B thru 919A	MIL-R-5757D #1
Resistors		
Fixed, composition	MS90194	MIL-R-11C, Supp 1
Fixed film, hi-stab.	MS90169A thru 174A	MIL-R-10509D, Supp 1
Fixed film, power	MS91829	MIL-R-11804D #1
Fixed, wire-wound, accurate	MS-91408, -91412 thru 414	MIL-R-83C #2
Fixed, w-w, power	MS90178B	MIL-R-26C #3
Variable, composition	MS35352, MS35055C	MIL-R-94B #2
Variable, wire-wound, low temperature	MS35046B and 047B	MIL-R-19A #2
Variable, wire-wound, power	MS35048B thru 053B; MS91427 thru 438B	MIL-R-22B, Supp 1
Semiconductor devices	....	MIL-S-19500C, Supp 1
Shunts, instrument, ext.	MS91586A thru 588B	MIL-S-61B
Sockets, electron tube	MS35085 thru 090; MS91512A thru 515	MIL-S-12883A #1 & JAN-S-28A #3
Sockets, relay, electrical	MS25321A thru 330A; MS25456 thru 464	MIL-S-12883A #1
Solder, lead, tin, tin-lead alloy, flux cored ribbon, wire and solid	....	QQ-S-571C #2
Switches		
Coaxial, RF	MS90140A thru 142A	MIL-S-3928A #1
Pushbutton & limit	MS25008A and 011C; MS25026B and 085B	MIL-S-6743
Rotary, selector	MS39060	MIL-S-3896A #1
Toggle	MS24523B thru 525B; MS25028F and 029F; MS25068C, 72C & 98A; MS25100A thru 106A; MS25125A thru 128C; MS35058C and 059C	MIL-S-3950, Supp 1
Switch assembly, push-button and limit	MS16106B; MS24331D; MS24420B	MIL-S-6744
Switch assembly, toggle	MS25016C	NONE
Tape, sound recording, magnetic oxide coated; and reels.	....	W-T-0061B #1
Terminal Boards	MS255044; MS25074C thru 079D; MS25129A thru 132B	MIL-T-16784B
Terminal lug, battery	MS75004	MIL-T-55059
Terminals, lug and splice	MS35430B thru 499B	MIL-T-7928E #1, Supp 1
Transformers and inductors	MS75001A thru 003A; MS90000A thru 32D; MS90036D and 037	MIL-T-27A, Supp F
Vibrators, interrupter, self-rectifying	....	MIL-V-95A #1,
Waveguide assemblies	MS35156B thru 167B	MIL-W-287B #2
Waveguides, rigid, rect.	MS90035D	MIL-W-85C #4
Wire, electrical, insulated, high temperature	....	MIL-W-16878D, Supp 1A
Wire, electrical, polytetrafluoroethylene insulated copper, 600 v.	MS-24284A	MIL-W-7139B
Wire, electrical, 600 v., copper, aircraft	MS-25190A	MIL-W-5086A #1

CONSULT US FOR ADDITIONAL INFORMATION

FAIRCHILD SEMICONDUCTOR

DIGITAL INTEGRATED CIRCUITS



DIGITAL INTEGRATED CIRCUITS

Fairchild digital integrated circuits ordering procedure: Last two letters in suffix indicate package and temperature range: **First Letter—D,** ceramic DIP; **E,** plastic can circular lead configuration; **F,** ceramic flat pack; **H,** metal can circular lead configuration; **P,** plastic DIP. **Second Letter—C,** commercial/industrial range 0° C to +75° C; **M,** military range −55° C to +125° C. In addition to the part number, the date code will be marked on the part. The Fairchild F will appear in front of the date code.

STANDARD TTL/MSI

Fairchild Type	Function	Net Each, Lots of		
		1-24	25-99	100 Up
9300DC	4-bit shift register	$ 3.15	$ 2.90	$ 2.50
9301DC	One-of-ten decoder	3.05	2.85	2.45
9302DC	One-of-ten decoder OC	3.05	2.85	2.45
9304DC	Dual full adder	3.70	3.40	2.95
9305DC	Variable module counter	2.80	2.60	2.25
9307DC	7-segment decoder	4.45	4.10	3.55
9308DC	Dual 8-bit latch	6.05	5.55	4.85
9308PC	Dual 4-bit latch	4.50	3.80	3.02
9309DC	Dual 4-input multiplexer	2.45	2.25	1.95
9310DC	BCD decade counter	4.00	3.70	3.20
9311DC	1 of 16 decoder	4.95	4.20	3.40
9311PC	1 of 16 decoder	4.45	4.20	3.55
9312DC	8-input multiplexer	2.45	2.25	1.95
9313DC	3-input multiplexer OC	2.45	2.25	1.95
9314DC	Quad latch	3.05	2.85	2.45
9315/1441DC	One-of-ten decoder driver	2.87	2.43	1.98
9315/1441PC		2.21	1.87	1.52
9316DC	4-bit binary counter	4.00	3.70	3.20
9317BDC	7-segment decoder/driver	5.20	4.75	4.15
9318DC	8-input priority encoder	7.50	6.90	6.00
9321DC	Dual 1-of-4 decoder	3.05	2.85	2.45
9322DC	Quad 2-input multiplexer	2.45	2.25	1.95
9324DC	5-bit comparator	6.20	5.70	4.95
9328DC	Dual 8-bit shift register	7.50	6.90	6.00
9334DC	8-bit addressable latch	6.05	5.60	4.85
9335DC	8-bit data select	9.80	7.85	6.55
9338DC	8-bit multiple port. reg.	7.35	6.80	5.90
9340DC	4-bit arithmetic logic unit	9.70	8.95	7.77
9341/74181DC		9.70	8.95	7.77
9341/74181PC		8.80	7.45	5.99
9342/74182DC	Carry look ahead	2.78	2.56	2.22
9344DC	2 x 4-bit full multiplier	12.65	11.50	10.00
9345/7445DC	DEC decoder/driver (30 V)	5.95	4.75	3.95
9345/7445PC		3.49	2.78	2.16
9348DC	12-bit parity generator/checker	4.95	4.55	3.95
9350DC	Decade counter	3.10	2.80	2.45
9352/7442DC	BCD-to-decimal decoder	2.60	2.18	1.78
9352/7442PC		1.98	1.58	1.22
9353/7443DC	Excess-3-to-decimal decoder	3.95	3.33	2.70
9353/7443PC		3.26	2.60	2.01
9354/7444DC	Excess-3-gray-to-decimal decoder	3.95	2.92	2.70
9354/7444PC		3.26	2.43	2.01
9356DC	Binary counter	3.10	2.80	2.45
9357A/7446DC	BCD-to-7-segment decoder	3.46	2.84	2.38
9357A/7446PC		3.05	2.27	1.89
9357B/7447DC	BCD-to-7-segment decoder/driver	3.35	2.84	2.31
9357B/7447PC		2.85	2.72	1.76
9358/7448DC	BCD-to-7-segment decoder	4.69	3.93	3.20
9458/7448PC		2.62	2.09	1.62
9539/5449FM		15.00	12.00	10.00
9360/74192DC	Up/down decade counter (dual clock)	6.82	5.85	4.85
9360/74192PC		3.93	3.13	2.43
9366/74193DC	Up/down 4-bit binary counter (dual clock)	6.82	5.85	4.85
9366/74193PC		3.93	3.13	2.43
9368DC	FND 70 driver/latch	2.90	2.65	2.30
9370DC	7-segment decoder/driver latch	2.90	2.65	2.30
9375/7475DC	Quad latch	1.60	1.35	1.10
9375/7475PC	Quad latch	1.45	1.16	.90
9377FM	4-bit latch	11.90	9.55	7.95
9380/7480DC	Gated full adder	1.65	1.40	1.15
9380/7480PC	Gated full adder	1.45	1.16	.90
9382/7482DC	2-bit binary full adder	2.92	2.57	2.01
9382/7482PC	2-bit binary full adder	2.21	1.76	1.37
9383/7483DC	4-bit binary full adder	3.36	2.85	2.30
9383/7483PC	4-bit binary full adder	2.76	2.20	1.71

STANDARD TTL/MSI (CONTINUED)

Fairchild Type	Function	Net Each, Lots of		
		1-24	25-99	100 Up
9390/7490DC	Decade counter	$1.81	$1.53	$1.24
9390/7490PC	Decade counter	1.60	1.27	.99
9391/7491DC	8-bit shift register	2.92	2.57	2.01
9391/7491PC	8-bit shift register	2.47	1.97	1.53
9392/7492DC	Divide-by-12 counter	1.79	1.52	1.23
9392/7492PC	Divide-by-12 counter	1.60	1.27	.99
9393/7493DC	4-bit binary counter	1.79	1.52	1.23
9393/7493PC	4-bit binary counter	1.60	1.27	.99
9394/7494DC	4-bit shift register	2.92	2.57	2.01
9394/7494PC	4-bit shift register	2.18	1.74	1.35
9395/7495DC	4-bit R/L shift register	2.48	2.10	1.70
9395/7495PC	4-bit R/L shift register	2.18	1.74	1.35
9396/7496DC	5-bit shift register	2.81	2.37	1.93
9396/7496PC	5-bit shift register	2.33	1.85	1.44
93141/74141DC	BCD-to-decimal decoder/driver	2.92	2.57	2.01
93141/74141PC		2.47	1.97	1.53
93145/74145DC	BCD-to-decimal decoder/driver	3.36	2.85	2.30
93145/74145PC		2.76	2.20	1.71
93150/74150DC	16-bit data selector	5.72	4.85	3.94
93151/74151DC	8-bit data selector	3.93	3.13	2.43
93151/74151PC	8-bit data selector	2.91	2.32	1.80
93152/74152DC	8-input multiplexer	9.80	7.85	6.55
93152/74152PC	8-input multiplexer	7.80	6.30	5.25
93153/74153DC	Dual 4-input multiplexer	3.46	2.92	2.83
93153/74153PC	Dual 4-input multiplexer	2.91	2.32	1.80
93155/74155DC	Dual 1-of-4 decoder	3.20	2.57	2.01
93155/74155PC	Dual 1-of-4 decoder	2.91	2.32	1.80
93156/74156DC	Dual 1-of-4 decoder OC	3.20	2.57	2.01
93156/74156PC	Dual 1-of-4 decoder OC	2.91	2.32	1.80
93164/74164DC	8-bit SE/PA converter	5.50	4.65	3.80
93164/74164PC	8-bit SE/PA converter	3.64	2.90	2.25
93165/74165DC	8-bit PA/SE converter	5.50	4.65	3.80
93165/74165PC	8-bit PA/SE converter	3.64	2.90	2.25
93166/74166DC	8-bit shift register	7.00	6.10	5.49
93166/74166PC	8-bit shift register	6.55	5.22	4.05
93174/74174DC	Hex D-type flip-flop with clear	5.25	4.20	3.50
93174/74174PC		4.28	3.41	2.64
93175/74175DC	Quad D-type flip-flop with clear	4.00	3.20	2.65
93175/74175PC		3.64	2.90	2.75
93176/74176DC	BCD decade counter	3.45	2.75	2.30
93176/74176PC	BCD decade counter	2.76	2.20	1.71
93177/74177DC	4-bit binary counter	3.45	2.75	2.30
93177/74177PC	4-bit binary counter	2.76	2.20	1.71
93178/74178DC	4-bit shift register	4.20	3.35	2.80
93178/74178PC	4-bit shift register	3.55	2.83	2.19
93179/74179DC	4-bit shift register	4.20	3.35	2.80
93179/74179PC	4-bit shift register	3.55	2.83	2.19
93180/74180DC	Parity generator/checker	4.21	3.55	2.84
93180/74180PC	Parity generator/checker	3.67	3.10	2.52
93190/74190DC	Up/down decade counter	7.60	6.05	5.05
93190/74190PC	Up/down decade counter	5.82	4.64	3.60
93191/74191DC	Up/down binary counter	7.60	6.05	5.05
93191/74191PC	Up/down binary counter	5.82	4.64	3.60
93196DC	Decade counter	3.50	2.95	2.40
93197/74197DC	4-bit binary counter	3.50	2.95	2.40
93197/74197PC	4-bit binary counter	3.05	2.43	1.89

LOW POWER TTL/MSI

Fairchild Type	Function	Net Each, Lots of		
		1-24	25-99	100 Up
93L00DC	4-bit shift register	$3.15	$2.90	$2.50
93L01DC	One-of-ten decoder	3.05	2.80	2.45
93L08DC	Dual 8-bit latch	6.05	5.60	4.85
93L09DC	Dual 4-input multiplexer	2.45	2.25	1.95
93L10DC	BCD decade counter	4.00	3.70	3.20
93L11DC	1-of-16 decoder	6.00	5.60	4.85
93L12DC	8-input multiplexer	2.45	2.25	1.95
93L14DC	Quad latch	3.00	2.80	2.45
93L16DC	4-bit binary counter	4.00	3.70	3.20
93L18DC	8-input priority encoder	7.50	6.90	6.00
93L21DC	Dual 1-of-4 decoder	3.00	2.80	2.45
93L22DC	Quad 2-input multiplexer	2.45	2.25	1.95
93L24DC	5-bit comparator	6.20	5.70	4.95
93L28DC	Dual 8-bit shift register	7.50	6.90	6.00
93L34DC	8-bit addressable latch	6.05	5.60	4.85
93L38DC	8-bit multi-port regulator	7.35	6.80	5.90
93L41DC	4-bit arithmetic logic unit	9.70	8.95	7.77

HIGH SPEED TTL/MSI

93H00DC	4-bit shift register	$6.10	$5.60	$4.85
93H72DC	J-K M/S flip-flop	6.10	5.60	4.85
93H87DC	4-bit true comp	12.15	9.70	8.10
93H183DC	Carry save adder	5.70	4.55	3.80

STANDARD TTL/SSI

Fairchild Type	Function	Net Ea., Lots of		
		1-24	25-99	100 Up
9N00/7400DC	Quad 2-input positive NAND gate	$0.75	$0.60	$0.50
9N00/7400PC		.71	.57	.47
9N01/7401DC	Quad 2-input positive NAND gate with OC output	.75	.60	.50
9N01/7401PC		.71	.57	.47
9N02/7402DC	Quad 2-input positive NOR gate	.75	.60	.50
9N02/7402PC		.71	.57	.47
9N03/7403DC	Quad 2-input positive NAND gate with OC output	.75	.60	.50
9N03/7403PC		.71	.57	.47
9N04/7404DC	Hex inverter	.93	.74	.62
9N04/7404PC	Hex inverter	.87	.70	.58

STANDARD TTL/SSI CONTINUED ON FOLLOWING PAGE

FAIRCHILD SEMICONDUCTOR DIGITAL INTEGRATED CIRCUITS

DIGITAL INTEGRATED CIRCUITS

STANDARD TTL/SSI (CONTINUED)

Fairchild Type	Function	Net Ea., Lots of		
		1-24	25-99	100 Up
9N05/7405DC	Hex inverter w/OC output	$0.93	$0.74	$0.62
9N05/7405PC		.87	.70	.58
9N06/7406DC	30 V hex inverter buffer/driver with OC output	4.00	3.20	2.65
9N06/7406PC		3.30	2.65	2.20
9N07/7407DC	30 V hex buffer/driver with OC output	4.00	3.20	2.65
9N07/7407PC		3.30	2.65	2.20
9N08/7408DC	Quad 2-input positive AND gate	.98	.78	.65
9N08/7408PC		.91	.73	.61
9N09/7409DC	Quad 2-input positive AND gate (OC)	.98	.78	.65
9N09/7409PC		.91	.73	.61
9N10/7410DC	Triple 3-input positive NAND gate	.75	.60	.50
9N10/7410PC		.71	.57	.47
9N11/7411DC	Triple 3-input positive AND gate	.98	.78	.65
9N11/7411PC		.91	.73	.61
9N12/7412DC	Triple 3-input positive-NAND gate (OC)	.83	.66	.55
9N12/7412PC		.68	.54	.45
9N13/7413DC	Dual 4-input NAND Schmitt trigger	2.50	2.00	1.65
9N13/7413PC		2.00	1.60	1.35
9N16/7416DC	15 V hex inverter buffer/driver	3.20	2.60	2.15
9N16/7416PC		2.70	2.15	1.80
9N17/7417DC	15 V hex buffer/driver	3.20	2.60	2.15
9N17/7417PC		2.70	2.15	1.80
9N20/7420DC	Dual 4-input positive-NAND gate	.75	.60	.50
9N20/7420PC		.71	.57	.47
9N23/7423DC	Dual 4-input positive-NOR gate with strobe	1.30	1.03	.85
9N23/7423PC		1.10	.88	.73
9N25/7425DC		1.30	1.03	.85
9N25/7425PC		1.10	.88	.73
9N26/7426DC	Quad 2-input positive-NAND gate (15 V)	.98	.78	.65
9N26/7426PC		.78	.63	.52
9N27/7427DC	Triple 3-input positive-NOR gate	1.30	1.03	.85
9N27/7427PC		1.10	.88	.73
9N30/7430DC	Single 8-input positive-NAND gate	.75	.60	.50
9N30/7430PC		.71	.57	.47
9N32/7432DC	Quad 2-input positive-OR gate	.97	.78	.65
9N32/7432PC		.90	.72	.60
9N37/7437DC	Quad 2-input positive-NAND buffer	1.30	1.03	.85
9N37/7437PC		1.17	.93	.78
9N38/7438DC	Quad 2-input positive-NAND buffer (OC)	1.30	1.03	.85
9N38/7438PC		1.17	.93	.78
9N39/7439DC	15 V 9N38/7438DC	1.55	1.25	1.05
9N40/7440DC	Dual 4-input positive-NAND buffer	.75	.60	.50
9N40/7440PC		.71	.57	.47
9N50/7450DC	Expandable dual 2-wide 2-input AND-OR-INVERT gate	.75	.60	.50
9N50/7450PC		.71	.57	.47
9N51/7451DC	Dual 2-wide 2-input AND-OR-INVERT gate	.75	.60	.50
9N51/7451PC		.71	.57	.47
9N53/7453DC	Expandable 4-wide 2-input AND-OR-INVERT gate	.75	.60	.50
9N53/7453PC		.71	.57	.47
9N54/7454DC	4-wide 2-input AND-OR-INVERT gate	.75	.60	.50
9N54/7454PC		.71	.57	.47
9N60/7460DC	Dual 4-input expander	.75	.60	.50
9N60/7460PC		.71	.57	.47
9N86/7486DC	Quad exclusive OR gate	1.10	.86	.72
9N86/7486PC	Quad exclusive OR gate	1.10	.86	.72
9N107/74107DC	Dual J-K M-S flip-flop	1.95	1.55	1.30
9N107/74107PC		1.50	1.20	.98
9000DC	J-K F-F multi-input	1.19	1.07	.91
9001DC	J-K flip-flop	1.19	1.07	.91
9002DC	Quad 2-in. pos. NAND gate	.66	.59	.50
9003DC	Triple 3-in. pos. NAND gate	.66	.59	.50
9004DC	Dual 4-input pos. NAND gate	.66	.59	.50
9005DC	Dual 2-wide 2-in. AOI expand.	.66	.59	.50
9006DC	Dual 4-input expander	.66	.59	.50
9007DC	Dual 4-input pos. NAND gate	.66	.59	.50
9008DC	4-wide 2-2-2-3-in. AOI expand.	.66	.59	.50
9009DC	Dual 4-in. pos. NAND buffer	.88	.78	.68
9012DC	Quad 2-input positive NAND gate (OC output)	.66	.59	.50
9014DC	Quad exclusive OR gate with invert outputs	1.18	1.07	.91
9015DC	Quad 2-2-2-4-in. pos. NOR gate	.88	.79	.66
9016DC	Hex inverter	1.05	.94	.80
9017DC	Hex inverter (OC output)	1.05	.94	.80
9020DC	Dual J-K flip-flop	1.73	1.56	1.33
9022DC	Dual J-K flip-flop	1.98	1.78	1.51
9024DC	Dual J-K flip-flop	1.26	1.14	.97

LOW POWER TTL/SSI

Fairchild Type	Function	Net Ea., Lots of		
		1-24	25-99	100 Up
9L00DC	Quad 2-input pos. NAND gate	$0.50	$0.46	$0.40
9L04DC	Hex inverter	.63	.58	.50
9L24DC	Dual J-K flip-flop	1.32	1.20	1.05
9L54DC	4-wide 2-input AOI gate	.50	.46	.40
9L86DC	Quad exclusive OR gate	.90	.83	.72

HIGH SPEED TTL/SSI

Fairchild Type	Function	Net Ea., Lots of		
		1-24	25-99	100 Up
9H00/74H00DC	Quad 2-input positive-NAND gate	$0.83	$0.67	$0.56
9H00/74H00PC		.76	.61	.51
9H01/74H01DC	Quad 2-input positive-NAND gate (OC)	.85	.67	.56
9H01/74H01PC		.76	.61	.51
9H04/74H04DC	Hex inverter	.92	.73	.61
9H04/74H04PC	Hex inverter	.84	.67	.56
9H05/74H05DC	Hex inverter (OC)	.92	.73	.61
9H05/74H05PC	Hex inverter (OC)	.84	.67	.56
9H08/74H08DC	Quad 2-input positive-AND gate	1.15	.92	.76
9H08/74H08PC		1.05	.84	.70
9H10/74H10DC	Triple 3-input positive-NAND gate	.69	.56	.46
9H10/74H10PC		.63	.51	.42
9H11/74H11DC	Triple 3-input positive-AND gate	1.07	.85	.71
9H11/74H11PC		.81	.66	.54
9H20/74H20DC	Dual 4-input positive-NAND gate	.75	.60	.50
9H20/74H20PC		.69	.55	.46
9H21/74H21DC	Dual 4-input positive-AND gate	.82	.66	.55
9H21/74H21PC		.69	.55	.46
9H22/74H22DC	Dual 4-input positive-NAND gate (OC)	.75	.60	.50
9H22/74H22PC		.69	.55	.46
9H30/74H30DC	8-input positive-NAND gate	.75	.60	.50
9H30/74H30PC		.69	.55	.46
9H40/74H40DC	Dual 4-input positive-NAND buffer	.75	.60	.50
9H40/74H40PC		.69	.55	.46
9H50/74H50DC	Expandable dual 2-wide 2-input AOI gate	.83	.67	.56
9H50/74H50PC		.76	.61	.51
9H51/74H51DC	Dual 2-wide 2-input AND-OR-INVERT gate	.83	.67	.56
9H51/74H51PC		.76	.61	.51
9H52/74H52DC	Expandable 2-2-2-3-input AND-OR gate	.83	.67	.56
9H52/74H52PC		.76	.61	.51
9H53/74H53DC	Expandable 4-wide 2-input AND-OR-INVERT gate	.90	.71	.61
9H53/74H53PC		.95	.76	.63
9H54/74H54DC	4-wide 2-input AND-OR-INVERT gate	.90	.71	.61
9H54/74H54PC		.86	.69	.58
9H55/74H55DC	Expandable 2-wide 2-input AND-OR-INVERT gate	.89	.71	.59
9H55/74H55PC		.82	.65	.54
9H60/74H60DC	Dual 4-input expander	.75	.60	.50
9H60/74H60PC		.69	.55	.46
9H61/74H61DC	Triple 3-input expander	.75	.60	.50
9H61/74H61PC		.69	.55	.46
9H62/74H62DC	3-2-2-3-input AND-OR-expander	.89	.71	.59
9H62/74H62PC		.96	.76	.63
9H71/74H71DC	J-K master-slave flip-flop	1.37	1.22	.93
9H71/74H71PC		1.28	1.00	.84
9H72/74H72DC		1.15	.93	.79
9H72/74H72PC		1.12	.87	.73
9H73/74H73DC	Dual J-K master-slave flip-flop	1.55	1.25	1.05
9H73/74H73PC		1.40	1.15	.95
9H74/74H74DC	Dual D-type edge-triggered flip-flop	1.35	1.10	.90
9H74/74H74PC		1.35	1.10	.90
9H76/74H76DC	Dual J-K master-slave FF with preset and clear	1.75	1.40	1.15
9H76/74H76PC		1.50	1.20	1.00
9H78/74H78DC	Dual J-K master-slave FF with preset and clear	1.75	1.40	1.15
9H78/74H78PC		1.50	1.20	1.00
9H81/74H81DC	50 MHz J-K flip-flop	1.25	1.00	.84
9H82/74H82DC		1.20	.95	.78
9H102/74H102DC		1.20	.95	.78
9H103/74H103DC	50 MHz J-K flip-flop	1.65	1.20	1.10
9H103/74H103PC		1.40	1.10	.93
9H106/74H106DC	Dual 50 MHz J-K flip-flop	1.48	1.20	1.00
9H106/74H106PC		1.36	1.10	.92
9H108/74H108DC		1.58	1.26	1.05
9H108/74H108PC		1.34	1.07	.89

SUPER HIGH SPEED (SCHOTTKY) TTL/SSI

Fairchild Type	Function	Net Ea., Lots of		
		1-24	25-99	100 Up
9S00/74S00DC	Quad 2-input positive-NAND gate	$2.31	$1.86	$1.47
9S00/74S00PC		1.35	1.07	.86
9S03/74S03DC	Quad 2-input positive-NAND gate (OC)	2.31	1.86	1.47
9S03/74S03PC		1.35	1.07	.86
9S04/74S04DC	Hex inverter	2.78	2.24	1.76
9S04/74S04PC		1.65	1.31	1.05
9S04A/74S04DC	Fast hex inverter	2.78	2.24	1.76
9S04A/74S04PC		1.65	1.31	1.05
9S05/74S05DC	Hex inverter (OC)	2.78	2.24	1.76
9S05/74S05PC		1.65	1.31	1.05

SUPER HIGH SPEED
CONTINUED ON NEXT PAGE

DIGITAL INTEGRATED CIRCUITS

SUPER HIGH SPEED (SCHOTTKY) TTL/SSI (CONT'D)

Fairchild Type	Function	Net Ea., Lots of 1-24	25-99	100 Up
9S05A/74S05DC	Fast hex inverter with open collector	$2.78	$2.24	$1.76
9S05A/74S05PC		1.65	1.31	1.05
9S10/74S10DC	Triple 3-input positive-NAND gate	2.31	1.86	1.47
9S10/74S10PC		1.35	1.07	.86
9S11/74S11DC	Triple 3-input positive-AND gate	2.31	1.86	1.47
9S11/74S11PC		1.09	.99	.86
9S15/74S15DC	Triple 3-input positive-AND gate (OC)	2.31	1.86	1.47
9S15/74S15PC		1.35	1.07	.86
9S20/74S20DC	Dual 4-input positive-NAND gate	2.31	1.86	1.47
9S20/74S20PC		1.35	1.07	.86
9S22/74S22DC	Dual 4-input positive-NAND gate (OC)	2.31	1.86	1.47
9S22/74S22PC		1.35	1.07	.86
9S40/74S40DC	Dual 4-input positive-NAND buffer	2.56	2.07	1.63
9S40/74S40PC		1.35	1.07	.86
9S41/74S41DC	Quad 2-input AND gate	2.31	1.86	1.47
9S41/74S41PC		1.09	.99	.86
9S42/74S42DC	Dual AND-OR gate	2.31	1.86	1.47
9S42/74S42PC		1.09	.99	.86
9S64/74S64DC	4-2-3-2-input AND-OR INVERT gate	2.31	1.86	1.47
9S64/74S64PC		1.35	1.07	.86
9S65/74S65DC	4-2-3-2-input AND-OR-INVERT gate (OC)	2.31	1.86	1.47
9S65/74S65PC		1.35	1.07	.86
9S74/74S74DC	Dual D-type flip-flop	5.11	4.12	3.26
9S74/74S74PC		2.72	2.16	1.73
9S109/74S109DC	Positive edge triggered J-not-K flip-flop	4.90	4.05	3.26
9S109/74S109PC		2.40	2.24	1.95
9S112/74S112DC	Negative edge triggered J-K flip-flop	5.15	4.28	3.42
9S112/74S112PC		2.90	2.45	1.95
9S113/74S113DC	Negative edge triggered J-K flip-flop	5.15	4.28	3.42
9S113/74S113PC		2.46	2.24	1.95
9S114/74S114DC	Negative edge triggered J-K flip-flop	5.15	4.28	3.42
9S114/74S114PC		2.46	2.24	1.95
9S133/74S133DC	13-input NAND gate	1.86	1.69	1.47
9S133/74S133PC		1.09	.99	.86
9S134/74S134DC	12-input NAND gate	1.86	1.69	1.47
9S134/74S134PC		1.09	.99	.86
9S140/74S140DC	Dual 4-input positive-NAND driver	3.50	2.80	2.20
9S140/74S140PC		1.76	1.40	1.12
9S175/74S175DC	Quad D-type flip-flop	9.36	8.51	7.40

INTERFACE TTL/SSI

96L02DC	Dual retriggerable 1-shot	$7.15	$6.60	$5.75
9600DC	Retriggerable 1-shot	4.40	4.05	3.50
9601DC	Retriggerable 1-shot	4.40	4.05	3.50
9601PC	Retriggerable 1-shot	1.65	1.50	1.30
9602DC	Dual retriggerable 1-shot	7.20	6.60	5.75
9602PC	Dual retriggerable 1-shot	3.00	2.40	2.00
9603/74121DC	1-shot multivibrator	4.50	3.60	3.00
9603/74121PC	1-shot multivibrator	1.65	1.30	1.10
SN7524J	2-channel core memory sense amplifiers	7.35	5.88	4.90
SN7525J		3.98	3.18	2.65

TTL/MEMORY

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
93400DC	256-bit RAM (256 x 1)	$28.50	$22.80	$19.00
93401DC	Decoder/driver for 93400	5.60	4.55	3.80
93403DC	64-bit RAM (16 x 4)	10.50	8.40	7.00
93407ADC	16-bit RAM (16 x 1)	9.00	7.20	6.00
93410DC	256-bit RAM (256 x 1)	18.75	17.25	15.00
93411DC	256-bit isoplanar RAM	21.40	17.25	15.00
93415DC	1024-bit RAM (1024 x 1)	87.50	80.50	70.00
93433ADC	16-bit RAM (16 x 1)	11.20	9.00	7.50
93435DC	64-bit RAM (16 x 4)	43.50	35.00	29.00

RESISTOR-TRANSISTOR LOGIC (RTL)

900HC	Buffer	$ 3.25	$ 2.60	$ 1.95
901HM	Counter adapter	62.50	50.00	41.80
902HC	Flip-flop	3.25	2.60	1.95
903HC	3-input NOR gate	4.55	3.05	3.00
904HC	Half-adder	3.90	3.10	2.00
905HC	Half-shift register	6.45	5.15	3.85
906HC	Half-shift without inverter	5.15	4.25	3.20
907HC	4-input gate	3.25	2.60	1.95
908HC	Adder	4.55	3.65	3.00
909HC	Buffer	4.25	3.25	2.80
910HC	Dual 2-input gate	3.25	2.60	1.95
911HM	4-input gate	12.65	10.15	8.40
912HC	Half-adder	4.55	3.65	3.00
913HC	Type D flip-flop	7.65	6.10	5.15
914HC	Dual 2-input NOR gate	3.25	2.60	1.95
915HC	Dual 3-input NOR gate	4.55	3.65	3.00
921HC	Expander	2.65	2.15	1.80
923EC	J-K flip-flop	1.95	1.95	1.30
926HC	J-K flip-flop	5.70	4.60	3.85
927HC	Quad inverter	4.55	3.65	3.00

DIODE TRANSISTOR LOGIC (DTL)

Fairchild Type	Function	Net Ea., Lots of 1-24	25-99	100 Up
930DC	Dual 4-input NAND extender	$0.93	$0.74	$0.62
930PC	Dual 4-input NAND extender	.78	.62	.52
931DC	Clocked flip-flop	3.20	2.60	2.15
932DC	Dual buffer	1.04	.84	.70
932PC	Dual buffer	.97	.78	.65
933DC	Dual 4-input extender	.93	.74	.62
933PC	Dual 4-input extender	.78	.62	.52
935DC	Hex inverter expander	1.09	.88	.73
935PC	Hex inverter expander	1.04	.83	.69
936DC	Hex inverter	1.09	.88	.73
936PC	Hex inverter	1.04	.83	.69
937DC	Hex inverter gate	1.09	.88	.73
937PC	Hex inverter gate	1.04	.83	.69
941DC	Monostable 1-shot multivibrator	7.25	5.80	4.85
944DC	Dual buffer	1.09	.88	.73
944PC	Dual buffer	.97	.78	.65
945DC	RS clocked flip-flop	1.26	1.01	.84
945PC	RS clocked flip-flop	1.21	.97	.81
946DC	Quad 2-input NAND gate	1.03	.82	.69
946PC	Quad 2-input NAND gate	.86	.70	.57
948DC	RS clocked flip-flop	1.26	1.01	.84
948PC	RS clocked flip-flop	1.21	.97	.81
949DC	Dual 2-input inverter	1.03	.82	.69
949PC	Dual 2-input inverter	.86	.70	.57
950DC	AC coupled R-S flip-flop	7.25	5.80	4.85
950PC	AC coupled R-S flip-flop	6.50	5.20	4.35
951DC	1-shot monostable multivibrator	7.25	6.80	4.85
951PC	1-shot monostable multivibrator	6.50	5.20	4.35
961DC	Dual 2-input inverter	1.03	.82	.69
961PC	Dual 2-input inverter	.86	.70	.57
962DC	Triple 3-input NAND gate	1.03	.82	.69
962PC		.86	.70	.57
963DC		1.03	.82	.69
963PC		.86	.70	.57
9093DC	Dual J-K flip-flop	1.79	1.44	1.20
9093PC		1.67	1.35	1.13
9094DC		1.79	1.44	1.20
9094PC		1.67	1.35	1.13
9097DC		1.79	1.44	1.20
9097PC		1.67	1.35	1.13
9099DC		1.79	1.44	1.20
9099PC		1.67	1.35	1.13
9135DC	Hex inverter w/o input diodes	1.09	.88	.73
9135PC	Hex inverter w/o input diodes	.97	.78	.65
9157DC	Quad 2-input NAND buffer	1.09	.88	.73
9157PC	Quad 2-input NAND buffer	.97	.78	.65
9158DC	Quad power gate	1.09	.88	.73
9158PC	Quad power gate	.97	.78	.65
1800PC	Dual 5-input NAND gate	.72	.58	.48
1801PC	Dual 5-input NAND gate	.72	.58	.48
1802PC	Single 8-input NAND gate	.72	.58	.48
1803PC	Single 8-input NAND gate	.72	.58	.48
1804PC	Single 10-input NAND gate	.72	.58	.48
1805PC	Single 10-input NAND gate	.72	.58	.48
1806PC	Quad 2-input NAND gate	.72	.58	.48
1807PC	Quad 2-input NAND gate	.72	.58	.48
1808PC	Quad 2-input OR gate	.72	.58	.48
1809PC	Quad 2-input OR gate	.72	.58	.48
1810PC	Quad 2-input NOR gate	.72	.58	.48
1811PC	Quad 2-input NOR gate	.72	.58	.48
1812PC	Quad 2-input exclusive OR gate	1.28	1.02	.85
1813PC	Quad latch	2.70	2.16	1.80
1814PC	Quad latch	2.63	2.10	1.75

COUNTING TRANSISTOR MICROLOGIC (CTμL)

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100-Up
952DC	Dual 2-input inverter	$1.90	$1.50	$1.25
953DC	Triple 2-2-3 gate	1.90	1.50	1.25
954DC	Dual 4-input gate	1.90	1.50	1.25
955DC	Single 8-input gate	1.90	1.50	1.25
956DC	Dual 2-input buffer	1.90	1.50	1.25
957DC	Binary	3.00	2.40	2.00
964DC	3-3-1 gate	1.90	1.50	1.25
965DC	Quad 1-input gate	1.90	1.50	1.25
966DC	Quad 2-input gate	1.90	1.50	1.25
967DC	J-K flip-flop	3.00	2.40	2.00
971DC	Quad 2-input AND gate	1.90	1.50	1.25
972DC	Quad 2-input gate	1.90	1.50	1.25

COUNTING MICROLOGIC® (CμL)

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
958DC	Decade counter	$11.20	$ 9.00	$ 7.50
959DC	Buffer decoder	10.05	8.00	6.75
960DC	Decoder/driver	15.70	12.55	10.50
989HC	Mod 16 counter	11.20	9.00	7.50

FAIRCHILD SEMICONDUCTOR

LINEAR INTEGRATED CIRCUITS

LINEAR INTEGRATED CIRCUITS

Fairchild Linear Integrated Circuits are available in same packages as Digital types plus: **J**, TO-66; **T**, plastic mini-dip; **U**, TO-220. Following types commercial/industrial temperature range 0° C to +75° C.

TELEVISION RECEIVER AND VIDEO TAPE RECORDER

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
703HC	RF/IF limiting amp	**$1.50**	**$1.20**	**$1.00**
723HC	Voltage regulator	**2.93**	**2.34**	**1.95**
733HC	Video amp	**4.43**	**3.54**	**2.95**
746HC	Color TV chroma demod	**2.04**	**1.83**	**1.67**
780DC	Phase locked loop	**2.04**	**1.82**	**1.67**
781DC	Gain controlled IF amp	**2.04**	**1.82**	**1.67**
786DC	Pal chroma demod	**1.66**	**1.53**	**1.33**
796HC	Double box MCD/demod	**1.33**	**1.22**	**1.06**
CA3064	TV automatic	**1.46**	**1.35**	**1.17**
CA3065	TV/FM sound system	**1.51**	**1.39**	**1.21**
CA3066	TV chroma proc	**3.47**	**2.78**	**2.32**
3067	TV chroma demod	**3.47**	**2.78**	**2.32**

AM/FM RECEIVER—AUDIO

706APC	Audio amplifier	**$3.83**	**$3.06**	**$2.55**
720DC	AM radio system	**2.04**	**1.63**	**1.35**
732DC	FM/stereo MPX decoder	**1.66**	**1.53**	**1.33**
739DC	Dual L/N audio preamp	**3.38**	**2.70**	**2.25**
749HC	Dual audio preamp	**2.50**	**2.00**	**1.70**
753TC	FM gain block	**1.90**	**1.52**	**1.27**
757DC	AGC IF amplifier	**1.74**	**1.60**	**1.39**
758DC	PLL stereo decoder	**5.92**	**4.75**	**3.95**
767DC	FM stereo MPX decoder	**1.31**	**1.21**	**1.05**
768DC	FM stereo decoder	**2.40**	**1.92**	**1.60**
769DC	FM stereo decoder	**1.88**	**1.50**	**1.25**
CA3075	FM sound IF	**1.77**	**1.42**	**1.18**
CA3076	FM gain block	**1.68**	**1.35**	**1.12**

AUTOMOTIVE AND APPLIANCE

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
741HC	Freq. comp. op amp	**$0.90**	**$0.83**	**$0.70**
742DC	Zero crossing AC trig	**4.43**	**3.54**	**2.95**
7350DC	Tachometer subsystem	**4.88**	**3.90**	**3.25**
7351DC	Triple op amp	**4.20**	**3.36**	**2.80**

CALCULATORS

SN75491N	MOS-LED 7-segment driver	**$1.90**	**$1.72**	**$1.55**
SN75492N	MOS-LED 7-segment driver	**2.20**	**1.99**	**1.80**

VOLTAGE REGULATORS

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
723HC	Adjustable positive voltage regulators	**$ 2.93**	**$ 2.34**	**$ 1.95**
LM105H		**18.00**	**14.50**	**12.00**
LM305H		**4.65**	**3.70**	**3.10**
LM376N		**2.25**	**1.95**	**1.50**

VOLTAGE REGULATORS—FIXED POSITIVE

7805KC	5 V, TO-3, 1 A regulator	**$3.05**	**$2.85**	**$2.50**
7806KC	6 V, TO-3, 1 A regulator	**4.10**	**3.70**	**3.25**
7808KC	8 V, TO-3, 1 A regulator	**4.10**	**3.70**	**3.25**
7812KC	12 V, TO-3, 1 A regulator	**4.10**	**3.70**	**3.25**
7815KC	15 V, TO-3, 1 A regulator	**4.10**	**3.70**	**3.25**
7818KC	18 V, TO-3, 1 A regulator	**4.10**	**3.70**	**3.25**
7824KC	24 V, TO-3, 1 A regulator	**4.10**	**3.70**	**3.25**
78M05HC	5 V, 500 mA TO-5 volt reg	**2.25**	**1.95**	**1.50**
78M06HC	6 V, 500 mA TO-5 volt reg	**2.25**	**1.95**	**1.50**
78M08HC	8 V, 500 mA TO-5 volt reg	**2.25**	**1.95**	**1.50**
78M12HC	12 V, 500 mA TO-5 volt reg	**2.35**	**2.05**	**1.55**
78M15HC	15 V, 500 mA TO-5 volt reg	**2.35**	**2.05**	**1.55**
78M20HC	20 V, 500 mA TO-5 volt reg	**2.35**	**2.05**	**1.55**
78M24HC	24 V, 500 mA TO-5 volt reg	**2.35**	**2.05**	**1.55**

VOLTAGE REGULATORS—ADJUSTABLE NEGATIVE

LM104H	Neg. voltage founder	**$30.00**	**$24.00**	**$20.00**
LM304H	Neg. voltage founder	**4.10**	**3.80**	**3.25**

GENERAL PURPOSE OPERATIONAL AMPLIFIERS

702HC	DC wideband amp	**$ 3.38**	**$ 2.70**	**$2.25**
709HC	General purpose op amp	**1.10**	**1.05**	**.90**
715HC	Hi-speed op amp	**7.43**	**5.94**	**4.95**
730HC	Differential amp	**5.93**	**4.74**	**3.95**
739DC	Dual L/N audio preamp	**3.38**	**2.70**	**2.25**
741HC	Freq. comp. op amp	**.90**	**.83**	**.72**
747HC	Dual freq. comp. op amp	**5.93**	**4.74**	**3.95**
748HC	Hi-performance op amp	**1.30**	**1.20**	**1.10**
749HC	Dual audio preamp	**2.50**	**2.00**	**1.70**
776HC	Programmable op amp	**4.10**	**3.77**	**3.28**
777HC	Precision op amp	**3.55**	**2.85**	**2.35**
LM101H	General purpose op amp	**5.93**	**4.74**	**3.95**
LM102H	Voltage follower	**14.25**	**11.40**	**9.50**
LM107H	General purpose op amp	**6.35**	**5.10**	**4.25**
LM110H	Voltage follower	**14.25**	**11.40**	**9.50**
LM201H	General purpose op amp	**1.88**	**1.50**	**1.25**
LM207H	General purpose op amp	**5.25**	**4.20**	**3.50**
LM301AH	General purpose op amp	**.95**	**.78**	**.65**
LM302H	Voltage follower	**4.30**	**3.40**	**2.85**
LM307H	Comp. op amp	**.95**	**.78**	**.65**
LM310H	Voltage follower	**4.65**	**3.75**	**3.10**
MC1458CPI	Dual hi-performance op amp	**1.50**	**1.30**	**1.00**
MC15586	Dual hi-performance op amp	**7.50**	**6.50**	**4.95**

LOW INPUT/LOW DRIFT OPERATIONAL AMPLIFIERS

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
725HC	Instrumentation op amp	**$11.25**	**$ 9.00**	**$ 7.50**
727HC	Temp. controlled preamp	**16.88**	**13.50**	**11.25**
740HC	FET op amp	**14.93**	**11.94**	**9.95**
LM108H	Super beta op amp	**18.75**	**15.00**	**12.50**
LM208H	Super beta op amp	**12.80**	**10.20**	**8.50**
LM308H	Super beta op amp	**2.75**	**2.20**	**1.85**

HIGH CURRENT/POWER OPERATIONAL AMPLIFIER

791KC	Power op amp	**$23.10**	**$14.95**	**$12.50**

VOLTAGE COMPARATORS

710HC	Hi-speed comparator	**$ 1.10**	**$ 1.05**	**$ 0.90**
711HC	Dual comparator	**1.10**	**1.05**	**.90**
734HC	Precision comparator	**4.10**	**3.77**	**3.28**
750DC	Dual power comparator	**7.65**	**6.75**	**5.95**
760HC	Hi-speed comparator	**4.10**	**3.77**	**3.28**
LM111H	Voltage comparator	**16.50**	**14.40**	**11.00**
LM311H	Voltage comparator	**4.50**	**3.90**	**3.00**

DATA TRANSMISSION—TRANSISTOR/DIODE ARRAYS/ANALOG SWITCHES

726HC	TSS transistor pair	**$11.25**	**$ 9.00**	**$ 7.50**
CA3018	Transistor array	**1.31**	**1.21**	**1.05**
CA3018A	Transistor array	**1.78**	**1.66**	**1.45**
CA3019	Transistor array	**1.31**	**1.21**	**1.05**
CA3026	Transistor array	**1.75**	**1.60**	**1.39**
CA3036	Transistor array	**1.25**	**1.15**	**.99**
CA3039	Transistor array	**1.31**	**1.21**	**1.05**
CA3045	3 transistor array and diff. pair	**1.31**	**1.21**	**1.05**
CA3046		**1.31**	**1.21**	**1.05**
CA3054	Dual diff. amp array	**1.31**	**1.21**	**1.05**
CA3086	Transistor array	**.70**	**.64**	**.55**
SH3002HC	SPDT analog switch	**20.60**	**16.50**	**13.80**

COMPUTER/INTERFACE

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
9614DC	Dual line driver	**$4.50**	**$3.60**	**$3.00**
9615DC	Dual line receiver	**4.50**	**3.60**	**3.00**
9616DC	EIA line driver	**5.62**	**5.18**	**4.50**
9617DC	EIA line receiver	**4.40**	**4.05**	**3.50**
9620DC	EIA line receiver	**5.90**	**4.70**	**3.95**
9621DC	Dual line driver	**4.75**	**3.80**	**3.20**
9622DC	Dual line receiver	**6.20**	**4.95**	**4.15**
SN75107J	Dual line receiver	**4.25**	**3.75**	**3.25**
SN75108J	Dual line receiver	**4.25**	**3.75**	**3.25**
SN75109J	Dual line driver	**4.51**	**3.93**	**3.41**
SN75110J	Dual line driver	**4.51**	**3.93**	**3.41**
N8T13E	Dual line driver	**3.00**	**2.40**	**2.00**
N8T14E	Triple line receiver	**3.15**	**2.52**	**2.10**
N8T23E	Dual line driver	**3.35**	**2.70**	**2.25**
N8T24E	Triple line receiver	**3.75**	**3.00**	**2.50**

COMPUTER/INTERFACE DISPLAY DRIVERS

SN75491N	MOS-LED 7-segment driver	**$1.90**	**$1.72**	**$1.55**
SN75492N	MOS-LED 7-segment driver	**2.20**	**1.99**	**1.80**
9307DC	BCD to 7-segment driver	**4.45**	**4.10**	**3.55**
9317BDC	BCD to 7-segment decoder/driver	**5.20**	**4.75**	**4.15**
9317CDC		**4.80**	**4.40**	**3.85**
9368DC	FND 70 driver/latch	**2.90**	**2.65**	**2.30**
9370DC	7-segment decoder/ driver latch	**2.90**	**2.65**	**2.30**

COMPUTER/INTERFACE MEMORY—CORE DRIVERS

SN7524J	2-channel sense amp	**$7.35**	**$5.88**	**$4.90**
SN7525J	2-channel sense amp	**3.98**	**3.18**	**2.65**

COMPUTER/INTERFACE MEMORY—MOS MEMORY

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
SN75107J	Dual line receiver	**$4.25**	**$3.75**	**$3.25**
SN75108J	Dual line receiver	**4.25**	**3.75**	**3.25**

COMPUTER/INTERFACE—D/A AND A/D CONVERSION

722FC	D/A current source	**$22.50**	**$18.00**	**$15.00**
SH8090FL	D/A converter	**98.00**	**75.00**	**68.37**

COMPUTER/INTERFACE—GENERAL PURPOSE DRIVERS

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
9624DC	Dual TTµL/MOS interface element	**$ 4.10**	**$3.25**	**$2.75**
9625DC	MOS/TTµL interface element	**3.30**	**2.65**	**2.20**
SN75450J	Dual peripheral driver	**1.72**	**1.56**	**1.40**
SN75451P	Dual peripheral driver	**1.24**	**1.13**	**1.02**
SN75452P	5 V dual peripheral driver	**1.33**	**1.28**	**1.10**
SN75453P	5 V dual peripheral driver	**1.33**	**1.28**	**1.10**
SN75454P	5 V dual peripheral driver	**1.33**	**1.28**	**1.10**
SH2001HC	Hi-V, Hi-current driver	**10.30**	**8.25**	**6.67**
SH2002HC	DTL hi-power driver	**7.90**	**6.32**	**5.27**
SH2200HC	Hi-V, hi-current driver	**8.70**	**7.05**	**5.80**

FAIRCHILD SEMICONDUCTOR Optoelectronic Devices

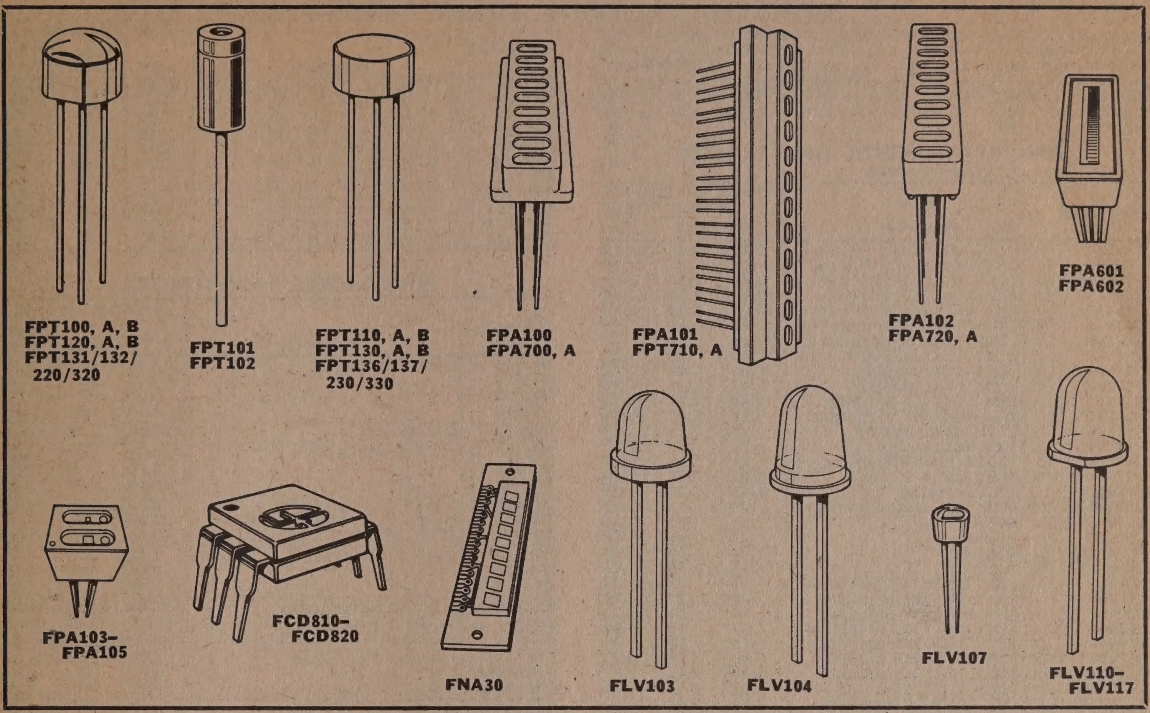


PHOTO TRANSISTORS

Plastic except as otherwise noted.

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
FPT100	Round lens, general purpose	$0.82	$0.82	$0.61
FPT100A	Round lens, 1:3 sensitivity	.97	.97	.71
FPT100B	Round lens, 1:2 sensitivity	1.20	1.20	.88
FPT101	Miniature hermetic package,	6.80	6.00	4.50
FPT102	0.080″ dia.	6.80	6.00	4.50
FPT110	Flat lens, general purpose	1.05	1.05	.77
FPT110A	Flat lens, 1:3 sensitivity	1.27	1.27	.94
FPT110B	Flat lens, 1:2 sensitivity	1.50	1.50	1.10
FPT120	Flat lens, high sensitivity	1.27	1.27	.94
FPT120A	Round lens, 1:3 sensitivity	1.50	1.50	1.10
FPT120B	Round lens, 1:2 sensitivity	1.90	1.90	1.40
FPT130	Flat lens, high sensitivity	1.42	1.42	1.04
FPT130A	Flat lens, 1:3 sensitivity	1.72	1.72	1.27
FPT130B	Flat lens, 1:2 sensitivity	2.10	2.10	1.54
FPT131	Round lens	.66	.66	.49
FPT132	Round lens	1.02	1.02	.75
FPT136	Flat lens	.84	.84	.62
FPT137	Flat lens	1.13	1.13	.83
FPT220	Round lens, 1:2 sensitivity	1.90	1.90	1.40
FPT230	Flat lens, 1:2 sensitivity	2.10	2.10	1.54
FPT320	Round lens, 1:3 sensitivity	1.50	1.50	1.10
FPT330	Flat lens, 1:3 sensitivity	1.72	1.72	1.27

SOURCE/SENSOR ARRAYS

Fairchild Type	Function	Net Each, Lots of 1-24
FPA100	Read set, 9 elements, 100 mil	$ 48.00
FPA101	IR card reader, 12 elements	68.00
FPA102	IR card reader, 10 elements	57.00
FPA601	64 elements, self-scanning array	520.00
FPA602	128 elements, self-scanning array	660.00
FPA700	9 element sensor array	19.90
FPA700A	9 element sensor array, close match	22.75
FPA710	12 element sensor array	28.50
FPA710A	12 element sensor array, close match	34.00
FPA720	10 element sensor array	24.10
FPA720A	10 element sensor array, close match	28.50

EMITTER/SENSOR ARRAYS

Fairchild Type	Function	Net Each, Lots of 1-99	100-999	1000 Up
FPA103	Light reflective transducer	$ 6.74	$ 5.98	$4.49
FPA104	Same except 3:1 match	9.00	8.00	6.00
FPA105	Same except 2:1 match	12.00	10.65	8.00

OPTICALLY COUPLED ISOLATORS

Fairchild Type	Function	Net Each, Lots of 1-24	25-99	100 Up
FCD810	OPTO isolator 750 V	$1.50	$1.10	$1.00
FCD811	OPTO isolator 2500 V	1.95	1.45	1.30
FCD820	OPTO isolator 1500 V	1.70	1.25	1.10

NINE-DIGIT DISPLAY ARRAYS

FNA30	9 digit—100 mil chip	$37.50	....	....
FNA35	9 digit—50 mil chip	16.00	$10.50	....
FNA37	9 digit—70 mil chip	17.50	12.00	....
FNA38	9 digit—70 mil chip	17.50	12.00	$10.50

SINGLE CHARACTER DISPLAYS

Fairchild Type	Function	Net Each, Lots of 1-25	25-99	100 Up
FND70	0.270″ multiplex or DC digit	$3.50	$2.80	$2.50
FND500	0.500″ common cathode digit	3.95	2.95	2.65
FND507	0.500″ common anode digit	3.95	2.95	2.65
FNS700	10-pin DIP socket	.71	.52	.47

VISIBLE LAMPS

Fairchild Type	Function	Net Each, Lots of 1-99	100-999	1000 Up
FLV100	Clear red lens point source	$0.80	$0.60	$0.52
FLV101	Diffused red indicator	.90	.68	.59
FLV102	Diffused red indicator	.74	.56	.48
FLV103	Water clear lens, backlighting	.60	.45	.39
FLV104	Water clear lens, narrow beam	2.00	1.50	1.30
FLV107	Diffused red lens, subminiature	2.65	1.95	....
FLV108	Diffused clear indicator	.74	.56	.48
FLV110	Diffused red indicator	.50	.37	.33
FLV111	Water clear lens, backlighting	.60	.45	.39
FLV112	Diffused clear indicator	.60	.45	.39
FLV117	Diffused red indicator	.28	.21	.17
FLV131	Red backlighting	.60	.45	.39
FLV141	Red backlighting	.60	.45	.39
FLV150	Diffused red indicator	.60	.45	.39
FLV151	Red backlighting	.60	.45	.39
FLV152	Red backlighting	.92	.69	.60
FLV160	Diffused red indicator	.74	.55	.48
FLV161	Red backlighting	.74	.55	.48
FLV162	Red backlighting	.92	.69	.60
FLV250	Diffused red indicator	1.10	.83	.72
FLV251	Red backlighting	1.10	.83	.72
FLV252	Red backlighting	1.45	1.10	.95
FLV310	Diffused green indicator	1.02	.77	.66
FLV331	Green backlighting	1.02	.77	.66
FLV341	Green backlighting	1.02	.77	.66
FLV350	Diffused green indicator	1.10	.83	.72
FLV351	Green backlighting	1.10	.83	.72
FLV360	Diffused green indicator	1.15	.87	.75

FAIRCHILD
SEMICONDUCTOR

NPN-PNP SILICON SEMICONDUCTORS

Lead Forming On TO-92 Plastic Transistors: Lead forming to TO-5 or TO-18 outline dimension is available on all standard small signal plastic TO-92 transistors for a price adder of **$0.01** per unit. To order lead formed devices, add a dash five (**-5**) or dash eighteen (**-18**) to the standard device type number: i.e., 2N3906**-5** leads formed to TO-5 outline; 2N3906**-18** leads formed to TO-18 outline. **Military Approved Devices:** All Fairchild devices, which indicate military approval are qualified to the current revisions of Military Specification 19500.

NPN RF/IF—METAL AND PLASTIC

Plastic except as otherwise noted.

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
2N917*	15 V, 200 MHz amp and osc	$ 0.71	$0.44	$0.38
2N918*	15 V, 200 MHz amp and osc	.74	.46	.40
2N3137*	20 V, 200 MHz GP RF amp	3.40	2.10	1.85
2N3338*	60 MHz AGC RF amplifier	12.00	7.50	6.55
2N3339*	60 MHz AGC RF amplifier	15.00	9.30	8.10
2N3563	12 V, 200 MHz RF amp and osc	.28	.17	.15
2N3564	15 V, 200 MHz GP RF amp	.31	.19	.16
2N3688	200 MHz AGC amplifier	.42	.26	.23
2N3689	200 MHz AGC amplifier	.42	.26	.23
2N3690	200 MHz AGC amplifier	.49	.31	.27
2N4134*	60 MHz AGC RF amplifier	3.40	2.10	1.85
2N4135*	45 MHz AGC RF amplifier	3.15	1.95	1.69
2N5126	20 V AGC RF amplifier	.28	.17	.15
2N5130	12 V RF amp and osc	.20	.12	.10
2N5770†	12 V, 200 MHz RF amp and osc	.28	.17	.15
PE5010†	200 MHz RF AGC amp	1.03	.64	.55
PE5013†	AGC RF amplifier	1.01	.63	.55
PE5015†	100 MHz RF AGC amplifier	.88	.55	.47
PE5025†	RF amplifier	.64	.39	.34
PE5029†	RF amplifier	.77	.48	.41
PE5030B†	RF amplifier	.94	.58	.51
PE5031†	RF amplifier	.81	.50	.44
SE1010	15 V, 200 MHz GP RF amp	.46	.29	.25
SE5001	45 MHz AGC RF amplifier	.46	.29	.25
SE5002	45 MHz AGC RF amplifier	.49	.31	.27
SE5003	200 MHz AGC RF amplifier	.57	.35	.30
SE5006	100 MHz AGC RF amplifier	.40	.26	.23
SE5020*	200 MHz AGC RF amplifier	5.95	3.20	2.75
SE5021*	200 MHz AGC RF amplifier	3.40	2.12	1.85
SE5022*	200 MHz AGC RF amplifier	3.15	1.95	1.69
SE5023*	45 MHz AGC RF amplifier	4.15	2.55	2.25
SE5024*	45 MHz AGC RF amplifier	4.15	2.55	2.25
SE5025	45 MHz RF amplifier	.64	.39	.34
SE5030B	45 MHz RF amplifier	.94	.58	.51
SE5050*	100 MHz AGC RF amplifier	2.12	1.85	1.72
SE5051*	100 MHz AGC RF amplifier	3.15	1.95	1.69
SE5052*	200 MHz AGC RF amplifier	5.15	3.20	2.75
SE5055*	45 MHz AGC RF amplifier	5.15	3.20	2.75
SE8010*	60 V, 27 MHz RF amplifier	2.75	1.68	1.46

*Metal. †TO-92 package.

HYBRID MICROWAVE AMPLIFIERS

Fairchild Type	Function	Net Each, Lots of		
		1-24	25-99	100-999
FMA10	10 dB variable attenuator	$ 35.00	$ 28.00	$ 24.50
FMA20	10 dB variable attenuator	35.00	28.00	24.50
FMA70	Lo-NF, hi-gain 70 MHz amp	84.00	67.00	59.00
FMA71	FMA70 in connector package	129.00	103.00	91.00
FMA90	Lo-NF, hi-gain 70 MHz amp	84.00	67.00	59.00
FMA100	AGC UHF preamp	163.00	131.00	115.00
FMA105	Lo-NF, 3-stage VHF amp	90.00	72.00	63.00
FMA106	Lo-NF, 2-stage VHF amp	70.00	56.00	49.50
FMA107	Lo-NF, 2-stage VHF amp	90.00	72.00	63.00
FMA111	2—550 MHz GP post-amp	84.75	68.00	60.00
FMA112	200–400 MHz preamp	65.00	52.00	46.00
FMA114	2—550 MHz GP preamp	97.20	78.00	68.70
FMA115	2—550 MHz GP post-amp	97.20	78.00	68.70
FMA120	0.5 W LIN amp 3–120 MHz	72.30	58.00	51.00
FMA125	160 MHz IF lo-NF amp	95.00	76.00	67.00
FMA130	160 MHz IF 10-NF amp	75.00	60.00	53.00
FMA131	Wide band amplifier	80.00	64.00	57.00
FMA134	Wide band amplifier	93.00	75.00	66.00
FMA135	Wide band amplifier	93.00	75.00	66.00
FMA150	Wide band amplifier	75.00	60.00	53.00
FMA155	Wide band amplifier	70.00	56.00	49.00
FMA300	Lo-NF, hi-gain 300 MHz amp	105.00	84.00	74.00
FMA301	Lo-NF, hi-gain 300 MHz amp	150.00	121.00	106.00
MPF102*	25 V, N-CH J-FET amplifier	.50	.39	.32
MPF108*	25 V, N-CH J-FET amplifier	.80	.56	.42
MPF109*	25 V, N-CH J-FET amplifier	.70	.49	.38
MPF111*	20 V, N-CH J-FET amplifier	.34	.27	.23
MPF112*	25 V, N-CH J-FET amplifier	.34	.27	.23

*Plastic.

FIELD-EFFECT TRANSISTORS (FET)

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
2N4221	30 V, N-CH, J-FET GPA	$1.14	$0.71	$0.62
2N4223	30 V, N-CH, J-FET GPA	1.28	.80	.69
2N4224	30 V, N-CH, J-FET GPA	1.31	.80	.71
2N4342	30 V, P-CH, J-FET GPA	.71	.44	.38
2N4343	30 V, P-CH, J-FET GPA	1.08	.67	.59
2N4360	30 V, P-CH, J-FET GPA	.54	.33	.29
2N4416	30 V, N-CH, RF J-FET	1.80	1.12	.97
2N5033	25 V, P-CH, J-FET GPA	.97	.60	.52
2N5427	25 V, N-CH, J-FET amp	.72	.49	.39
2N5428	25 V, N-CH, J-FET amp	.65	.44	.35
2N5459	25 V, N-CH, J-FET amp	.72	.49	.39
2N5484	25 V, N-CH, J-FET amp	1.05	.70	.56

FIELD-EFFECT TRANSISTORS (CONT'D)

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
2N5485	25 V, N-CH, J-FET amp	$1.05	$0.70	$0.56
2N5486	25 V, N-CH, J-FET amp	1.05	.70	.56
2N5668	25 V, N-CH, J-FET amp	.85	.58	.45
2N5669	25 V, N-CH, J-FET amp	.79	.52	.41
FT601	Dual gate MOS-FET	1.14	.71	.62
FT3820	20 V, P-CH, J-FET amp	.74	.46	.40
MPF102	25 V, N-CH, J-FET amp	.50	.39	.32
MPF108	25 V, N-CH, J-FET amp	.80	.56	.42
MPF109	25 V, N-CH, J-FET amp	.70	.49	.38
MPF111	20 V, N-CH, J-FET amp	.34	.27	.23
MPF112	25 V, N-CH, J-FET amp	.34	.27	.23

MICROWAVE TRANSISTORS

Fairchild Type	Function	Net Each, Lots of		
		1-24	25-99	100 Up
2N2857	UHF small signal	$ 3.30	$ 2.90	$ 2.20
2N3570		9.65	8.00	7.25
2N3571		4.10	3.40	3.05
2N3572		3.55	2.95	2.65
2N2632	GP RF power	13.75	11.40	10.30
2N3683	UHF small signal	2.55	2.25	1.70
2N3839		8.70	7.20	6.55
2N3880		5.50	4.85	3.65
2N4428	1 W, 1 GHz amplifier	8.00	6.65	6.00
2N5025	20 W, 50 MHz amplifier	24.00	20.00	18.30
2N5026	25 W, 80 MHz amplifier	27.80	23.00	20.85
2N5031	UHF small signal	8.00	6.60	6.00
2N5032		6.00	4.95	4.50
2N5179		.80	.65	.59
2N5470	1 W 2 GHz amplifier	75.00	60.00	52.80
2N5761	4 GHz low noise amplifier	49.00	39.00	34.50
2N5762	4 GHz low noise amplifier	25.00	20.00	17.00
FMT990	Low noise amplifier	1.75	1.55	.....
FMT1060	UHF oscillator	6.75	5.95	4.50
FMT1060A	UHF oscillator	9.30	8.25	6.20
FMT1061	UHF small signal	6.75	5.95	4.50
FMT1061A	UHF small signal	9.30	8.25	6.20
FMT2001	1 W 2 GHz common base amp	78.00	63.00	55.00
FMT2003	3 W 2 GHz common base amp	98.00	79.00	70.00
FMT2005	5 W 2 GHz common base amp	125.00	100.00	88.00
FMT2060	UHF small signal	2.20	1.95	1.50
FMT4000	4 GHz low noise amplifier	137.00	110.00	97.00
FMT4005	4 GHz low noise amplifier	70.00	56.00	49.50
FMT4013	4 GHz oscillator	41.00	33.00	29.00
FMT4014		64.00	51.00	45.00
FMT4015		102.00	82.00	72.00
FMT4016		62.00	49.50	43.50
FMT4415	2 GHz common emitter amp	22.75	.....	.....
FMT4416	2 GHz common base amp	19.40	.....	.....
FMT4578	4 GHz low noise amplifier	46.00	36.00	32.50
MT5481	1 W 2 GHz com. emitter amp	30.00	24.00	21.00
MT5482	2.5 W 2 GHz com. emitter amp	44.00	35.00	31.00
MT5483	5 W 2 GHz com. emitter amp	89.00	71.00	62.50
MT5595	10 W 1 GHz com. emitter amp	78.00	63.00	55.00
MT5596	20 W 1 GHz com. emitter amp	141.00	113.00	100.00
MT5763	1 W 1 GHz com. emitter amp	17.50	14.00	12.50
MT5764	3 W 1 GHz com. emitter amp	26.00	21.00	18.50
MT5765	5 W 1 GHz com. emitter amp	54.00	43.00	38.00
MT5766	2 W 2 GHz com. base amp	30.00	24.00	21.00
MT5767	2.5 W 2 GHz com. base amp	43.50	35.00	31.00
MT5768	5 W 2 GHz com. base amp	62.00	50.00	40.00

GENERAL PURPOSE AMPLIFIERS

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
2N498	NPN/MET 100 V, 200 mA	$1.94	$1.20	$1.05
2N657	NPN/MET 100 V, 200 mA	1.62	1.01	.88
2N696	NPN/MET 40 V, 150 mA	.52	.40	.37
2N697	NPN/MET 40 V, 150 mA	.51	.32	.27
2N698	NPN/MET 60 V, 150 mA	1.57	1.05	.99
2N699	NPN/MET 80 V, 150 mA	1.14	.71	.62
2N703	NPN/MET 25 V, 25 mA	3.55	2.20	1.91
2N718	NPN/MET 40 V, 150 mA	.46	.32	.27
2N719	NPN/MET 80 V, 150 mA	1.14	.71	.62
2N720	NPN/MET 80 V, 150 mA	1.10	.89	.77
2N722	PNP/MET 50 V, 150 mA	1.37	.85	.74
2N870	NPN/MET 60 V, 150 mA	1.48	.92	.80
2N871	NPN/MET 60 V, 150 mA	1.43	.89	.77
2N909	NPN/MET 30 V, 150 mA	1.65	1.03	.89
2N910	NPN/MET 60 V, 150 mA	.88	.55	.47
2N911	NPN/MET 60 V, 150 mA	.88	.55	.47
2N915	NPN/MET 50 V, 50 mA	1.48	.92	.80
2N916	NPN/MET 25 V, 50 mA	1.21	.75	.65
2N929	NPN/MET 45 V, 25 mA lo-NF, hi-beta	.81	.50	.44
2N930		.45	.28	.24
2N956	NPN/MET 50 V, 500 mA	.66	.40	.35
2N995	PNP/MET 15 V, 100 mA	2.40	1.49	1.29
2N996	PNP/MET 12 V, 100 mA	1.88	1.25	1.20
2N1132	PNP/MET 50 V, 150 mA	.71	.44	.38
2N1613	NPN/MET 50 V, 150 mA	.54	.33	.29
2N1711	NPN/MET 50 V, 500 mA	.57	.35	.31

GP AMPLIFIERS CONT'D ON NEXT PAGE

FAIRCHILD SEMICONDUCTOR

NPN-PNP SILICON SEMICONDUCTORS

GENERAL PURPOSE AMPLIFIERS (CONTINUED)

Fairchild Type	Function		Net Each, Lots of		
			1-99	100-999	1000 Up
2N1893	NPN/MET 60 V, 150 mA		$ 0.86	$0.53	$0.46
2N1973	NPN/MET 60 V, 150 mA		1.77	1.10	.95
2N1974	NPN/MET 60 V, 150 mA		1.60	.99	.85
2N1975	NPN/MET 60 V, 150 mA		1.71	1.06	.92
2N1988	NPN/MET 45 V, 150 mA		1.60	.99	.85
2N1991	NPN/MET		1.88	1.17	1.02
2N2049	NPN/MET 50 V, 150 mA		2.20	1.38	1.20
2N2270	NPN/MET 45 V, 500 mA		.82	.55	.51
2N2443	NPN/MET 100 V, 150 mA		2.75	1.70	1.48
2N2483	NPN/MET 60 V, 25 mA		.66	.40	.35
2N2484	NPN/MET 60 V	25 mA lo-NF, hi-beta	.51	.32	.27
2N2509	NPN/MET 80 V		2.40	1.50	1.31
2N2510	NPN/MET 65 V		2.40	1.50	1.31
2N2511	NPN/MET 50 V		3.60	2.25	1.96
2N2695	PNP/MET 25 V, 500 mA		4.35	2.75	2.40
2N2696	PNP/MET 25 V, 100 mA		1.80	1.12	.97
2N2801	PNP/MET 35 V, 500 mA		2.75	1.70	1.48
2N2838	PNP/MET 35 V, 500 mA		2.50	1.56	1.36
2N2868	NPN/MET 40 V, 500 mA		1.43	.89	.77
2N3019	NPN/MET 80 V, 1 A		1.14	.71	.62
2N3020	NPN/MET 80 V, 1 A		1.62	1.01	.88
2N3053	NPN/MET 40 V, 150 mA		.54	.33	.29
2N3107	NPN/MET 60 V, 1 A		1.14	.71	.62
2N3108	NPN/MET 60 V, 1 A		1.14	.71	.62
2N3109	NPN/MET 40 V, 1 A		1.14	.71	.62
2N3110	NPN/MET 40 V, 1 A		1.12	.71	.62
2N3114	NPN/MET 150 V, 100 mA		2.28	1.42	1.23
2N3117	NPN/MET 60 V, 25 mA lo-NF, hi-beta		2.80	1.75	1.52
2N3494	PNP/MET 80 V, 100 mA		9.75	6.20	5.40
2N3495	PNP/MET 120 V, 100 mA		12.75	8.50	8.25
2N3496	PNP/MET 80 V, 100 mA		9.75	6.20	5.40
2N3497	PNP/MET 120 V, 100 mA		11.50	7.10	6.15
2N3526	NPN/MET 120 V, 100 mA		2.55	1.59	1.39
2N3565	NPN/PLA 25 V, 25 mA lo-NF, hi-beta		.22	.14	.12
2N3566	NPN/PLA 30 V, 500 mA hi-gain		.28	.17	.15
2N3691	NPN/PLA 25 V, 25 mA		.31	.19	.16
2N3692	NPN/PLA 25 V, 25 mA		.31	.19	.16
2N3693	NPN/PLA 45 V, 25 mA		.51	.32	.27
2N3694	NPN/PLA 45 V, 25 mA		.51	.32	.27
2N3700	NPN/MET 80 V, 1 A		2.05	1.27	1.11
2N3701	NPN/MET 80 V, 1 A		1.77	1.10	.95
2N3742	NPN/MET 300 V, 100 mA		6.40	4.00	3.45
2N3743	PNP/MET 300 V, 100 mA		12.60	8.40	7.30
2N3923	NPN/MET 150 V, 50 mA		4.00	2.50	2.15
2N3930	PNP/MET 180 V, 50 mA		6.40	4.00	3.45
2N3931	PNP/MET 180 V, 50 mA		6.40	4.00	3.45
2N3945	NPN/MET 50 V, 500 mA		1.25	.88	.77
2N3962	PNP/MET 60 V, 50 mA lo-NF, hi-beta		.91	.57	.49
2N3963	PNP/MET 80 V lo-NF, hi-beta		1.43	.89	.77
2N3964	PNP/MET 45 V lo-NF, hi-beta		1.48	.92	.80
2N3965	PNP/MET 60 V lo-NF, hi-beta		2.05	1.27	1.11
2N4026	PNP/MET 60 V, 1 A		2.80	1.75	1.52
2N4027	PNP/MET 80 V, 1 A		3.00	1.86	1.62
2N4028	PNP/MET 60 V, 1 A		3.40	2.10	1.85
2N4029	PNP/MET 80 V, 1 A		3.85	2.40	2.10
2N4030	PNP/MET 60 V, 1 A		.90	.61	.54
2N4031	PNP/MET 80 V, 1 A		1.08	.67	.59
2N4032	PNP/MET 60 V, 1 A		1.05	.70	.62
2N4033	PNP/MET 80 V, 1 A		1.32	.88	.77
2N4036	PNP/MET 65 V, 1 A		1.77	1.10	.95
2N4037	PNP/MET 40 V, 1 A		1.43	.89	.77
2N4248	PNP/PLA 40 V	50 mA lo-NF, hi-beta	.22	.14	.12
2N4249	PNP/PLA 60 V		.28	.17	.15
2N4250	PNP/PLA 40 V		.34	.21	.18
2N4354	PNP/PLA 60 V, 1 A		.46	.28	.24
2N4355	PNP/PLA 60 V, 1 A		.51	.32	.27
2N4356	PNP/PLA 80 V, 1 A		.51	.32	.27
2N4357	PNP/MET 240 V, 50 mA		12.00	7.55	6.55
2N4358	PNP/MET 240 V, 50 mA		12.75	7.95	6.95
2N4409	NPN/PLA 50 V, 25 mA		.64	.40	.34
2N4410	NPN/PLA 80 V, 25 mA		.90	.56	.48
2N4888	PNP/PLA 150 V, 50 mA		.52	.32	.28
2N4889	PNP/PLA 150 V, 50 mA		.74	.46	.40
2N4926	NPN/MET 200 V, 100 mA		2.00	1.24	1.08
2N4927	NPN/MET 250 V, 100 mA		2.30	1.42	1.23
2N4960	NPN/MET 60 V, 500 mA		4.55	2.85	2.45
2N4961	NPN/MET 80 V, 500 mA		5.40	3.35	2.95
2N4962	NPN/MET 60 V, 500 mA		4.30	2.65	2.30
2N4963	NPN/MET 80 V, 500 mA		5.15	3.20	2.75
2N4965	PNP/PLA 40 V	50 mA lo-NF hi-beta	.37	.23	.20
2N4967	NPN/PLA 40 V		.37	.23	.20
2N4968	NPN/PLA 25 V		.37	.23	.20
2N4969	NPN/PLA 30 V, 500 mA		.37	.23	.20
2N4970	NPN/PLA 300 V, 500 mA		.37	.23	.20
2N5040	PNP/PLA 25 V, 1 A		.50	.31	.27
2N5042	PNP/MET 40 V, 1 A		3.00	1.88	1.63
2N5058	NPN/MET 300 V, 100 mA		2.70	1.66	1.45
2N5059	NPN/MET 250 V, 100 mA		3.00	1.86	1.62
2N5086	PNP/PLA 50 V, 500 mA		.71	.44	.38
2N5087	PNP/PLA 50 V, 500 mA		.76	.47	.41
2N5088	NPN/PLA 30 V	50 mA lo-NF, hi-beta	.71	.44	.38
2N5089	NPN/PLA 25 V		.93	.58	.50
2N5128	NPN/PLA 12 V, 500 mA		$ 0.20	$ 0.12	$ 0.10
2N5129	NPN/PLA 12 V, 500 mA		.22	.14	.12
2N5131	NPN/PLA 15 V, 50 mA		.22	.14	.12
2N5132	NPN/PLA 20 V, 50 mA		.20	.12	.10
2N5133	NPN/PLA 18 V	50 mA lo-NF, hi-beta	.20	.12	.10
2N5209	NPN/PLA 50 V		.62	.38	.33
2N5210	NPN/PLA 50 V		.69	.43	.37
2N5219	NPN/PLA 15 V, 100 mA		.28	.17	.15
2N5220	NPN/PLA 15 V, 100 mA		.28	.17	.15
2N5221	PNP/PLA 15 V, 500 mA		.31	.19	.16
2N5223	NPN/PLA 20 V, 100 mA		.23	.14	.12
2N5225	NPN/PLA 25 V, 500 mA		.23	.14	.12
2N5226	PNP/PLA 25 V, 500 mA		.28	.17	.15
2N5227	PNP/PLA 30 V, 100 mA		.31	.19	.16
2N5400	PNP/PLA 120 V, 50 mA		.75	.48	.42
2N5401	PNP/PLA 150 V, 50 mA		.91	.59	.52
2N5550	NPN/PLA 140 V, 50 mA		.69	.44	.38
2N5830	NPN/PLA 100 V, 50 mA		.58	.36	.31
2N5831	NPN/PLA 140 V, 50 mA		.65	.40	.35
2N5832	NPN/PLA 140 V, 50 mA		.70	.43	.37
2N5833	NPN/PLA 180 V, 50 mA		.80	.49	.43
2N5855	PNP/PLA 60 V, 500 mA		.59	.37	.32
2N5856	NPN/PLA 80 V, 500 mA		.52	.32	.28
2N5857	PNP/PLA 60 V, 500 mA		.69	.43	.37
2N5858	NPN/PLA 80 V, 500 mA		.64	.40	.34
2N5961	NPN/PLA 60 V	50 mA lo-NF, hi-beta	.50	.31	.27
2N5962	NPN/PLA 45 V		.64	.40	.34
2N5963	NPN/PLA 30 V		.90	.56	.48
2N5964	NPN/PLA 160 V, 50 mA		.65	.40	.35
2N5965	NPN/PLA 180 V, 50 mA		.80	.49	.43
SE1001	NPN/PLA 45 V, 25 mA		.40	.25	.21
SE1002	NPN/PLA 45 V, 25 mA		.46	.29	.25
SE2001	NPN/PLA 20 V, 25 mA		.37	.22	.19
SE2002	NPN/PLA 20 V, 25 mA		.40	.25	.21
SE4001	NPN/PLA 25 V	25 mA lo-NF, hi-beta	.42	.26	.23
SE4002	NPN/PLA 25 V		.46	.29	.25
SE4010	NPN/PLA 25 V		.49	.31	.27
SE4020	NPN/PLA 60 V	50 mA lo-NF, hi-beta	.49	.31	.27
SE4021	NPN/PLA 45 V		.64	.39	.34
SE4022	NPN/PLA 30 V		.88	.55	.47
SE6001	NPN/PLA 30 V, 500 mA		.42	.26	.23
SE6002	NPN/PLA 30 V, 500 mA		.46	.29	.25
SE6010	NPN/PLA 30 V, 500 mA		.60	.37	.32
SE6020	NPN/PLA 60 V, 500 mA		.51	.31	.27
SE6021	NPN/PLA 80 V, 500 mA		.55	.34	.30
SE6022	NPN/PLA 60 V, 500 mA		.51	.31	.27
SE6023	NPN/PLA 80 V, 500 mA		.55	.34	.30
SE7001	NPN/MET 120 V, 100 mA		5.15	3.20	2.75
SE7002	NPN/MET 150 V, 100 mA		4.85	3.00	2.60
SE7010	NPN/MET 150 V, 100 mA		5.15	3.20	2.75
SE7055	NPN/MET 220 V, 100 mA		2.80	1.75	1.52
SE7056	NPN/MET 300 V, 100 mA		3.10	1.91	1.66
SE7057	NPN/MET 450 V, 100 mA		25.50	16.00	13.75
SE7066	NPN/MET 300 V, 100 mA		3.25	1.96	1.71
SE8001	NPN/MET 30 V, 1 A		5.15	3.20	2.75
SE8002	NPN/MET 40 V, 1 A		6.00	3.70	3.25
SE8020	PNP/MET 60 V, 500 mA		1.45	.90	.79
SE8021	PNP/MET 40 V, 500 mA		1.88	1.17	1.02
SE8510	PNP/MET 30 V, 1 A		6.15	3.80	3.30
SE8520	PNP/PLA 40 V, 500 mA		.91	.57	.49
SE8521	PNP/PLA 40 V, 500 mA		.97	.60	.52
MPSA05	NPN/PLA 60 V	350 mA GPA and driver	.50	.31	.27
MPSA06	NPN/PLA 80 V		.57	.35	.31
MPSA09	NPN/PLA 50 V, 10 mA lo-NF		.52	.32	.28
MPSA10	NPN/PLA 40 V, 5 mA		.25	.15	.13
MPSA20	NPN/PLA 40 V, 10 mA		.31	.19	.16
MPSA55	PNP/PLA 60 V	350 mA GPA and driver	.55	.34	.30
MPSA56	PNP/PLA 80 V		.62	.38	.33
MPSA70	PNP/PLA 40 V, 10 mA		.35	.22	.19

HIGH SPEED SWITCHES

2N706	NPN/MET 20 V, 100 mA	$0.34	$0.21	$0.18
2N708	NPN/MET 15 V, 100 mA	.45	.28	.24
2N709	NPN/MET 6 V, 50 mA	.86	.53	.46
2N743	NPN/MET 12 V, 100 mA	.57	.35	.31
2N834	NPN/MET 40 V, 200 mA	.54	.33	.29
2N914	NPN/MET 20 V, 300 mA	.48	.30	.26
2N2368	NPN/MET 15 V, 100 mA	.48	.30	.26
2N2369	NPN/MET 15 V, 100 mA	.40	.25	.25
2N2475	NPN/MET 60 V, 500 mA	1.28	.80	.69
2N2476	NPN/MET 20 V, 500 mA	1.23	.76	.66
2N2477	NPN/MET 20 V, 500 mA	1.20	.74	.65
2N2481	NPN/MET 15 V, 100 mA	.43	.26	.23
2N2710	NPN/MET 20 V, 300 mA	1.62	1.01	.88
2N2845	NPN/MET 30 V, 500 mA	1.43	.89	.77
2N2894	PNP/MET 12 V, 100 mA	.68	.42	.37
2N2894A	PNP/MET 12 V, 100 mA	3.40	2.10	1.85
2N3009	NPN/MET 15 V, 300 mA	.91	.57	.49
2N3010	NPN/MET 6 V, 500 mA	1.14	.71	.62
2N3011	NPN/MET 12 V, 100 mA	.57	.35	.31
2N3012	PNP/MET 12 V, 100 mA	1.25	.78	.68

HIGH SPEED SWITCHES CONT'D ON NEXT PAGE

HIGH SPEED SWITCHES (CONT'D)

Fairchild Type	Function	Net Each, Lots of 1-99	100-999	1000 Up
2N3013	NPN/MET 15 V, 300 mA	$1.03	$0.64	$0.55
2N3014	NPN/MET 20 V, 300 mA	1.00	.62	.54
2N3015	NPN/MET 30 V, 500 mA	.86	.53	.46
2N3209	PNP/MET 20 V, 100 mA	1.28	.80	.69
2N3304	PNP/MET 6 V, 50 mA	1.38	.92	.80
2N3510	NPN/MET 10 V, 500 mA	1.43	.87	.77
2N3511	NPN/MET 15 V, 500 mA	1.95	1.16	1.08
2N3546	PNP/MET 12 V, 100 mA	2.50	1.65	1.43
2N3639	PNP/PLA 6 V, 50 mA	.35	.22	.19
2N3640	PNP/PLA 12 V, 50 mA	.42	.26	.23
2N3646	NPN/PLA 15 V, 300 mA	.28	.17	.15
2N4137	NPN/MET 20 V, 100 mA	1.00	.62	.54
2N4208	PNP/MET 12 V, 50 mA	3.30	2.05	1.77
2N4209	PNP/MET 15 V, 50 mA	4.00	2.50	2.15
2N4257	PNP/PLA 6 V, 50 mA	.37	.23	.20
2N4258	PNP/PLA 12 V, 50 mA	.51	.32	.27
2N4264	NPN/PLA 15 V, 300 mA	.45	.28	.24
2N4265	NPN/PLA 12 V, 300 mA	.52	.32	.28
2N4274	NPN/PLA 12 V, 100 mA	.28	.17	.15
2N4275	NPN/PLA 15 V, 100 mA	.28	.17	.15
2N4313	PNP/PLA 12 V, 50 mA	.54	.34	.29
2N4449	NPN/MET 15 V, 100 mA	4.15	2.55	2.25
2N4916	PNP/PLA 30 V, 100 mA	.31	.19	.16
2N4917	PNP/PLA 30 V, 100 mA	.34	.21	.18
2N5055	PNP/PLA 12 V, 100 mA	.43	.26	.23
2N5057	PNP/MET 15 V, 100 mA	4.55	2.85	2.45
2N5134	PNP/PLA 10 V, 100 mA	.20	.12	.10
2N5140	PNP/PLA 5 V, 50 mA	.45	.28	.24
2N5224	NPN/PLA 12 V, 300 mA	.21	.13	.11
2N5228	PNP/PLA 6 V, 50 mA	.28	.17	.15
2N5455	PNP/MET 15 V, 300 mA	2.55	1.59	1.39
2N5456	PNP/MET 25 V, 300 mA	3.00	1.86	1.62
2N5769	NPN/PLA 15 V, 100 mA	.28	.17	.15
2N5771	PNP/PLA 15 V, 50 mA	.57	.35	.31
2N5772	NPN/PLA 15 V, 300 mA	.28	.17	.15
2N5910	PNP/PLA 20 V, 50 mA	.57	.35	.30
SE3646	NPN/PLA 15 V, 300 mA	.22	.14	.12

QUADS

FQ3467	PNP flat-pak 40 V	$10.00	$6.75	....
FQ3468	PNP flat-pak 50 V	14.00	9.50	....
FQ3724	NPN flat-pak 40 V	10.00	6.75	....
FQ3725	NPN flat-pak 50 V	14.00	9.50	....
FPQ3467	PNP DIP 40 V	5.60	3.75	$3.35
FPQ3768	PNP DIP 50 V	7.90	5.25	4.75
FPQ3724	NPN DIP 40 V	3.40	2.25	2.00
FPQ3725	NPN DIP 50 V	5.60	3.75	3.35

NPN DARLINGTONS

2N997	MET 45 V, 300 mA	$10.50	$6.55	$5.70
2N998	MET 60 V, 300 mA	10.50	6.55	5.70
2N999	MET 60 V, 300 mA	14.50	9.05	7.85
2N2723	MET 45 V, 500 mA	10.00	6.70	6.00
2N2724	MET 45 V, 500 mA	11.00	7.35	6.60
2N2725	MET 45 V, 500 mA	12.00	8.00	7.20
MPSA12	TO-92 20 V, 100 mA	.64	.40	.34
MPSA13	TO-92 30 V, 100 mA	.43	.32	.24
MPSA14	TO-92 30 V, 100 mA	.50	.31	.25

CORE DRIVERS

2N2410	NPN/MET 30 V, 500 mA	$1.82	$1.13	$0.99
2N3252	NPN/MET 30 V, 1 A	3.00	1.86	1.62
2N3253	NPN/MET 40 V, 1 A	3.28	2.04	1.77
2N3467	PNP/MET 40 V, 1 A	3.00	1.86	1.62
2N3468	PNP/MET 50 V, 1 A	5.15	3.20	2.75
2N3722	NPN/MET 60 V, 800 mA	2.30	1.42	1.23
2N3723, 4	NPN/MET 30 V, 1 A	.83	.57	.44
2N3725	NPN/MET 50 V, 1 A	.94	.58	.51
2N3734	NPN/MET 30 V, 1 A	2.50	1.54	1.34
2N4013	NPN/MET 30 V, 1 A	1.85	1.15	1.00
2N4014	NPN/MET 50 V, 1 A	2.00	1.24	1.08
2N4046	NPN/MET 30 V, 1 A	1.28	.80	.69
2N4067	NPN/MET 50 V, 1 A	1.43	.89	.77
2N5022	PNP/MET 50 V, 1 A	3.85	2.40	2.10
2N5023	PNP/MET 30 V, 1 A	3.40	2.10	1.85
2N5845	NPN/TO-92 40 V, 1 A	.71	.44	.38
2N5845A	NPN/TO-92 40 V, 1 A	.86	.53	.46

GENERAL PURPOSE AMPLIFIERS AND SWITCHES

2N2193	NPN/MET 50 V, 500 mA	$1.00	$0.62	$0.54
2N2195	NPN/MET 25 V, 500 mA	1.00	.62	.54
2N2218	NPN/MET 30 V, 500 mA	.57	.35	.31
2N2219	NPN/MET 30 V, 500 mA	.54	.33	.29
2N2221	NPN/MET 30 V, 500 mA	.45	.28	.24
2N2222	NPN/MET 30 V, 500 mA	.40	.25	.21
2N2904	PNP/MET 40 V, 500 mA	.54	.33	.29
2N2905	PNP/MET 40 V, 500 mA	.57	.35	.31
2N2906, 7	PNP/MET 40 V, 500 mA	.43	.26	.23
2N2927	PNP/MET 25 V, 500 mA	1.71	1.06	.92
2N2958	NPN/MET 20 V, 500 mA	2.50	1.50	1.36
2N2959	NPN/MET 20 V, 500 mA	2.70	1.80	1.62
2N3072	PNP/MET 60 V, 500 mA	1.20	.74	.65
2N3073	PNP/MET 60 V, 500 mA	.90	.60	.52
2N3116	NPN/MET 20 V, 500 mA	1.08	.67	.59
2N3133	PNP/MET 35 V, 500 mA	1.25	.78	.68
2N3134	PNP/MET 35 V, 500 mA	1.05	.70	.62
2N3135	PNP/MET 35 V, 500 mA	1.00	.62	.54
2N3250	PNP/MET 40 V, 100 mA	.83	.51	.44
2N3251	PNP/MET 40 V, 100 mA	1.11	.69	.60
2N3299	NPN/MET 30 V, 500 mA	1.03	.64	.55

GP AMPLIFIERS AND SWITCHES (CONT'D)

Fairchild Type	Function	Net Each, Lots of 1-99	100-999	1000 Up
2N3300	NPN/MET 30 V, 500 mA	$0.86	$0.53	$0.46
2N3301	NPN/MET 30 V, 500 mA	.60	.37	.32
2N3302	NPN/MET 30 V, 500 mA	1.20	.74	.65
2N3502	PNP/MET 45 V, 500 mA	1.68	1.04	.91
2N3503	PNP/MET 60 V, 500 mA	2.45	1.52	1.32
2N3504	PNP/MET 45 V, 500 mA	1.68	1.04	.91
2N3505	PNP/MET 60 V, 500 mA	1.71	1.06	.92
2N3567	NPN/PLA 40 V, 1 A	.25	.15	.13
2N3568	NPN/PLA 60 V, 1 A	.37	.23	.20
2N3569	NPN/PLA 40 V, 1 A	.31	.19	.16
2N3634	PNP/MET 140 V, 150 mA	9.00	5.60	4.85
2N3635	PNP/MET 175 V, 150 mA	10.50	6.55	5.70
2N3636	PNP/MET 140 V, 150 mA	14.25	8.85	7.70
2N3637	PNP/MET 175 V, 150 mA	17.10	10.60	9.25
2N3638	PNP/PLA 25 V, 500 mA	.25	.15	.13
2N3641	NPN/PLA 30 V, 500 mA	.31	.19	.16
2N3642	NPN/PLA 45 V, 500 mA	.31	.19	.16
2N3643	NPN/PLA 30 V, 500 mA	.31	.19	.16
2N3644	PNP/PLA 45 V, 500 mA	.34	.21	.18
2N3645	PNP/PLA 60 V, 500 mA	.34	.21	.18
2N3665	NPN/MET 80 V, 500 mA	1.71	1.06	.92
2N3666	NPN/MET 80 V, 500 mA	2.30	1.43	1.25
2N3672	PNP/MET 50 V, 500 mA	1.81	1.21	1.06
2N3903, 4	NPN/PLA 40 V, 100 mA	.51	.32	.27
2N3905, 6	PNP/PLA 40 V, 100 mA	.53	.33	.28
2N3946	NPN/MET 40 V, 50 mA	1.94	1.20	1.05
2N3947	NPN/MET 40 V, 50 mA	2.25	1.40	1.22
2N4034	PNP/MET 40 V, 100 mA	1.71	1.06	.92
2N4035	PNP/MET 40 V, 100 mA	2.00	1.24	1.08
2N4121	NPN/PLA 40 V, 100 mA	.28	.17	.15
2N4122	NPN/PLA 40 V, 100 mA	.31	.19	.16
2N4123	NPN/PLA 25 V, 100 mA	.34	.21	.18
2N4124	NPN/PLA 25 V, 2 mA	.34	.21	.18
2N4125	PNP/PLA 30 V, 2 mA	.34	.21	.18
2N4126	PNP/PLA 25 V, 2 mA	.34	.21	.18
2N4400	NPN/PLA 40 V, 500 mA	.57	.35	.31
2N4401	NPN/PLA 40 V, 150 mA	.71	.44	.38
2N4402	PNP/PLA 40 V, 150 mA	.57	.35	.31
2N4403	PNP/PLA 40 V, 150 mA	.71	.44	.38
2N4436	NPN/PLA 30 V, 500 mA	.40	.25	.21
2N4437	NPN/PLA 30 V, 500 mA	.54	.31	.29
2N4944	NPN/PLA 40 V, 1 A	.38	.23	.20
2N4945	NPN/PLA 60 V, 1 A	.40	.25	.21
2N4946	NPN/PLA 40 V, 1 A	.43	.26	.23
2N5135	NPN/PLA 25 V, 500 mA	.20	.12	.10
2N5136, 7	NPN/PLA 20 V, 500 mA	.22	.14	.12
2N5139	PNP/PLA 20 V, 100 mA	.20	.12	.10
2N5142, 3	PNP/PLA 20 V, 500 mA	.22	.14	.12

DUALS

2N2223	NPN/MET 60 V, 500 mA	$4.30	$2.85	$2.60
2N2639	NPN/MET 45 V, 100 mA	7.00	4.70	4.23
2N2640	NPN/MET 45 V, 100 mA	5.00	3.35	3.00
2N2641	NPN/MET 45 V, 100 mA	3.00	2.00	1.80
2N2642	NPN/MET 45 V, 100 mA	8.50	5.65	5.09
2N2643	NPN/MET 45 V, 100 mA	7.00	4.70	4.25
2N2644	NPN/MET 45 V, 100 mA	4.50	3.00	2.70
2N2913	NPN/MET 45 V, 100 mA	1.45	.88	.77
2N2914	NPN/MET 45 V, 50 mA	2.25	1.40	1.25
2N2915	NPN/MET 45 V, 50 mA	4.30	2.65	2.30
2N2916	NPN/MET 45 V, 50 mA	5.15	3.15	2.75
2N2917	NPN/MET 45 V, 50 mA	2.85	1.75	1.55
2N2918	NPN/MET 45 V, 50 mA	3.55	2.20	1.90
2N2919	NPN/MET 60 V, 50 mA	4.30	2.65	2.30
2N2920	NPN/MET 60 V, 50 mA	5.25	3.40	3.05
2N2972	NPN/MET 45 V, 50 mA	4.30	2.90	2.55
2N2973	NPN/MET 45 V, 50 mA	6.75	4.50	4.05
2N2974	NPN/MET 45 V, 50 mA	13.00	8.70	7.85
2N2975	NPN/MET 45 V, 50 mA	15.00	10.00	9.00
2N2976	NPN/MET 45 V, 50 mA	7.00	4.70	4.25
2N2977	NPN/MET 45 V, 50 mA	10.00	6.70	6.00
2N2978	NPN/MET 60 V, 50 mA	13.00	8.70	7.85
2N2979	NPN/MET 60 V, 50 mA	16.50	11.00	9.90
2N3423	NPN/MET 15 V, 50 mA	11.50	7.70	6.95
2N3424	NPN/MET 15 V, 50 mA	17.00	11.35	10.20
2N3425	NPN/MET 30 V, 500 mA	5.30	3.55	3.20
2N3726	PNP/MET 45 V, 500 mA	6.50	4.35	3.90
2N3727	PNP/MET 45 V, 500 mA	7.50	5.00	4.50
2N3728	NPN/MET 45 V, 500 mA	6.45	4.30	3.90
2N3729	NPN/MET 45 V, 500 mA	6.60	4.90	4.50
2N3800	PNP/MET 60 V, 100 mA	4.30	2.85	2.55
2N3801	PNP/MET 60 V, 100 mA	5.70	3.80	3.40
2N3802	PNP/MET 60 V, 100 mA	7.15	4.75	4.30
2N3803	PNP/MET 60 V, 100 mA	8.50	5.65	5.10
2N3804	PNP/MET 60 V, 100 mA	10.00	6.65	6.00
2N3805	PNP/MET 60 V, 100 mA	14.30	9.55	8.60
2N3806	PNP/MET 60 V, 100 mA	4.30	2.85	2.55
2N3807	PNP/MET 60 V, 100 mA	5.70	3.80	3.40
2N3808	PNP/MET 60 V, 100 mA	7.15	4.75	4.30
2N3809	PNP/MET 60 V, 100 mA	8.50	5.65	5.10
2N3810	PNP/MET 60 V, 100 mA	10.00	6.65	6.00
2N3811	PNP/MET 60 V, 100 mA	14.30	9.55	8.60
2N4015	PNP/MET 60 V, 500 mA	7.15	4.75	4.30
2N4016	PNP/MET 60 V, 500 mA	8.50	5.65	5.10
2N4017	PNP/MET 80 V, 500 mA	10.80	6.60	5.80
2N4018	PNP/MET 60 V, 500 mA	8.65	5.25	4.60
2N4019	PNP/MET 45 V, 500 mA	10.00	6.00	5.25
2N4020	PNP/MET 45 V, 500 mA	10.80	6.60	5.80
2N4021	PNP/MET 60 V, 500 mA	10.80	6.60	5.80
2N4023	PNP/MET 60 V, 500 mA	12.80	7.75	6.80
2N4024	PNP/MET 45 V, 500 mA	12.80	7.75	6.80
2N4025	PNP/MET 60 V, 500 mA	15.00	9.20	8.05

FAIRCHILD
SEMICONDUCTOR

SILICON TRANSISTORS, DIODES AND RECTIFIERS

NPN-PNP POWER TRANSISTORS

NPN except as otherwise noted.

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
2N3054	55 V, 4 A, TO-66	$ 1.10	$ 0.82	$ 0.68
2N3055	60 V, 15 A, TO-3	1.42	1.05	.92
2N3439	350 V, 1 A, 1 W, TO-5	2.00	1.35	1.12
2N3440	250 V, 1 A, 1 W, TO-5	1.35	.90	.75
2N3713	60 V, 10 A, 150 W, TO-3	2.15	1.45	1.18
2N3714	80 V, 10 A, 150 W, TO-3	2.25	1.50	1.24
2N3715	60 V, 10 A, 150 W, TO-3	2.35	1.55	1.30
2N3716	80 V, 10 A, 150 W. TO-3	3.10	2.05	1.71
2N3740*	60 V, 4 A, 25 W, TO-66	1.80	1.20	1.00
2N3741*	80 V, 4 A, 25 W, TO-66	2.10	1.40	1.16
2N3766	60 V, 4 A, 20 W, TO-66	1.62	1.20	1.04
2N3767	80 V, 4 A, 20 W, TO-66	1.83	1.35	1.16
2N3771	40 V, 30 A, 150 W, TO-3	4.13	3.00	2.50
2N3772	60 V, 20 A, 150 W, TO-3	4.13	3.00	2.50
2N3789*	60 V, 10 A, 150 W, TO-3	3.65	2.45	2.03
2N3790*	80 V, 10 A, 150 W, TO-3	4.25	2.85	2.36
2N3791*	60 V, 10 A, 150 W, TO-3	4.20	2.80	2.32
2N3792*	80 V, 10 A, 150 W, TO-3	4.65	3.10	2.57
2N4231	40 V, 3 A, 35 W, TO-66	1.25	.85	.71
2N4232	60 V, 3 A, 35 W, TO-66	1.42	.95	.79
2N4233	80 V, 3 A, 35 W, TO-66	1.85	1.25	1.04
2N4234*	40 V, 3 A, 1 W, TO-5	1.80	1.20	1.00
2N4235*	60 V, 3 A, 1 W, TO-5	2.10	1.40	1.16
2N4236*	80 V, 3 A, 1 W, TO-5	2.30	1.55	1.28
2N4237	40 V, 1 A, 1 W, TO-5	1.35	.90	.75
2N4238	60 V, 1 A, 1 W, TO-5	1.65	1.10	.91
2N4239	80 V, 1 A, 1 W, TO-5	1.80	1.20	1.00
2N4348	120 V, 20 A, 120 W, TO-3	4.40	2.95	2.50
2N4398*	40 V, 30 A, 200 W, TO-3	6.75	5.00	4.50
2N4399*	60 V, 30 A, 200 W, TO-3	8.75	6.50	6.00
2N4877	60 V, 10 W, TO-5	3.75	2.50	2.08
2N4895	60 V, 2 A, 1 W, TO-5	7.55	4.70	4.10
2N4896	60 V, 2 A, 7 W, TO-5	8.85	5.50	4.75
2N4897	80 V, 2 A, 1 W, TO-5	10.85	6.75	5.85
2N4898*	40 V, 1 A, 25 W, TO-66	1.50	1.00	.83
2N4899*	60 V, 1 A, 25 W, TO-66	1.80	1.20	1.00
2N4900*	80 V, 1 A, 25 W, TO-66	2.10	1.40	1.16
2N4901*	40 V, 5 A, 87.5 W, TO-3	1.45	1.30	1.16
2N4902*	60 V, 5 A, 87.5 W, TO-3	2.70	1.80	1.60
2N4903*	80 V, 5 A, 87.5 W, TO-3	3.40	2.25	2.00
2N4904*	40 V, 5 A, 80 W, TO-3	2.31	1.71	1.50
2N4905*	60 V, 5 A, 80 W, TO-3	3.08	2.28	2.00
2N4906*	80 V, 5 A, 80 W, TO-3	3.85	2.85	2.50
2N4907*	40 V, 4 A, 150 W, TO-3	5.25	3.50	2.90
2N4908*	60 V, 4 A, 150 W, TO-3	6.00	4.00	3.32
2N4909*	80 V, 4 A, 150 W, TO-3	6.75	4.50	3.74
2N4910	40 V, 4 A, 25 W, TO-66	1.05	.70	.58
2N4911	60 V, 4 A, 25 W, TO-66	1.20	.80	.67
2N4912	80 V, 4 A, 25 W, TO-66	1.40	.95	.79
2N4913	40 V, 5 A, 80 W, TO-3	1.73	1.20	1.00
2N4914	60 V, 5 A, 80 W, TO-3	1.95	1.30	1.08
2N4915	80 V, 5 A, 80 W, TO-3	2.10	1.40	1.16
2N5002	80 V, 10 A, 60 W power stud	30.00	20.00	19.00
2N5003*	80 V, 10 A, 60 W power stud	36.00	24.00	23.00
2N5004	80 V, 10 A, 60 W power stud	45.00	30.00	29.00
2N5005*	80 V, 10 A, 60 W power stud	54.00	36.00	35.00
2N5067	40 V, 5 A, 80 W, TO-3	1.49	1.00	.83
2N5068	60 V, 5 A, 80 W, TO-3	1.69	1.20	1.00
2N5069	80 V, 5 A, 80 W, TO-3	1.96	1.50	1.24
2N5301	40 V, 30 A, 200 W, TO-3	5.25	3.50	2.90
2N5302	60 V, 30 A, 200 W, TO-3	5.70	3.80	3.15
2N5303	80 V, 20 A, 200 W, TO-3	9.00	6.00	5.00
2N5320	TO-5	1.14	.83	.69
2N5321	TO-5	.91	.66	.55
2N5322*	TO-5	1.40	1.02	.85
2N5323*	TO-5	1.01	.73	.61
2N5334	TO-5	3.05	2.44	1.95
2N5335	TO-5	3.52	2.82	2.25
2N5336	TO-5	4.18	3.34	2.67
2N5337	TO-5	4.53	3.63	2.90
2N5338	TO-5	4.88	3.90	3.13
2N5339	TO-5	5.50	4.38	3.50
2N5346	60 V, 10 A, 50 W, TO-59	36.00	24.00	23.00
2N5347	60 V, 10 A, 50 W, TO-59	39.00	26.00	25.00
2N5348	60 V, 10 A, 50 W, TO-59	45.00	30.00	29.00
2N5349	60 V, 10 A, 50 W, TO-29	51.00	34.00	33.00
2N5629	100 V, 20 A, TO-3	3.65	3.25	3.00
2N5632	100 V, 10 A, TO-3	3.20	2.75	2.55
2N5679*	TO-5	1.65	1.34	1.07
2N5680*	TO-5	1.85	1.48	1.19
2N5681	TO-5	1.40	1.00	.80
2N5682	TO-5	1.65	1.34	1.07
2N5872*	80 V, 7 A, TO-3	1.82	1.39	1.25
2N5873	60 V, 7 A, TO-3	1.35	1.03	.96
2N5874	80 V, 7 A, TO-3	1.65	1.30	1.08
2N5875*	60 V, 10 A, TO-3	2.29	1.75	1.60
2N5876*	80 V, 10 A, TO-3	2.69	2.07	1.85
2N5877	60 V, 10 A, TO-3	1.66	1.26	1.10
2N5878	80 V, 10 A, TO-3	1.99	1.55	1.30
2N5879*	60 V, 15 A, TO-3	3.40	2.61	2.35
2N5880*	80 V, 15 A, TO-3	3.91	3.00	2.70
2N5881	60 V, 15 A, TO-3	2.80	2.15	1.98
2N5882	80 V, 15 A, TO-3	3.12	2.40	2.20
2N5883*	60 V, 25 A, TO-3	3.95	3.05	2.85
2N5884*	80 V, 25 A, TO-3	4.50	3.45	3.25
2N5885	60 V, 25 A, TO-3	3.80	2.90	2.70
2N5886	80 V, 25 A, TO-3	4.30	3.30	3.10
2N6121	45 V, 4 A, 40 W, TO-220	.85	.61	.50
2N6122	60 V, 4 A, 40 W, TO-220	.90	.66	.55
2N6123	80 V, 4 A, 40 W, TO-220	.95	.71	.59
2N6124*	45 V, 4 A, 40 W, TO-220	.90	.60	.55
2N6125*	60 V, 4 A, 40 W, TO-220	.95	.71	.59
2N6126*	80 V, 4 A, 40 W, TO-220	$1.05	$0.76	$0.63
2N6129	40 V, 7 A, 50 W, TO-220	1.10	.80	.66
2N6130	60 V, 7 A, 50 W, TO-220	1.20	.90	.75
2N6131	80 V, 7 A, 50 W, TO-220	1.35	1.00	.83
2N6132*	40 V, 7 A, 50 W, TO-220	1.20	.90	.75
2N6133*	60 V, 7 A, 50 W, TO-220	1.35	1.00	.83
2N6134*	80 V, 7 A, 50 W, TO-220	1.50	1.10	.90
2N6233	TO-66	5.75	4.60	3.90
2N6234	TO-66	6.25	5.00	4.25
2N6235	TO-66	6.75	5.40	4.60

*PNP.

FAST SWITCHING DIODES

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
1N252	25 V 4 ns computer	$0.21	$0.15	$0.10
1N659	60 V 6 ns computer	.21	.15	.10
1N814	50 V 25 ns computer	.27	.20	.14
1N903	60 V 4 ns computer	.45	.33	.23
1N904	50 V 4 ns computer	.45	.33	.23
1N905	40 V 4 ns computer	.45	.33	.23
1N906	40 V 4 ns computer	.24	.17	.12
1N907	50 V 4 ns computer	.24	.17	.12
1N908	60 V 4 ns computer	.24	.17	.12
1N908A	50 V computer diode	.24	.17	.12
1N914	DO-35 pkg. only	.21	.15	.10
JAN1N914	DO-7 pkg.	.23	.18	.13
JTX1N914	DO-7 only	1.65	1.20	.93
1N916	100 V 4 ns computer	.27	.20	.14
1N3062	75 V 2 ns computer	.45	.33	.23
1N3063	75 V 4 ns computer	.22	.16	.11
1N3064	75 V 4 ns computer	.24	.17	.12
JAN1N3064	75 V 4 ns computer	.45	.35	.23
JTX1N3064	75 V 4 ns computer	1.65	1.20	.93
1N3065	75 V 4 ns computer	.45	.33	.23
1N3066	75 V 2 ns computer	.45	.33	.23
1N3067	30 V 4 ns computer	.22	.16	.11
1N3596	20 V 4 ns computer	.45	.33	.23
1N3600	75 V 3 ns computer	.57	.43	.30
JAN1N3600	75 V 3 ns computer	.63	.48	.33
JTX1N3600	75 V 3 ns computer	1.65	1.20	.93
1N3602	75 V 5 ns computer	.22	.16	.11
1N3603	75 V 5 ns computer	.22	.16	.11
1N3604	75 V 4 ns computer	.25	.19	.13
1N3605	40 V 2 ns computer	.25	.19	.13
1N3606	75 V 2 ns computer	.25	.19	.13
1N4009	35 V 4 ns computer	.22	.16	.11
1N4086	4 ns computer	.57	.43	.30
1N4148	100 V 4 ns computer	.21	.15	.10
JAN1N4148	100 V 5 ns computer	.22	.17	.12
JTX1N4148	100 V 5 ns computer	1.65	1.20	.93
1N4149	100 V 4 ns computer	.57	.43	.30
1N4150	75 V 4 ns computer	.57	.43	.30
1N4151	75 V 4 ns computer	.27	.20	.14
1N4152	40 V 2 ns computer	.27	.20	.14
1N4153	75 V 2 ns computer	.27	.20	.14
1N4154	35 V 4 ns computer	.21	.15	.10
1N4244	20 V 0.75 ns computer	1.88	1.40	.97
1N4305	75 V 4 ns computer	.27	.20	.14
1N4322	75 V 4 ns computer	2.63	1.96	1.37
1N4376	20 V 0.75 ns computer	2.25	1.68	1.17
JAN1N4376	20 V 0.75 ns computer	2.75	2.00	1.30
1N4446	100 V 4 ns computer	.21	.15	.10
1N4447	100 V 4 ns computer	.27	.20	.14
1N4448	100 V 4 ns computer	.27	.20	.14
1N4449	100 V 4 ns computer	.27	.20	.14
1N4450	40 V 4 ns computer	.57	.43	.30
1N4454	75 V 4 ns computer	.21	.15	.10
JAN1N4454	75 V 4 ns computer	.22	.17	.12
JTX1N4454	75 V 4 ns computer	1.65	1.20	.93
1N4606	85 V 4 ns computer	.54	.40	.28
1N4607	85 V 4 ns computer	.90	.67	.46
1N4610	80 V 4 ns computer	.54	.40	.28
1N4727	30 V 4 ns computer	.21	.15	.10
1N4950	30 V 4 ns computer	.22	.16	.11
1N5282	80 V 2 ns computer	1.58	1.18	.81

SPECIAL DIODES

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
1N5390	Hot carrier	$1.88	$1.40	$0.97
RF400	AFC diode	1.00	.90	.80
RF401	AFC diode	1.00	.90	.80

1 AMP GLASS RECTIFIERS

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
1N4001	50 V, 1 amp rectifier	$0.30	$0.20	$0.15
1N4002	100 V, 1 amp rectifier	.35	.25	.20
1N4003	200 V, 1 amp rectifier	.45	.35	.26
1N4004	400 V, 1 amp rectifier	.55	.45	.32
1N4005	600 V, 1 amp rectifier	.65	.55	.42

FAIRCHILD SEMICONDUCTOR SILICON DIODES

GENERAL PURPOSE DIODES

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
1N456	30 V low leakage	$0.37	$0.28	$0.19
1N457	70 V low leakage	.37	.28	.19
JAN1N457	70 V low leakage	.45	.35	.23
1N458	150 V low leakage	.37	.28	.19
JAN1N458	150 V low leakage	.45	.35	.23
1N459	200 V low leakage	.37	.28	.19
JAN1N459	200 V low leakage	.45	.35	.23
1N461	30 V general purpose	.37	.28	.19
1N462	70 V general purpose	.37	.28	.19
1N463	200 V general purpose	.37	.28	.19
1N464	150 V general purpose	.37	.28	.19
1N482	40 V general purpose	.37	.28	.19
1N483	80 V general purpose	.37	.28	.19
1N484	150 V general purpose	.37	.28	.19
1N485	200 V general purpose	.60	.44	.31
1N486A	250 V low leakage	.60	.44	.31
1N619	30 V general purpose	.21	.15	.10
1N622	200 V general purpose	.60	.44	.31
1N625	30 V switch	.37	.28	.19
1N626	50 V switch	.37	.28	.19
1N627	100 V switch	.37	.28	.19
1N628	150 V switch	.37	.28	.19
1N629	200 V switch	.60	.44	.31
1N643	200 V switch	.75	.56	.39
JAN1N643	200 V switch	.80	.60	.42
1N658	120 V switch	.37	.28	.19
JAN1N658	125 V switch	.45	.32	.22
1N660	120 V switch	.37	.28	.19
1N661	240 V general purpose	.90	.67	.46
1N662	100 V switch	.37	.28	.19
JAN1N662	100 V switch	.45	.35	.23
JAN1N663	100 V switch	.65	.50	.35
1N663A	100 V switch	.60	.44	.31
1N676	125 V general purpose	.37	.28	.19
1N678	230 V general purpose	.60	.44	.31
1N778	100 V switch	.37	.28	.19
1N779	200 V general purpose	.75	.56	.39
1N789	30 V switch	.37	.28	.19
1N790	30 V switch	.37	.28	.19
1N791	30 V switch	.37	.28	.19
1N792	30 V switch	.60	.44	.31
1N793	60 V switch	.37	.28	.19
1N794	75 V switch	.37	.28	.19
1N795	75 V general purpose	.37	.28	.19
1N796	60 V switch	.60	.44	.31
1N797	115 V switch	.37	.28	.19
1N799	150 V general purpose	.37	.28	.19
1N801	150 V switch	.37	.28	.19
1N804	200 V switch	.75	.56	.39
1N806	125 V switch	.37	.28	.19
1N807	200 V switch	.60	.44	.31
1N808	110 V switch	.60	.44	.31
1N809	220 V switch	.90	.67	.46
1N811	30 V switch	.37	.28	.19
1N812	40 V switch	.60	.44	.31
1N813	20 V switch	.60	.44	.31
1N815	25 V switch	.37	.28	.19
1N816	6 V switch	.37	.28	.19
1N818	75 V switch	.60	.44	.31
1N837	100 V switch	.60	.44	.31
1N838	150 V switch	.75	.56	.39
1N839	200 V switch	.90	.67	.46
1N840	50 V switch	.60	.44	.31
1N841	150 V switch	.75	.56	.39
1N842	200 V switch	.75	.56	.39
1N843	250 V switch	1.17	.86	.57
1N844	100 V general purpose	.21	.15	.10
1N845	200 V switch	1.13	.84	.58
1N890	80 V low leakage	.37	.28	.19
1N891	60 V switch	.37	.28	.19
1N925	40 V general purpose	.21	.15	.10
1N926	40 V general purpose	.21	.15	.10
1N927	65 V switch	.60	.44	.31
1N928	120 V switch	.60	.44	.31
1N3068	30 V switch	.37	.28	.19
1N3069	65 V switch	.37	.28	.19
1N3070	200 V switch	.90	.67	.46
JAN1N3070	200 V switch	1.08	.72	.50
JTX1N3070	200 V switch	1.65	1.20	.93
1N3071	200 V switch	.90	.67	.46
1N3595	150 V low leakage	2.25	1.68	1.17
JAN1N3595	150 V low leakage	2.75	2.00	1.30
1N3597	200 V switch	1.50	1.12	.78
1N4363	150 V switch	.90	.67	.46

DIODE ARRAYS

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
FSA1410M	8 diode c/a core driver	$4.25	$3.76	$3.43
FSA1411M	8 diode c/c core driver	4.25	3.76	3.43
FSA2002M	8 diode c/c core driver	3.71	3.31	3.04
FSA2003M	8 diode c/a core driver	3.71	3.31	3.04
FSA2500M	16 diode core driver	4.25	3.76	3.43
FSA2501M	16 diode core driver	3.71	3.31	3.04
FSA2502M	16 diode core driver	5.39	4.81	4.42
FSA2503M	Dual 8 diode core driver	4.06	3.62	3.33
FSA2504M	Dual 8 diode core driver	4.55	4.06	3.73
FSA2508M	4 x 4 diode ring mod	2.95	2.55	2.15
FSA2509M	Dual 8 diode core driver	2.85	2.45	2.05
FSA2510M	16 diode core driver	2.75	2.35	1.95
FSA2563M	8 diode c/c core driver	2.75	2.35	1.95
FSA2564M	8 diode c/a core driver	2.75	2.35	1.95
FSA2565M	13 diode c/c core driver	2.85	2.45	2.05
FSA2566M	13 diode c/a core driver	2.85	2.45	2.05
FSA2619M	8 diode memory stack	2.85	2.45	2.05
FSA2620M	7 diode memory stack	2.75	2.35	1.95
FSA2621M	7 diode memory stack	3.71	3.31	3.04
FSA2702M	Full wave bridge	5.39	4.81	4.42
FSA2703M	Full wave bridge	5.29	4.71	4.32
FSA2704M	Full wave bridge	4.55	4.06	3.73
FSA2705M	Full wave bridge	4.45	3.96	3.63
FSA2719M	8 diode memory stack	2.75	2.35	1.95
FSA2720M	7 diode memory stack	2.65	2.25	1.85
FSA2721M	7 diode memory stack	3.61	3.21	2.94
FSA2770M	Diode bridge array	4.60	4.10	3.77
FSA2771M	Dual diode array	4.50	4.02	3.69
FSA2772M	Quad diode array	7.80	6.97	6.40
FSA2773M	Diode bridge array	4.40	3.92	3.59
FSA2774M	Dioae bridge array	4.30	3.80	3.47
FSA2775M	Dual common anode array	3.65	3.26	2.99
FSA2776M	3 diode c/a array	3.75	3.35	3.07
FSA2777M	4 diode c/a array	3.85	3.44	3.16
FSA2778M	5 diode c/a array	3.95	3.52	3.24
FSA2779M	6 diode c/a array	4.05	3.61	3.32
FSA2780M	7 diode c/a array	4.15	3.67	3.36
FSA2781M	2 diode c/c array	3.65	3.26	2.99
FSA2782M	3 diode c/c array	3.75	3.35	3.07
FSA2783M	4 diode c/c array	3.85	3.44	3.16
FSA2784M	5 diode c/c array	3.95	3.52	3.24
FSA2785M	6 diode c/c array	4.05	3.61	3.32
FSA2786M	7 diode c/c array	4.15	3.67	3.38
FSA2787M	Dual series diode array	4.15	3.67	3.38
FSA2788M	8 diode core driver	4.60	4.10	3.77

400 mW ZENER DIODES

Fairchild Type	Function	Net Each, Lots of		
		1-99	100-999	1000 Up
1N746	3.3 V, 10% tolerance	$0.85	$0.65	$0.45
1N747	3.6 V, 10% tolerance	.85	.65	.45
1N748	3.9 V, 10% tolerance	.85	.65	.45
1N749	4.3 V, 10% tolerance	.85	.65	.45
1N750	4.7 V, 10% tolerance	.85	.65	.45
1N751	5.1 V, 10% tolerance	.85	.65	.45
1N752	5.6 V, 10% tolerance	.85	.65	.45
1N753	6.2 V, 10% tolerance	.67	.50	.35
1N754	6.8 V, 10% tolerance	.67	.50	.35
1N755	7.5 V, 10% tolerance	.67	.50	.35
1N756	8.2 V, 10% tolerance	.67	.50	.35
1N757A	9.1 V, 5% tolerance	.71	.53	.37
1N758	10.0 V, 10% tolerance	.67	.50	.35
1N759A	12.0 V, 5% tolerance	.71	.53	.37
1N916B	10.0 V, 5% tolerance	.27	.20	.14
1N957A	6.8 V, 10% tolerance	.67	.50	.35
1N958A	7.5 V, 10% tolerance	.67	.50	.35
1N959A	8.2 V, 10% tolerance	.67	.50	.35
1N960A	9.1 V, 10% tolerance	.67	.50	.35
1N961A	10.0 V, 10% tolerance	.67	.50	.35
1N962A	11.0 V, 10% tolerance	.67	.50	.35
1N963A	12.0 V, 10% tolerance	.67	.50	.35
1N964A	13.0 V, 10% tolerance	.67	.50	.35
1N965A	15.0 V, 10% tolerance	.67	.50	.35
1N966A	16.0 V, 10% tolerance	.67	.50	.35
1N967A	18.0 V, 10% tolerance	.67	.50	.35
1N968A	20.0 V, 10% tolerance	.67	.50	.35
1N969A	22.0 V, 10% tolerance	.67	.50	.35
1N970A	24.0 V, 10% tolerance	.67	.50	.35
1N971A	27.0 V, 10% tolerance	.67	.50	.35
1N972A	30.0 V, 10% tolerance	.67	.50	.35
1N973A	33.0 V, 10% tolerance	.67	.50	.35

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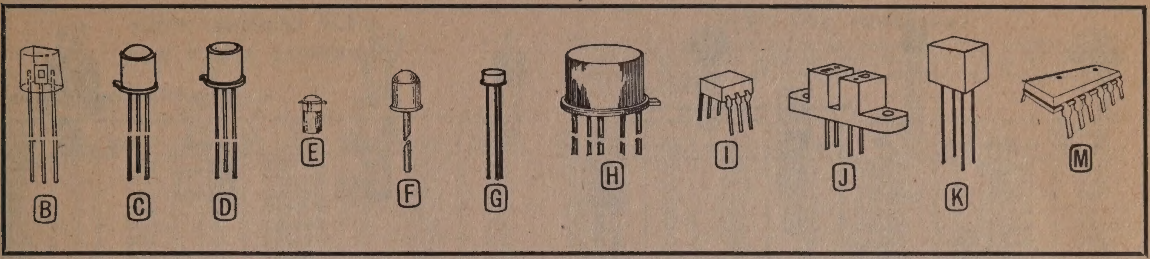

DETECTORS

PHOTO TRANSISTORS

GE Type	Fig.	Minimum Sensitivity mA/mW/cm²	BV_{CEO} Volts	I_D Max. nA	Typical t_r µsec	Typical t_f µsec	Size, Inches Dia. x Lgth.
L15AX601	E	.075	50	25	3	3	.092 x .115
L15AX602	E	.125	50	25	3	3	.092 x .115
L15AX603	E	.20	50	25	3	3	.092 x .115
L15AX604	E	.35	50	25	3	3	.092 x .115
L15A600	E	.05	40	100	3	3	.092 x .115
L15E	F	.15	40	100	3	3	.095 x .115
L14A502	C	.3	45	100	5	5	.230 x .255
L14E1	B	.005	50	100	6	6	.170 x .210
L14E2	B	.01	50	100	15	10	.170 x .210
L14E3	B	.04	50	100	20	15	.170 x .210
L14E4	B	.005	50	10	20	15	.170 x .210
L14C1	D	.1	45	10	5	5	.230 x .170
L14G1	C	.6	45	100	5	5	.230 x .255
L14G2	C	.3	45	100	5	5	.230 x .255

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2N5777	B	.25	25	100	75	50	.170 x .210
2N5778	B	.25	40	100	75	50	.170 x .210
2N5779	B	1.0	25	100	75	50	.170 x .210
2N5780	B	1.0	40	100	75	50	.170 x .210
L14F	C	15	25	100	75	50	.230 x .255

PHOTO SWITCHES

GE Type	Fig.	Irradiance To Trigger mW/cm²	Blocking Volts	I_D Max. µA	V_F Volts	Size, Inches Dia. x Lgth.
L1V	C	10	40	1	2.0	.230 x .255
L14T1	B	.2	40	100 nA	1.6	.170 x .210
L8	G	4.2	25–200	10	1.4	.370 x .260
L9	G	10	25–200	10	1.4	.370 x .260

COUPLERS

PHOTO TRANSISTOR OUTPUT

GE Type	Fig.	Isolation Volts	Minimum Current Transfer Ratio	I_D nA	BV_{CEO} Volts	Typical t_r µsec	Typical t_f µsec	Size, Inches W. x Lgth.
H10A1	H	1000	20%	100	40	3	3	.370* x .260
H11A1	I	2500	50%	50	30	2	2	.385 x .280
H11A2	I	1500	20%	50	30	2	2	.385 x .280
H11A3	I	2500	20%	50	30	2	2	.385 x .280
H11A4	I	1500	10%	50	30	2	2	.385 x .280
H11A5	I	1000	10%	500	30	2	2	.385 x .280
H15A1	K	4000	20%	100	30	3	3	.250 x .375
H15A2	K	4000	10%	100	30	3	3	.250 x .375
H211A1	M	2500	50%	50	30	2	2	.385 x .785
H211A2	M	1500	20%	50	30	2	2	.385 x .785
4N35	I	2500 rms	100%	50	30	5	5	.385 x .280
4N36	I	1750 rms	100%	50	30	5	5	.385 x .280
4N37	I	1050 rms	100%	50	30	5	5	.385 x .280

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H10B1	H	1000	200%	100	25	125	100	.370* x .260
H11B1	I	2500	500%	100	25	125	100	.385 x .280
H11B2	I	1500	200%	100	25	125	100	.385 x .280
H15B1	K	4000	400%	100	25	125	100	.250 x .375
H15B2	K	4000	200%	100	25	125	100	.250 x .375
H211B1	M	2500	500%	100	25	125	100	.385 x .785
H211B2	M	1500	200%	100	25	125	100	.385 x .785

PHOTO SCR

GE Type	Fig.	Isolation Volts	I_F to Trigger mA	I_D µA	Blocking Volts	Typical t_{on} µsec	V_F Volts	Size, Inches W. x Lgth.
H10C1	H	1000	50	10	200	1	1.5	.370* x .260
H11C1	I	2500	20	2	200	....	1.5	.385 x .280
H11C2	I	1500	20	2	200	....	1.5	.385 x .280
H211C1	M	2500	20	2	200	....	1.5	.385 x .785
H211C2	M	1500	20	2	200	....	1.5	.385* x .785

*Diameter.

PHOTON COUPLED INTERRUPTER MODULES

PHOTO TRANSISTOR OUTPUT

GE Type	Fig.	Output Current* µA	I_D nA	BV_{CEO} Volts	Typical t_{on} µsec	Typical t_f µsec	Size, Inches ‡ x Lgth.
H13A1	J	200	100	30	5	5	.125 x .984
H13A2	J	50	100	30	5	5	.125 x .984

PHOTO DARLINGTON OUTPUT

H13B1	J	1000†	100	25	150	150	.125 x .984
H13B2	J	500†	100	25	150	150	.125 x .984

*At I_F=20 mA. †At I_F=10 mA. ‡Length between pins.

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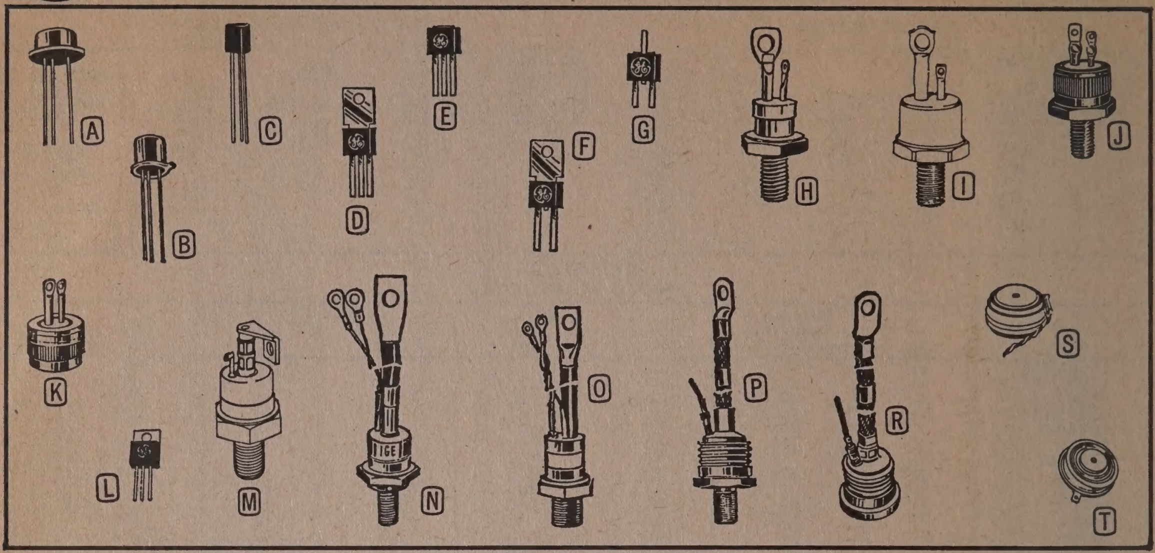
Silicon Controlled Rectifiers



SCR's FOR PHASE CONTROL

"Phase Control" is a term used to describe silicon controlled rectifiers having slow turn-off time. Primary application for a device with relatively slow turn-off time are AC phase control—hence the name "phase control". This type of device is also used for zero voltage switching and selected pulse applications.

15 VOLTS TO 500 VOLTS

rms Current Amps	Fig.	GE Type										
		For Repetitive Peak Forward and Blocking Voltage of (Volts)										
		15	25	30	50	100	150	200	250	300	400	500
0.5	B			2N877	2N878*	2N879	2N880	2N881				
0.8	C			C103Y	C103YY*	C103A		C103B				
1.6	A		2N2344		2N2345	2N2346	2N2347	2N2348				
1.6	A		2N2322		2N2323	2N2324	2N2325	2N2326	2N2327	2N2328	2N2329	
1.6	A				2N1595	2N1596		2N1597	2N1598	2N1599		
4.0	D,E,F,G	C106Q		C106Y	C106F	C106A		C106B		C106C		
4.0	D,E,F,G	C107Q		C107Y	C107F	C107A		C107B		C107C		
7.4	H		C10U		C10F	C10A	C10G	C10B	C10H	C10C	C10D	
7.4	H		2N1770A		2N1771A	2N1772A	2N1773A	2N1774A	2N1775A	2N1776A	2N1777A	
7.4	H		C11U		C11F	C11A	C11G	C11B	C11H	C11C	C11D	
7.4	H		2N1770		2N1771	2N1772	2N1773	2N1774	2N1775	2N1776	2N1777	2N1778
7.4	J		C220U		C220F	C220A		C220B		C220C	C220D	C220E
7.4	K		C222U		C222F	C222A		C222B		C222C	C222D	C222E
8.0	H		C15		C15F	C15A	C15G	C15B	C15H	C15C	C15D	C15E
8.0	L				C122F			C122B			C122D	C122E
16.0	H		2N1842		2N1843	2N1844	2N1845	2N1846	2N1847	2N1848	2N1849	2N1850
16.0	H		C36U		C36F	C36A	C36G	C36B	C36H	C36C	C36D	C36E
25.0	J		C230U		C230F	C230A		C230B	C230H	C230C	C230D	C230E
25.0	J		C231U		C231F	C231A		C231B	C231H	C231C	C231D	C231E
25.0	K		C232U		C232F	C232A		C232B	C232H	C232C	C232D	C232E
25.0	K		C233U		C233F	C233A		C233B	C233H	C233C	C233D	C233E
25.0	H		C37U		C37F	C37A		C37B		C37C	C37D	C37E
25.0	H		2N681		2N682	2N683	2N684	2N685	2N686	2N687	2N688	2N689
35.0	H		C35U		C35F	C35A	C35G	C35B	C35H	C35C	C35D	C35E
35.0	H		C38U		C38F	C38A	C38G	C38B	C38H	C38C	C38D	C38E
35.0	H											C137E
55.0	M		C45U		C45F	C45A	C45G	C45B	C45H	C45C	C45D	C45E
55.0	N		C46U		C46F	C46A	C46G	C46B	C46H	C46C	C46D	C46E
63.0	I		C147U		C147F	C147A	C147G	C147B	C147H	C147C	C147D	C147E
110.0	N		2N1909		2N1910	2N1911	2N1912	2N1913	2N1914	2N1915	2N1916	C50E
110.0	M		C52U		2N1792	2N1793	2N1794	2N1795	2N1796	2N1797	2N1798	C52E
110.0	N											C150E
110.0	M											C152E
110.0	N		2N2023		2N2024	2N2025	2N2026	2N2027	2N2028	2N2029	2N2030	C60E
110.0	M		C62U		C62F	C62A	C62G	C62B	C62H	C62C	C62D	C62E

*60 volts.

600 VOLTS TO 1300 VOLTS

rms Current Amps	Fig.	GE Type							
		For Repetitive Peak Forward and Blocking Voltage of (Volts)							
		600	700	800	900	1000	1100	1200	1300
25.0	H	C37M*	C37S	C37N					
25.0	H	2N690	2N691	2N692					
35.0	H	C35M	C35S	C35N					
35.0	H	C137M	C137S	C137N	C137T	C137P	C137PA		
35.0	H	2N5204		2N5205		2N5206		2N5207	
55.0	M	C45M	C45S	C45N					
55.0	N	C46M	C46S	C46N					
63.0	I	C147M	C147S	C147N	C147T	C147P	C147PA	C147PB	
110.0	N	C50M	C50S	C50N					
110.0	M	C52M	C52S	C52N					
110.0	N	C150M	C150S	C150N	C150T	C150P	C150PA	C150PB	C150PC
110.0	M	C152M	C152S	C152N	C152T	C152P	C152PA	C152PB	C152PC
110.0	N	C60M	C60S	C60N					
110.0	M	C62M	C62S	C62N					

*Also available at 7.4 amps (600 volts); order by GE Type 2N2619 (Fig. H).

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Silicon Controlled Rectifiers

HIGH CURRENT SCR's FOR PHASE CONTROL

See previous page for illustrations.

GE Type	Fig.	Volts*	rms Amps	GE Type	Fig.	Volts*	rms Amps
C350A	T	100	180	C287PA	R	1000	400
C350B	T	200	180	C287PB	R	1200	400
C350C	T	300	180	C287PC	R	1300	400
C350D	T	400	180	C287PD	R	1400	400
C350E	T	500	180	C287PE	R	1500	400
C350M	T	600	180	C287PM	R	1600	400
C350S	T	700	180	C290A	P	100	470
C350N	T	800	180	C290B	P	200	470
C350T	T	900	180	C290C	P	300	470
C350P	T	1000	180	C290D	P	400	470
C350PA	T	1100	180	C290E	P	500	470
C350PB	T	1200	180	C290M	P	600	470
C350PC	T	1300	180	C290S	P	700	470
C180E	O	500	235	C290N	P	800	470
C180M	O	600	235	C290T	P	900	470
C180S	O	700	235	C290P	P	1000	470
C180N	O	800	235	C290PA	P	1100	470
C180T	O	900	235	C290PB	P	1200	470
C180P	O	1000	235	C291A	R	100	470
C180PA	O	1100	235	C291B	R	200	470
C180PB	O	1200	235	C291C	R	300	470
C180PC	O	1300	235	C291D	R	400	470
C280S	P	700	235	C291E	R	500	470
C280N	P	800	235	C291M	R	600	470
C280T	P	900	235	C291S	R	700	470
C280P	P	1000	235	C291N	R	800	470
C280PA	P	1100	235	C291T	R	900	470
C280PB	P	1200	235	C291P	R	1000	470
C280PC	P	1300	235	C291PA	R	1100	470
C280PD	P	1400	235	C291PB	R	1200	470
C280PE	P	1500	235	C390E	T	500	850
C280PM	P	1600	235	C390M	T	600	850
C280PS	P	1700	235	C390S	T	700	850
C380A	T	100	380	C390N	T	800	850
C380B	T	200	380	C390T	T	900	850
C380C	T	300	380	C390P	T	1000	850
C380D	T	400	380	C390PA	T	1100	850
C380E	T	500	380	C390PB	T	1200	850
C380M	T	600	380	C501M	S	600	850
C380S	T	700	380	C501S	S	700	850
C380N	T	800	380	C501N	S	800	850
C380T	T	900	380	C501T	S	900	850
C380P	T	1000	380	C501P	S	1000	850
C380PA	T	1100	380	C501PA	S	1100	850
C380PB	T	1200	380	C501PB	S	1200	850
C380PC	T	1300	380	C501PC	S	1300	850
C282S	P	700	400	C501PD	S	1400	850
C282N	P	800	400	C501PE	S	1500	850
C282T	P	900	400	C501PM	S	1600	850
C282P	P	1000	400	C501PS	S	1700	850
C282PA	P	1100	400	C530A	S	100	1100
C282PB	P	1200	400	C530B	S	200	1100
C282PC	P	1300	400	C530C	S	300	1100
C282PD	P	1400	400	C530D	S	400	1100
C282PE	P	1500	400	C530E	S	500	1100
C282PM	P	1600	400	C530M	S	600	1100
C282PS	P	1700	400	C520A	S	100	1250
C283S	R	700	400	C520B	S	200	1250
C283N	R	800	400	C520C	S	300	1250
C283T	R	900	400	C520D	S	400	1250
C283P	R	1000	400	C600E	T	500	1400
C283PA	R	1100	400	C600M	T	600	1400
C283PB	R	1200	400	C600S	T	700	1400
C283PC	R	1300	400	C600N	T	800	1400
C283PD	R	1400	400	C600T	T	900	1400
C283PE	R	1500	400	C600P	T	1000	1400
C283PM	R	1600	400	C600PA	T	1100	1400
C283PS	R	1700	400	C600PB	T	1200	1400
C286S	P	700	400	C601PA	T	1100	1100
C286N	P	800	400	C601PB	T	1200	1100
C286T	P	900	400	C601PC	T	1300	1100
C286P	P	1000	400	C601PD	T	1400	1100
C286PA	P	1100	400	C601PE	T	1500	1100
C286PB	P	1200	400	C601PM	T	1600	1100
C286PC	P	1300	400	C601PS	T	1700	1100
C286PD	P	1400	400	C701PA	T	1100	1950
C286PE	P	1500	400	C701PB	T	1200	1950
C286PM	P	1600	400	C701PD	T	1400	1950
C287S	R	700	400	C701PE	T	1500	1950
C287N	R	800	400	C701PM	T	1600	1950
C287T	R	900	400	C701PS	T	1700	1950
C287P	R	1000	400				

GE Series C602—(940 amps) available from 1600 to 2600 volts; write for more information.

*Repetitive peak forward and reverse voltage.

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SCR's FOR INVERTERS

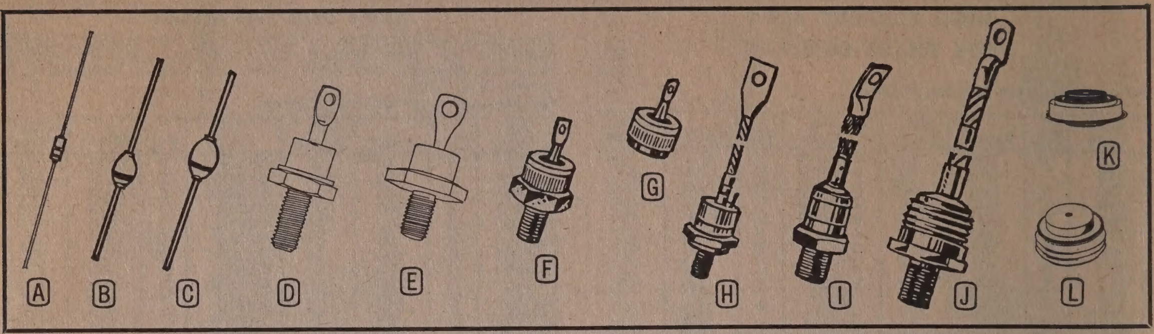
These SCR's are optimized for turn-off time (commutation speed), capability and other dynamic characteristics. Ideal for AC/DC inverters, choppers and other pulse applications requiring high speed capability.

See previous page for illustrations.

GE Type	Fig.	Volts‡	rms Amps	GE Type	Fig.	Volts‡	rms Amps
C140F*	H	50	35	C358P	T	1000	225
C140A*	H	100	35	C358PA	T	1100	225
C140B*	H	200	35	C358PB	T	1200	225
C140C*	H	300	35	C185A	O	100	300
C140D*	H	400	35	C185B	O	200	300
C141F†	H	50	35	C185C	O	300	300
C141A†	H	100	35	C185D	O	400	300
C141B†	H	200	35	C185E	O	500	300
C141C†	H	300	35	C185M	O	600	300
C141D†	H	400	35	C364A	S	100	275
C138E	H	500	35	C364B	S	200	275
C138M	H	600	35	C364C	S	300	275
C138S	H	700	35	C364D	S	400	275
C138N	H	800	35	C364E	S	500	275
C139E	H	500	35	C364M	S	600	275
C139M	H	600	35	C365A	S	100	275
C139S	H	700	35	C365B	S	200	275
C139N	H	800	35	C365C	S	300	275
C144E	H	500	35	C365D	S	400	275
C144M	H	600	35	C365E	S	500	275
C144S	H	700	35	C365M	S	600	275
C144N	H	800	35	C385A	S	100	400
C149A	I	100	63	C385B	S	200	400
C149B	I	200	63	C385C	S	300	400
C149C	I	300	63	C385D	S	400	400
C149D	I	400	63	C385E	S	500	400
C149E	I	500	63	C385M	S	600	400
C149M	I	600	63	C387E	T	500	550
C151E	N	500	110	C387M	T	600	550
C151M	N	600	110	C387S	T	700	550
C151S	N	700	110	C387N	T	800	550
C151N	N	800	110	C387T	T	900	550
C151T	N	900	110	C387P	T	1000	550
C151P	N	1000	110	C387PA	T	1100	550
C153E	M	500	110	C387PB	T	1200	550
C153M	M	600	110	C388E	T	500	550
C153S	M	700	110	C388M	T	600	550
C153N	M	800	110	C388S	T	700	550
C153T	M	900	110	C388N	T	800	550
C153P	M	1000	110	C388T	T	900	550
C154A	N	100	110	C388P	T	1000	550
C154B	N	200	110	C388PA	T	1100	550
C154C	N	300	110	C388PB	T	1200	550
C154D	N	400	110	C397E	T	500	700
C154E	N	500	110	C397M	T	600	700
C154M	N	600	110	C397S	T	700	700
C156A	M	100	110	C397N	T	800	700
C156B	M	200	110	C397T	T	900	700
C156C	M	300	110	C397P	T	1000	700
C156D	M	400	110	C397PA	T	1100	700
C156E	M	500	110	C397PB	T	1200	700
C156M	M	600	110	C398E	T	500	700
C155A	N	100	110	C398M	T	600	700
C155B	N	200	110	C398S	T	700	700
C155C	N	300	110	C398N	T	800	700
C155D	N	400	110	C398T	T	900	700
C155E	N	500	110	C398P	T	1000	700
C155M	N	600	110	C398PA	T	1100	700
C157A	M	100	110	C398PB	T	1200	700
C157B	M	200	110	C392A	T	100	500
C157C	M	300	110	C392B	T	200	500
C157D	M	400	110	C392C	T	300	500
C157E	M	500	110	C392D	T	400	500
C157M	M	600	110	C392E	T	500	500
C158E	N	500	110	C392M	T	600	500
C158M	N	600	110	C393A	T	100	500
C158S	N	700	110	C393B	T	200	500
C158N	N	800	110	C393C	T	300	500
C158T	N	900	110	C393D	T	400	500
C158P	N	1000	110	C393E	T	500	500
C158PA	N	1100	110	C393M	T	600	500
C158PB	N	1200	110	C394A	T	100	700
C159E	M	500	110	C394B	T	200	700
C159M	M	600	110	C394C	T	300	700
C159S	M	700	110	C394D	T	400	700
C159N	M	800	110	C394E	T	500	700
C159T	M	900	110	C394M	T	600	700
C159P	M	1000	110	C395A	T	100	700
C159PA	M	1100	110	C395B	T	200	700
C159PB	M	1200	110	C395C	T	300	700
C354A	T	100	215	C395D	T	400	700
C354B	T	200	215	C395E	T	500	700
C354C	T	300	215	C395M	T	600	700
C354D	T	400	215	C509M	T	600	775
C354E	T	500	215	C509S	T	700	775
C354M	T	600	215	C509N	T	800	775
C355A	T	100	215	C509T	T	900	775
C355B	T	200	215	C509P	T	1000	775
C355C	T	300	215	C509PA	T	1100	775
C355D	T	400	215	C509PB	T	1200	775
C355E	T	500	215	C609M	T	600	1000
C355M	T	600	215	C609S	T	700	1000
C358E	T	500	225	C609N	T	800	1000
C358M	T	600	225	C609T	T	900	1000
C358S	T	700	225	C609P	T	1000	1000
C358N	T	800	225	C609PA	T	1100	1000
C358T	T	900	225	C609PB	T	1200	1000

*Also available as 2N3649, 50, 51, 52 and 53. †Also available as 2N3654, 55, 56, 57 and 58. ‡Repetitive peak forward and reverse voltage.

Silicon Rectifiers



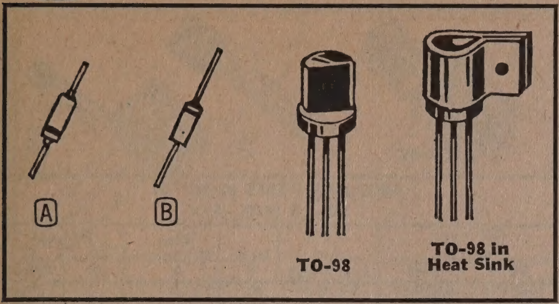
SILICON RECTIFIERS—0.25 TO 1500 AMPS, UP TO 3000 VOLTS

GE Type	Fig.	I_F* Amps	I_{Fm}† Amps	Volts‡
DT230F	A	.25	5	50
DT230A	A	.25	5	100
DT230B	A	.25	5	200
A14F	B	1	50	50
A14A	B	1	50	100
1N5059	B	1	50	200
A14C	B	1	50	300
1N5060	B	1	50	400
A14E	B	1	50	500
1N5061	B	1	50	600
1N5062	B	1	50	800
A14P	B	1	50	1000
A14D	B	1	50	1400
1N4245	B	1	25	200
1N4246	B	1	25	400
1N4247	B	1	25	600
1N4248	B	1	25	800
1N4249	B	1	25	1000
A14F§	B	1	40	50
A14A§	B	1	40	100
A14B§	B	1	40	200
A14C§	B	1	40	300
A14D§	B	1	40	400
A14E§	B	1	40	500
A14M§	B	1	40	600
A14N§	B	1	40	800
A15F	C	3	125	50
A15A	C	3	125	100
1N5624	C	3	125	200
A15C	C	3	125	300
1N5625	C	3	125	400
1N5626	C	3	125	600
1N5627	C	3	125	800
A115F§	C	3	110	50
A115A§	C	3	110	100
A115B§	C	3	110	200
A115C§	C	3	110	300
A115D§	C	3	110	400
A115E§	C	3	110	500
A115M§	C	3	110	600
1N1612	D	5	150	50
1N1613	D	5	150	100
1N1614	D	5	150	200
1N1615	D	5	150	400
1N1616	D	5	150	600
1N1341A	D	6	150	50
1N1342A	D	6	150	100
1N1344A	D	6	150	200
1N1345A	D	6	150	300
1N1346A	D	6	150	400
1N1347A	D	6	150	500
1N1348A	D	6	150	600
1N3988	D	6	150	800
1N3990	D	6	150	1000
1N3879§	D	6	75	50
1N3880§	D	6	75	100
1N3881§	D	6	75	200
1N3882§	D	6	75	300
1N3883§	D	6	75	400
1N1199A	D	12	240	50
1N1200A	D	12	240	100
1N1202A	D	12	240	200
1N1203A	D	12	240	300
1N1204A	D	12	240	400
1N1205A	D	12	240	500
1N1206A	D	12	240	600
1N3671A	D	12	240	800
1N3673A	D	12	240	1000
1N5331	D	12	240	1200
1N3889§	D	12	150	50
1N3890§	D	12	150	100
1N3891§	D	12	150	200
1N3892§	D	12	150	300
1N3893§	D	12	150	400
A129M§	D	12	150	600
A129N§	D	12	150	800
A129P§	D	12	150	1000
A129PB§	D	12	150	1200
A28F§	D	12	240	50
A28A§	D	12	240	100
A28B§	D	12	240	200
A28C§	D	12	240	300
A28D§	D	12	240	400
1N248B	E	20	350	50
1N249B	E	20	350	100
1N250B	E	20	350	200
1N1195A	E	20	350	300
1N1196A	E	20	350	400
1N1197A	E	20	350	500
1N1198A	E	20	350	600
1N3899§	E	20	225	50
1N3900§	E	20	225	100
1N3901§	E	20	225	200
1N3902§	E	20	225	300
1N3903§	E	20	225	400
1N3208	F	20	300	50
1N3209	F	20	300	100
1N3210	F	20	300	200
1N3211	F	20	300	300
1N3212	F	20	300	400
1N3213	F	20	300	500
1N3214	F	20	300	600
A44F	G	20	300	50
A44A	G	20	300	100
A44B	G	20	300	200
A44C	G	20	300	300
A44D	G	20	300	400
A44E	G	20	300	500
A44M	G	20	300	600
A139E	G	20	400	500
A139M	G	20	400	600
A139N	G	20	400	800
A139P	G	20	400	1000
A139PB	G	20	400	1200
1N2154	E	25	400	50
1N2155	E	25	400	100
1N2156	E	25	400	200
1N2157	E	25	400	300
1N2158	E	25	400	400
1N2159	E	25	400	500
1N2160	E	25	400	600
1N3909§	E	30	300	50
1N3910§	E	30	300	100
1N3911§	E	30	300	200
1N3912§	E	30	300	300
1N3913§	E	30	300	400
1N1183	E	35	500	50
1N1184	E	35	500	100
1N1186	E	35	500	200
1N1187	E	35	500	300
1N1188	E	35	500	400
1N1189	E	35	500	500
1N1190	E	35	500	600
1N3766	E	35	500	800
1N3768	E	35	500	1000
1N5332	E	35	500	1200
A70B 1N3289	H	100	1600	200
A70C 1N3290	H	100	1600	300
A70D 1N3291	H	100	1600	400
A70E 1N3292	H	100	1600	500
A70M 1N3293	H	100	1600	600
A70N 1N3294	H	100	1600	800
A70P 1N3295	H	100	1600	1000
A70PB 1N3296	H	100	1600	1200
1N3260	I	160	2000	50
1N3261	I	160	2000	100
1N3263	I	160	2000	200
1N3265	I	160	2000	300
1N3267	I	160	2000	400
1N3268	I	160	2000	500
1N3269	I	160	2000	600
1N3271	I	160	2000	800
1N3273	I	160	2000	1000
A90A 1N3735	I	250	4500	100
A90B 1N3736	I	250	4500	200
A90C 1N3737	I	250	4500	300
A90D 1N3738	I	250	4500	400
A90E 1N3739	I	250	4500	500
A90M 1N3740	I	250	4500	600
A90N 1N3741	I	250	4500	800
A90P 1N3742	I	250	4500	1000
A90PB	I	250	4500	1200
A96A	I	250	3300	100
A96B	I	250	3300	200
A96C	I	250	3300	300
A96D	I	250	3300	400
A96E	I	250	3300	500
A96M	I	250	3300	600
A96N	I	250	3300	800
A96P	I	250	3300	1000
A291PC	J	250	4500	1300
A291PD	J	250	4500	1400
A291PE	J	250	4500	1500
A291PM	J	250	4500	1600
1N4044	I	275	5000	50
1N4045	I	275	5000	100
1N4047	I	275	5000	200
1N4049	I	275	5000	300
1N4050	I	275	5000	400
1N4051	I	275	5000	500
1N4052	I	275	5000	600
1N4054	I	275	5000	800
1N4056	I	275	5000	1000
A390M	K	400	4500	600
A390N	K	400	4500	800
A390P	K	400	4500	1000
A390PB	K	400	4500	1200
A396A	K	400	3300	100
A396B	K	400	3300	200
A396C	K	400	3300	300
A396D	K	400	3300	400
A396E	K	400	3300	500
A295B	J	500	7000	200
A295C	J	500	7000	300
A295D	J	500	7000	400
A295E	J	500	7000	500
A295M	J	500	7000	600
A295N	J	500	7000	800
A295P	J	500	7000	1000
A295PB#	J	500	7000	1200
A540A	L	1000	10000	100
A540B	L	1000	10000	200
A540C	L	1000	10000	300
A540D	L	1000	10000	400
A540E	L	1000	10000	500
A540M	L	1000	10000	600
A540N	L	1000	10000	800
A540P	L	1000	10000	1000
A540PB	L	1000	10000	1200
A540PD•	L	1000	10000	1400
A570A	L	1500	15000	100
A570B	L	1500	15000	200
A570C	L	1500	15000	300
A570D	L	1500	15000	400
A570E	L	1500	15000	500
A570M	L	1500	15000	600
A570N	L	1500	15000	800
A570P	L	1500	15000	1000

*Avg. forward current. †Surge current. ‡Maximum repetitive reverse voltage. §Fast recovery types. #Series A295 available up to 1800, write for information; also available is series A510 ($I_F = 740A$, $I_{Fm} = 8400A$, Fig. L) from 500–3000 volts, write for complete information.
•Series A540 available up to 1800 volts, write for information.

SEE LAST PAGES OF LISTING FOR OEM SEMICONDUCTOR PRICING

SILICON SIGNAL DIODES AND TRANSISTORS



SILICON SIGNAL DIODES (DO-35 PACKAGE)

GE Type	Min. B_V		V_F at I_F		Max. I_R at 25° C		Max. Cap. at 0 V	t_{rr}
	V	µA	V	mA	nA	V	pF	nsec
1N914	100	100	1.0	10	25	20	4	4
1N914A	100	100	1.0	20	25	20	4	4
1N914B	100	100	1.0	100	25	20	4	4
1N916	100	100	1.0	10	25	20	2	4
1N916A	100	100	1.0	20	25	20	2	4
1N916B	100	100	1.0	30	25	20	2	4
1N4148*	100	100	1.0	10	25	20	4	4
1N4149	100	100	1.0	10	25	20	2	4
1N4150*	50	1	1.0	200	100	50	2.5	6†
1N4151	75	5	1.0	50	50	50	2	2
1N4152	40	5	0.88	20	50	30	2	2
1N4153*	75	5	0.88	20	50	50	2	2
1N4154	35	5	1.0	30	100	25	4	2
1N4305	75	5	0.85	10	100	50	2	2
1N4444	70	5	1.0	100	50	50	2	7‡
1N4446	100	100	1.0	20	25	20	4	4
1N4447	100	100	1.0	20	25	20	2	4
1N4448	100	100	1.0	100	25	20	4	4
1N4449	100	100	1.0	30	25	20	2	4
1N4450	40	5	1.0	200	50	30	4	4‡
1N4451	40	5	1.0	300	50	30	6	10‡
1N4454*	75	5	1.0	10	100	50	2	4‡
1N4606	85	100	1.0	200	100	50	4	4‡
1N4607	85	100	1.0	350	100	50	4	10‡
1N4608	85	100	1.0	450	100	50	4	10‡
1N4727	30	5	0.85	10	100	20	4	§
1N4863	70	5	1.2	100	50	50	2	7‡
1N4864	125	100	1.1	100	100	80	1.3	4
DZ800	2	5	0.8	10	2#	2	4	§
DZ805	15	5	0.8	10	2#	12	4	§
DZ806	25	5	0.8	10	2#	22	4	§
DA1701	100	100	1.0	50	50	50	1	2
DA1702	75	5	1.0	50	50	50	1	2
DA1703	40	5	1.0	50	50	30	2	2
DA1704	25	5	1.1	50	100	20	3	4
DT230A	100	.....	1.1	250	1000	250	5	300
DT230B	200	.....	1.1	250	1000	250	5	300
DT230F	50	.....	1.1	250	1000	250	5	300
DT230G	150	.....	1.1	250	1000	250	5	300
DT230H	250	.....	1.0	200	1000	250	5	300
DT230H1	250	.....	1.1	250	1000	250	5	300

*JAN and JANTX type available. †$I_F = 10$ mA, $I_R = 1$ mA, recovery to 0.1 mA. ‡$I_F = I_R = 10$ mA, recovery to 1.0 mA. §$Q_S = 40$ pC. #µA.

MULTIPELLET STABISTORS (FIG. A)

Power dissipation = 400 mW. Derate 2.67 mW/° C for T_A above 25° C. Capacitance value at f = 1 MHz.

GE Type	Min. B_V		Max. V_R	V_F $I_F = 10$ mA	Max. I_R at 25° C		Max. Cap. at 0 V
	V	µA	V	V	nA	V	pF
1N4156	30	5	20	1.38–1.58	50	20	25
1N4157	30	5	20	2.12–2.32	50	20	20
1N4453	30	5	20	.690–.800	50	20	30
1N4829	30	100	20	1.16–1.61	100	20	25
1N4830	30	100	20	1.90–2.35	100	20	20
1N5179	30	5	20	2.60–3.20	50	20	20
MPD200	30	5	30	1.39–1.54	30	30	15 typ.
MPD300	60	5	60	2.10–2.33	30	30	10 typ.
MPD400	90	5	90	2.80–3.07	30	30	7 typ.
STB567	12	5	12	1.31–1.61	.....	....	....
STB568	12	5	12	2.09–2.31	.....	....	....
STB569	12	5	20	2.72–3.01	.....	....	....

MHD (FIG. B)

Milli heatsink diodes rated 500 mW at 25° C free air.

GE Type	DHD Type	Max. I_R at 25° C	GE Type	DHD Type	Max. I_R at 25° C
1N4531*	1N914	25 nA	MA1701	DA1701	50 nA
1N4532	1N4454	100 nA	MA1702	DA1702	50 nA
1N4533	1N4152	50 nA	MA1703	DA1703	50 nA
1N4534	1N4153	50 nA	MA1704	DA1704	100 nA
1N4536	1N4154	100 nA			

*JAN and JANTX types available.

TO-98 plastic packaged devices engineered to deliver excellent performance with maximum value. NPN construction except as otherwise noted. All TO-98 devices can be supplied with leads formed to fit either a TO-5 or TO-18 socket; prices on request.

SMALL SIGNAL AMPLIFIERS
AUDIO TO 30 MHz

$P_T = 360$ mW.

GE Type	h_{FE} $I_C = 2$ mA	V_{CEO} V	Typ. $V_{CE(SAT)}$ V	NF dB	Typical C_{ob} pF	Typical f_t MHz
2N2711	30–90	18	0.2	....	7	120
2N2712	75–225	18	0.2	....	7	120
2N2923	90–180	25	0.2	15†	7	120
2N2924	150–300	25	0.2	15†	7	120
2N2925	235–470	25	0.2	15†	7	120
2N2926*	35–470	18	0.2	....	7	120
2N3390	400–800	25	0.2	....	7	120
2N3391	250–500	25	0.2	1.9	7	120
2N3391A	250–500	25	0.2	5.0	7	120
2N3392	150–300	25	0.2	15†	7	120
2N3393	90–180	25	0.2	15†	7	120
2N3394	55–110	25	0.2	15†	7	120
2N3395*	150–500	25	0.2	....	7	120
2N3396*	90–500	25	0.2	....	7	120
2N3397*	55–500	25	0.2	....	7	120
2N3398*	55–800	25	0.2	....	7	120
2N3721	60–660	18	0.2	....	7	120
2N3900	250–500	18	0.2	1.9	7	120
2N3900A	250–500	18	0.2	5.0	7	120
2N3901	350–700	18	0.2	5.0	7	120
2N5172	100–500	25	0.25‡	....	7	120
2N5998	150–300	25	0.1	0.5	4	350
2N5999#	150–300	25	0.1	0.5	4	350
2N6008	250–500	25	0.1	0.5	4	350
2N6009#	250–500	25	0.1	0.5	4	350

*Supplied in narrow spread, distinctively color-coded beta groups. †Input impedance, ohms. ‡Maximum. #PNP.

HIGH FREQUENCY AMPLIFIERS AND OSCILLATORS
262.5 kHz TO 100 MHz EPITAXIAL

GE Type	h_{FE} $I_C = 2$ mA	V_{CEO} V	Typ. $V_{CE(SAT)}$ V	Max. NF dB	Typical C_{ob} pF	Typical f_t MHz
2N3843	20–40	30	0.065	10.2	2.8	135
2N3843A	20–40	30	0.065	8.5	2.8	135
2N3844	35–70	30	0.065	10.2	2.8	135
2N3844A	35–70	30	0.065	8.5	2.8	135
2N3845	60–120	30	0.065	10.2	2.8	135
2N3845A	60–120	30	0.065	8.5	2.8	135
2N3854	35–70	18	0.085	16*	2.5	300
2N3854A	35–70	30	0.085	16*	2.5	300
2N3855	60–120	18	0.085	16*	2.5	350
2N3855A	60–120	30	0.085	16*	2.5	350
2N3856	100–200	18	0.085	16*	2.5	375
2N3856A	100–200	30	0.085	16*	2.5	375
2N3858	60–120	30	0.055	10*	2.5	135
2N3859	100–200	30	0.055	10*	2.5	135
2N3860	150–300	30	0.055	10*	2.5	135
2N5232	250–500	50	0.055	....	2.5	135
2N5232A	250–500	50	0.055	5	2.5	135
2N5249	400–800	50	0.055	....	2.5	135
2N5249A	400–800	50	0.055	5	2.5	135
2N5309	60–120§	50	0.055	....	2.5	135
2N5310	100–300§	50	0.055	....	2.5	135
2N5311	250–500§	50	0.055	....	2.5	135

100 MHz TO 950 MHz EPITAXIAL

2N3662	20 min.†	12	0.6‡	4	1.2	700
2N3663	20 min.†	12	0.6‡	4	1.2	700
D16G6	20 min.#	12	0.6‡	4	1.5	500

*C_{ib}, pF. †$I_C = 8$ mA, $V_{CE} = 10$ V. ‡Maximum. §$I_C = 10$ µA. #$I_C = 5$ mA, $V_{CE} = 10$ V.

HIGH SPEED SWITCHES

Low storage times; epitaxial gold doped.

GE Type	h_{FE} $I_C = 10$ mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	P_T mW	Typical C_{ob} pF	Typical f_t MHz
2N3605	30 min.	14	0.25	360	4	350
2N3605A	30–120	15	0.25	360	6	300
2N3606	30 min.	14	0.25	360	4	350
2N3606A	30–120	15	0.25	360	6	300
2N3607	30 min.	14	0.25	360	4	350

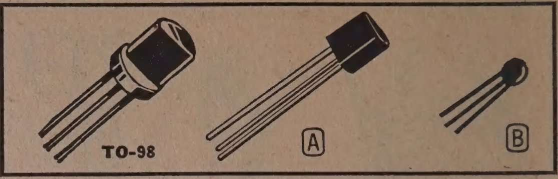
TYPE D13V
INTEGRATED VOLTAGE REGULATOR (IVR)

The IVR consists of two NPN transistors, a zener diode and a resistor on a monolithic chip mounted in a TO-98 three-lead plastic package. It is designed for use as a shunt voltage regulating element and reference amplifier with simple resistor programming. Characteristics: Regulated Voltage Range: 10 volts min.; 40 volts max. TC of Regulated Voltage: 0.3%/°C typ.; 0.1%/°C max. Thevenin Impedance: 10 ohms typ.; 50 ohms max. Thevenin Reference Voltage: 8.5 volts typ.; 10 volts max. Total Average Power: 400 mW.

SEE LAST PAGES OF LISTING FOR OEM SEMICONDUCTOR PRICING

NPN AND PNP SILICON SIGNAL TRANSISTORS

TO-98 and TO-18 (Fig. A) plastic encapsulated devices engineered to deliver excellent performance with maximum value. All signal devices can be supplied with formed leads to fit either TO-5 or TO-18 sockets. Data and pricing on request.



NPN LARGE SIGNAL AMPLIFIERS AND MEDIUM SPEED SWITCHES—EPITAXIAL (TO-98)

GE Type	h_{FE} $I_C=2$ mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	P_T mW	Typical C_{cbo} pF	Typical f_t MHz
2N2713	30–90	18	0.3	360	6.0	120
2N2714	75–225	18	0.3	360	6.0	120
2N3402*	75–225	25	0.3	900	6.0	120
2N3403*	180–540	25	0.3	900	6.0	120
2N3404*	75–225	50	0.3	900	6.0	120
2N3405*	180–540	50	0.3	900	6.0	120
2N3414	75–225	25	0.3	360	6.0	120
2N3415	180–540	25	0.3	360	6.0	120
2N3416	75–225	50	0.3	360	6.0	120
2N3417	180–540	50	0.3	360	6.0	120
2N4256	100–500	30†	0.25	360	4.0	135
2N4424	180–540	40	0.3	360	6.0	120
2N4425*	180–540	40	0.3	900	6.0	120
2N5418	40–120	25	0.25	360	6.0	140
2N5419	100–300	25	0.25	360	6.0	140
2N5420	250–500	25	0.25	360	6.0	140

*TO-98 in heat sink. †V_{CES} value. ‡$I_C=50$ mA.

NPN DARLINGTON AMPLIFIERS (TO-98)

Monolithic Darlington amplifiers ideal for preamplifier input stages requiring high input impedances of several megohms. Available with heatsink which raises P_T to 560 mW. h_{ie} value at f = 1 kHz.

GE Type	h_{FE} $I_C=2$ mA $V_{CE}=5$ V	Min. BV_{CEO} V	Max. h_{ie} $I_C=2$ mA $V_{CE}=5$ V	P_T at 25° C mW	Max. C_{cbo} pF
D16P1	2,000 min.	12	400K ohms	400	10
2N5305	2,000–20,000	25	500K ohms	400	10
2N5306	7,000–70,000	25	500K ohms	400	10
2N5306A†	7,000–70,000	25	500K ohms	400	10
2N5307	2,000–20,000	40	600K ohms	400	10
2N5308	7,000–70,000	40	600K ohms	400	10
2N5308A†	7,000–70,000	40	600K ohms	400	10

†Low noise versions.

PNP DARLINGTON AMPLIFIERS (TO-18)

GE Type	h_{FE} $I_C=2$ mA $V_{CE}=5$ V	V_{CEO} V	Max. $V_{CE(SAT)}$ $I_C=500$ mA	P_T at 25° C mW	Max. C_{cbo} pF
D34C1	2K–20K	40	1.75	500	8
D34C2	7K–70K	40	1.75	500	8
D34C3	50K	40	1.75	500	8
D34C4	2K–20K	25	1.75	500	8
D34C5	7K–70K	25	1.75	500	8
D34C6	50K	25	1.75	500	8

PNP SILICON TRANSISTORS (TO-98)

GE Type	h_{FE}	V_{CEO} V	P_T mW	$V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz
2N5354	40–120	25	360	.25	8	340
2N5355	100–300	25	360	.25	8	340
2N5356	250–500	25	360	.25	8	340
2N5365	40–120	40	360	.25	5.5	340
2N5366	100–300	40	360	.25	5.5	340
2N5367	250–500	40	360	.25	5.5	340
D29A12	250–500	60	360	.25	5.5	340

NPN HIGH VOLTAGE APPLICATIONS (TO-98)

GE Type	h_{FE} $I_C=2$ mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	P_T mW	Typical C_{cbo} pF	Typical f_t MHz
2N3858A	60–120	60	0.25	360	2.5	135
2N3859A	100–200	60	0.25	360	2.5	135
2N3877	20 min.	70	1.0	360	2.5	135
2N3877A	20 min.	85	1.0	360	2.5	135
2N5174	40–600*	75	0.95	360	2.5	135
2N5175	55–160*	100	0.95	360	2.5	135
2N5176	140–300*	100	0.95	360	2.5	135

*$I_C=10$ mA.

NPN HIGH VOLTAGE APPLICATIONS (TO-18)

2N6218	20	300	1	500	5	50
2N6219	20	250	1	500	5	50
2N6220	20	200	1	500	5	50
2N6221	20	150	1	500	5	50

NPN-PNP COMPLEMENTARY PAIRS

$P_T=500$ mW except 2N6000 Series $P_T=400$ mW. Available with heatsink (exc. 2N6000 Series) which raises P_T to 1 W at 25° C Tc.

TO-98

GE Type Polarity NPN	GE Type Polarity PNP	h_{FE} $I_C=2$ mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz
D33D21	D29E1	60–200	25	0.75	9.4	150
D33D22	D29E2	150–500	25	0.75	9.4	165
D33D24	D29E4	60–120	40	0.75	9.4	120
D33D25	D29E5	100–200	40	0.75	9.4	135
D33D26	D29E6	150–300	40	0.75	9.4	150
D33D27	D29E7	250–500	40	0.75	9.4	165
D33D29	D29E9	60–120	60	0.75	9.4	115
D33D30	D29E10	100–200	60	0.75	9.4	135

NPN-PNP PAIRS (CONT'D)

TO-18 (FIG. A)

GE Type Polarity NPN	GE Type Polarity PNP	h_{FE} $I_C=2$ mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz
2N5810	2N5811	60–200	25	0.75	9.0	200
2N5812	2N5813	150–500	25	0.75	9.0	200
2N5814	2N5815	60–120	40	0.75	9.0	200
2N5816	2N5817	100–200	40	0.75	9.0	200
2N5818	2N5819	150–300	40	0.75	9.0	200
2N5820	2N5821	60–120	60	0.75	9.0	200
2N5822	2N5823	100–200	60	0.75	9.0	200
2N6000	2N6001	100–300*	25	0.175†	5.0	250
2N6002	2N6003	250–500*	25	0.175†	5.0	300
2N6004	2N6005	100–300*	40	0.175†	5.0	250
2N6006	2N6007	250–500*	40	0.175†	5.0	300
2N6010	2N6011	100–300*	40	0.130‡	9.0	200
2N6012	2N6013	250–500*	40	0.130‡	9.0	250
2N6014	2N6015	100–300*	60	0.130‡	9.0	200

*$I_C=10$ mA. †NPN; PNP, 0.350 V. ‡NPN; PNP, 0.300 V.

NPN AMPLIFIERS AND SWITCHES (FIG. A)

In TO-18 plastic package. Electrical replacements for hermetic transistors. $P_T=360$ mW at $T_A=25°$ C.

HIGH SPEED SWITCHES—EPITAXIAL

$V_{CEO}=15$ volts except GET3646, $V_{CEO}=20$ volts.

GE Type	h_{FE} $I_C=10$ mA	Max. $V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz	Maximum t_{on} nsec	Maximum t_{off} nsec	Maximum t_s nsec
GET706	20 min.	.250	6.0	350	40	75	35
GET708	30–120	.250	5.5	350	40	75	25
GET914	30–120	.250	5.5	350	40	40	20
GET3013	30–120*	.180	4.5	400	15	16	18
GET3014	30–120*	.180	4.5	400	16	25	18
GET3646	30–120*	.200	4.5	400	18	28	18

*$I_C=30$ mA.

GENERAL PURPOSE AMPLIFIERS AND SWITCHES

GE Type	h_{FE} at I_C Min.-Max.	h_{FE} at I_C mA	V_{CEO} V	Max. $V_{CE(SAT)}$ V	Typical C_{cbo} pF	Typical f_t MHz
GET929	60–120	10*	50	.125	2.5	135
GET930	100–300	10*	50	.125	2.5	135
GET2221	40–120	150	30	.300	5.6	250
GET2221A	40–120	150	40	.300	5.6	250
GET2222	100–300	150	30	.300	5.6	250
GET2222A	100–300	150	40	.300	5.6	250
GET2484	250 min.	1	60	.350	2.5	135
GET3638†	20 min.	1	25	.250	5.8	340
GET3638A†	100 min.	10	25	.250	5.8	340
2N5824	60–120	2	40	.125	1.9	150
2N5825	100–300	2	40	.125	1.9	150
2N5826	150–450	2	40	.125	1.9	150
2N5827	250–500	2	40	.125	1.9	250
2N5828	400–800	2	40	.125	1.9	250

*µA. †PNP.

SILICON PLANAR EPITAXIAL PASSIVATED

NPN MICROTAB (FIG. B)

$P_T=90$ mW. C_{ob} value at f = 1 MHz.

GE Type	h_{FE} at I_C Min.-Max.	h_{FE} at I_C µA	Maximum V_{CEO} V	Maximum V_{EBO} V	Maximum V_{CBO} V	Maximum $V_{CE(SAT)}$ V	Maximum C_{ob} pF	Maximum NF dB
D26B1	20–60	10*	15	4.5	40	0.25	4	†
D26B2	40–120	10*	15	4.5	40	.25	4	‡
D26C1	30–90	10*	18	5	18	0.2	7	....
D26C2	60–180	10*	18	5	18	0.2	7	....
D26C3	140–300	10*	18	5	18	0.2	7	....
D26C4	250–500	10*	18	5	18	0.25	7	....
D26C5	400–800	10*	18	5	18	0.25	7	....
D26E1	100–300	10	45	5	45	1.00	8	3
D26E2	40–90	100	18	5	18	.25	4	6
D26E3	70–145	100	18	5	18	.25	4	5
D26E4	115–220	100	18	5	18	.25	4	4
D26E5	180–330	100	18	5	18	.25	4	3
D26E6	40–330	100	18	5	18	.25	4	6
D26G1	20 min.	3*	15	3	30	.4	3	6

*mA. †$t_{on}=12$ nsec max.; $t_{off}=15$ nsec max. ‡$t_{on}=12$ nsec max.; $t_{off}=18$ nsec max.

PNP MICROTAB (FIG. B)

$P_T=90$ mW.

GE Type	h_{FE} at I_C Min.-Max.	h_{FE} at I_C mA	Maximum V_{CEO} V	Maximum V_{EBO} V	Maximum V_{CBO} V	Maximum $V_{CE(SAT)}$ V	Maximum I_{EBO} nA
D30A1	30–90	10	−18	−4	−18	−.25	−100
D30A2	60–180	10	−18	−4	−18	−.25	−100
D30A3	140–300	10	−18	−4	−18	−.25	−100
D30A4	250–500	10	−18	−4	−18	−.25	−100
D30A5	400–800	10	−18	−4	−18	−.25	−100

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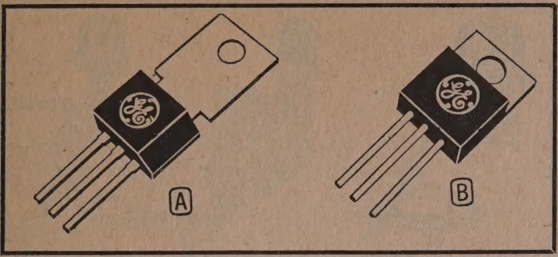
Silicon Power Transistors



Power Tab (Fig. A) and Power Pac (Fig. B) plastic encapsulated devices engineered to deliver excellent performance with maximum value. Can be supplied with formed leads to fit TO-5 or TO-66 configurations. Data and pricing on request.

SILICON POWER TAB TRANSISTORS (FIG. A)

D40D/D41D, D40E/D41E, D42C/D43C are complementary; D40N and D40P applications in CRT video output, regulators, inverters. D40C, D40D, D40E, D40K, D41D, D41E, D42C, D43C applications as audio output, 3 watts to 20 watts; regulators, drivers, inverters, motor controls, lamp controls and relays.

NPN h_{FE} at $V_{CE}=5$ V and $I_C=200$ mA. $V_{CE(SAT)}$ at $I_C=500$ mA and $I_B=0.5$ mA. P_T at 25° C tab.

GE Type	h_{FE}	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D40C1	10K–60K	30	0.5	1.0	1.5	5	75	6.25
D40C2	40K min.	30	0.5	1.0	1.5	5	75	6.25
D40C3	90K min.	30	0.5	1.0	1.5	5	75	6.25
D40C4	10K–60K	40	0.5	1.0	1.5	5	75	6.25
D40C5	40K min.	40	0.5	1.0	1.5	5	75	6.25
D40C7	10K–60K	50	0.5	1.0	1.5	5	75	6.25
D40C8	40K min.	50	0.5	1.0	1.5	5	75	6.25

NPN h_{FE} at $V_{CE}=5$ V and $I_C=200$ mA. $V_{CE(SAT)}$ at $I_C=1.5$ amps and $I_B=3$ mA. P_T at 25° C tab.

D40K1	10K min.	30	1.5	2.5	1.5	5	75	10
D40K2	10K min.	50	1.5	2.5	1.5	5	75	10

NPN h_{FE} at $V_{CE}=10$ V and $I_C=20$ mA. P_T at 25° C tab.

D40N1	30–90	250	0.1	0.2	....	3	80	6.25
D40N2	60–180	250	0.1	0.2	....	3	80	6.25
D40N3	30–90	300	0.1	0.2	....	3	80	6.25
D40N4	60–180	300	0.1	0.2	....	3	80	6.25
D40N5	20 min.	375	0.1	0.2	....	3	80	6.25

NPN h_{FE} at $V_{CE}=2$ V and $I_C=100$ mA. $V_{CE(SAT)}$ at $I_C=500$ mA and $I_B=50$ mA. P_T at 25° C tab.

D40D1	50–150	30	1.0	1.5	0.5	8	200	6.25
D40D2*	120–360	30	1.0	1.5	0.5	8	200	6.25
D40D3	290 min.	30	1.0	1.5	0.5	8	200	6.25
D40D4	50–150	45	1.0	1.5	0.5	8	200	6.25
D40D5	120–360	45	1.0	1.5	0.5	8	200	6.25
D40D7	50–150	60	1.0	1.5	1.0	8	200	6.25
D40D8	120–360	60	1.0	1.5	1.0	8	200	6.25
D40D10	50–150	75	1.0	1.5	1.0	8	200	6.25
D40D11	120–360	75	1.0	1.5	1.0	8	200	6.25
D40D13	50–150	75	1.0	1.5	1.0	8	200	6.25
D40D14	120–360	75	1.0	1.5	1.0	8	200	6.25

NPN h_{FE} at $V_{CE}=2$ V and $I_C=100$ mA. P_T at $T_C=25°$ C.

D40E1	50 min.†	30	2	......	....	.....	.....	8
D40E5	50 min.†	60	2	......	....	.....	.....	8
D40E7	50 min.†	80	2	......	....	.....	.....	8

NPN h_{FE} at $V_{CE}=10$ V and $I_C=80$ mA. $V_{CE(SAT)}$ at $I_C=100$ mA and $I_B=10$ mA. P_T at 25° C tab.

D40P1	40 min.*	120	0.5	1.0	1.0	6	50	6.25
D40P3	40 min.*	180	0.5	1.0	1.0	6	50	6.25
D40P5	40 min.*	225	0.5	1.0	1.0	6	50	6.25

PNP h_{FE} at $V_{CE}=2$ V and $I_C=100$ mA. $V_{CE(SAT)}$ at $I_C=-500$ mA and $I_B=-50$ mA. P_T at 25° C tab.

D41D1	50–150	−30	−1.0	−1.5	−0.5	10	150	6.25
D41D2	120–360	−30	−1.0	−1.5	−0.5	10	150	6.25
D41D3	290 min.	−30	−1.0	−1.5	−0.5	10	150	6.25
D41D4	50–150	−45	−1.0	−1.5	−0.5	10	150	6.25
D41D5	120–360	−45	−1.0	−1.5	−0.5	10	150	6.25
D41D7	50–150	−60	−1.0	−1.5	−1.0	10	150	6.25
D41D8	120–360	−60	−1.0	−1.5	−1.0	10	150	6.25
D41D10	50–150	−75	−1.0	−1.5	−1.0	10	150	6.25
D41D11	120–360	−75	−1.0	−1.5	−1.0	10	150	6.25
D41D13	50–150	−75	−1.0	−1.5	−1.0	10	150	6.25
D41D14	120–360	−75	−1.0	−1.5	−1.0	10	150	6.25

PNP h_{FE} at $V_{CE}=2$ V and $I_C=100$ mA. P_T at $T_C=25°$ C.

D41E1	50 min.†	−30	2	......	....	.....	.....	8
D41E5	50 min.†	−60	2	......	....	.....	.....	8
D41E7	50 min.†	−80	2	......	....	.....	.....	8

*20 when measured at 2 mA collector current. †10 at $V_{CE}=2$ V and $I_C=1$ A.

POWER TAB TRANSISTORS (CONT'D)

NPN h_{FE} at $V_{CE}=1$ V and $I_C=200$ mA. $V_{CE(SAT)}$ at $I_C=1$ A and $I_B=50$ mA. P_T at 25° C tab.

GE Type	h_{FE}§	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D42C1	25 min.	30	3.0	5.0	0.5	100	50	12.5
D42C2	40–120	30	3.0	5.0	0.5	100	50	12.5
D42C3†	40–120	30	3.0	5.0	0.5	100	50	12.5
D42C4	25 min.	45	3.0	5.0	0.5	100	50	12.5
D42C5	40–120	45	3.0	5.0	0.5	100	50	12.5
D42C6†	40–120	45	3.0	5.0	0.5	100	50	12.5
D42C7	25 min.	60	3.0	5.0	0.5	100	50	12.5
D42C8	40–120	60	3.0	5.0	0.5	100	50	12.5
D42C9†	40–120	60	3.0	5.0	0.5	100	50	12.5
D42C10	25 min.	80	3.0	5.0	0.5	100	50	12.5
D42C11*	40–120	80	3.0	5.0	0.5	100	50	12.5
D42C12†	40–120	80	3.0	5.0	0.5	100	50	12.5
D42C100	75 min.	30	3.0	......	....	.....	.....	12.5

NPN h_{FE} at $V_{CE}=10$ V and $I_C=500$ mA. $V_{CE(SAT)}$ at $I_C=500$ mA and $I_B=50$ mA. P_T at 25° C.

D42R1	30 min.	250	1.0	2.0	1.0	30	55	15
D42R2	30 min.	300	1.0	2.0	1.0	30	55	15

PNP h_{FE} at $V_{CE}=-1$ V and $I_C=-200$ mA. $V_{CE(SAT)}$ at $I_C=-1$ A and $I_B=-50$ mA. P_T at 25° C tab.

D43C1	25 min.	−30	−3.0	−5.0	−0.5	125	40	12.5
D43C2	40–120	−30	−3.0	−5.0	−0.5	125	40	12.5
D43C3†	40–120	−30	−3.0	−5.0	−0.5	125	40	12.5
D43C4	25 min.	−45	−3.0	−5.0	−0.5	125	40	12.5
D43C5	40–120	−45	−3.0	−5.0	−0.5	125	40	12.5
D43C6†	40–120	−45	−3.0	−5.0	−0.5	125	40	12.5
D43C7	25 min.	−60	−3.0	−5.0	−0.5	125	40	12.5
D43C8	40–120	−60	−3.0	−5.0	−0.5	125	40	12.5
D43C9†	40–120	−60	−3.0	−5.0	−0.5	125	40	12.5
D43C10	25 min.	−80	−3.0	−5.0	−0.5	125	40	12.5
D43C11*	40–120	−80	−3.0	−5.0	−0.5	125	40	12.5
D43C12†	40–120	−80	−3.0	−5.0	−0.5	125	40	12.5
D43C100	75 min.	−30	−3.0	......	....	.....	.....	12.5

*$h_{FE}=20$ min. at 2 V, 1 A; all others $=10$ min. †$h_{FE}=20$ min. when measured at $I_C=2$ A. §$h_{FE}=20$ min. at 1 V, 1 A on parts 2, 5, 8, 11; $h_{FE}=10$ min. at 1 V, 1 A on parts 1, 4, 7, 10. $V_{CE(SAT)}$ on parts 1, 4, 7, 10 is measured at 1 A, 100 mA.

SILICON POWER PAC TRANSISTORS (FIG. B)

D44C/D45C and D44H/D45H are complementary. Application as audio output, regulators, drivers, inverters, motor and lamp controls and relays. D44R and D44Q applications include 120 VAC line operated amplifiers; low thru high frequency inverters/converters; TV and other display tube deflection and many others.

NPN h_{FE} at $V_{CE}=1$ V and $I_C=200$ mA. $V_{CE(SAT)}$ at $I_C=1$ A and $I_B=50$ mA. P_T at 25° C tab.

GE Type	h_{FE}§	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D44C1	25 min.	30	4.0	6.0	0.5	100	50	30.0
D44C2	40–120	30	4.0	6.0	0.5	100	50	30.0
D44C3†	40–120	30	4.0	6.0	0.5	100	50	30.0
D44C4	25 min.	45	4.0	6.0	0.5	100	50	30.0
D44C5	40–120	45	4.0	6.0	0.5	100	50	30.0
D44C6†	40–120	45	4.0	6.0	0.5	100	50	30.0
D44C7	25 min.	60	4.0	6.0	0.5	100	50	30.0
D44C8	40–120	60	4.0	6.0	0.5	100	50	30.0
D44C9†	40–120	60	4.0	6.0	0.5	100	50	30.0
D44C10	25 min.	80	4.0	6.0	0.5	100	50	30.0
D44C11*	40–120	80	4.0	6.0	0.5	100	50	30.0
D44C12†	40–120	80	4.0	6.0	0.5	100	50	30.0

NPN h_{FE} at $V_{CE}=10$ V and $I_C=2$ amps. $V_{CE(SAT)}$ at $I_C=2$ amps and $I_B=200$ mA. P_T at 25° C tab.

D44Q1	20 min.‡	125	4.0	8.0	1.0	40	50	31.25
D44Q3	20 min.‡	175	4.0	8.0	1.0	40	50	31.25
D44Q5	20 min.‡	225	4.0	8.0	1.0	40	50	31.25

NPN h_{FE} at $V_{CE}=10$ V and $I_C=500$ mA. $V_{CE(SAT)}$ at $I_C=500$ mA and $I_B=50$ mA. P_T at 25° C tab.

D44R1	30–90	250	1.0	2.0	1.0	30	40	31.25
D44R2	75–175	250	1.0	2.0	1.0	30	40	31.25
D44R3	30–90	300	1.0	2.0	1.0	30	40	31.25
D44R4	75–175	300	1.0	2.0	1.0	30	40	31.25
D44R5	30 min.	250	1.0	2.0	1.0•	30	40	31.25
D44R6	30 min.	300	1.0	2.0	1.0•	30	40	31.25
D44R7	150–300	250	1.0	2.0	1.0	30	40	31.25
D44R8	150–300	300	1.0	2.0	1.0	30	40	31.25

*$h_{FE}=20$ min. at 2 V, 1 A; all others $=10$ min. †$h_{FE}=20$ min. when measured at $I_C=2$ A. ‡$h_{FE}=20$ min. at 10 V, 2 A. §$h_{FE}=20$ min. at 1 V, 1 A on parts 2, 5, 8, 11; $h_{FE}=10$ min. at 1 V, 1 A on parts 1, 4, 7, 10, 100. $V_{CE(SAT)}$ on parts 1, 4, 7, 10 is measured at 1 A, 100 mA. •$V_{CE(SAT)}$ measured at $I_C=300$ mA and $I_b=30$ mA.

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POWER TRANSISTORS, UNIJUNCTIONS AND SILICON SWITCHES

POWER PAC TRANSISTORS (CONT'D)

NPN h_{FE} at $V_{CE}=1$ V and $I_C=2$ amps. $V_{CE(SAT)}$ at $I_C=8$ amps and $I_B=0.4$ A (0.8 A for D44H1, 4, 7, 10). P_T at 25° C.

GE Type	h_{FE}	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D44H1	35 min.	30	10	20	1.0	130	50	50
D44H2	60 min.	30	10	20	1.0	130	50	50
D44H4	35 min.	45	10	20	1.0	130	50	50
D44H5	60 min.	45	10	20	1.0	130	50	50
D44H7	35 min.	60	10	20	1.0	130	50	50
D44H8	60 min.	60	10	20	1.0	130	50	50
D44H10	35 min.	80	10	20	1.0	130	50	50
D44H11	60 min.	80	10	20	1.0	130	50	50

PNP h_{FE} at $V_{CE}=-1$ V and $I_C=200$ mA. $V_{CE(SAT)}$ at $I_C=-1$ A and $I_B=50$ mA. P_T at 25° C tab.

GE Type	h_{FE}	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D45C1	25 min.	−30	−4.0	−6.0	−0.5	125	40	30.0
D45C2	40–120	−30	−4.0	−6.0	−0.5	125	40	30.0
D45C3	40–120†	−30	−4.0	−6.0	−0.5	125	40	30.0
D45C4	25 min.	−45	−4.0	−6.0	−0.5	125	40	30.0
D45C5	40–120	−45	−4.0	−6.0	−0.5	125	40	30.0
D45C6	40–120†	−45	−4.0	−6.0	−0.5	125	40	30.0
D45C7	25 min.	−60	−4.0	−6.0	−0.5	125	40	30.0
D45C8	40–120	−60	−4.0	−6.0	−0.5	125	40	30.0
D45C9	40–120†	−60	−4.0	−6.0	−0.5	125	40	30.0
D45C10	25 min.	−80	−4.0	−6.0	−0.5	125	40	30.0
D45C11	40–120	−80	−4.0	−6.0	−0.5	125	40	30.0
D45C12	40–120†	−80	−4.0	−6.0	−0.5	125	40	30.0

†$h_{FE}=20$ min. at −1 V, −2 A.

PNP h_{FE} at $V_{CE}=10$ V and $I_C=200$ mA. $V_{CE(SAT)}$ at $I_C=-8$ A and $I_B=-0.4$ A (−0.8 A for D45H1, 4, 7, 10). P_T at 25° C.

GE Type	h_{FE}	Min. V_{CEO} V	I_C Cont. A	I_C Peak A	Max. $V_{CE(SAT)}$ V	C_{CBO} pF	f_t MHz	P_T W
D45H1	35 min.	−30	−10	−20	−1.0	230	40	50
D45H2	60 min.	−30	−10	−20	−1.0	230	40	50
D45H4	35 min.	−45	−10	−20	−1.0	230	40	50
D45H5	60 min.	−45	−10	−20	−1.0	230	40	50
D45H7	35 min.	−60	−10	−20	−1.0	230	40	50
D45H8	60 min.	−60	−10	−20	−1.0	230	40	50
D45H10	35 min.	−80	−10	−20	−1.0	230	40	50
D45H11	60 min.	−80	−10	−20	−1.0	230	40	50

SINGLE DIFFUSED HERMETICALLY SEALED POWER TRANSISTORS

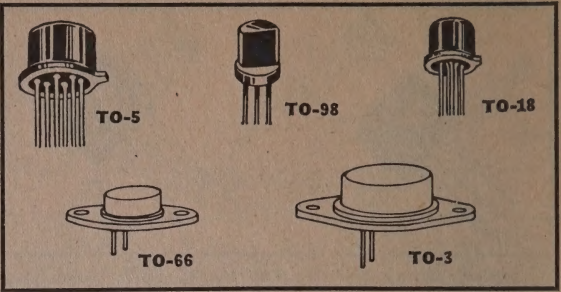
GE Type NPN	Pkg.	h_{FE} Min.	h_{FE} Max.	h_{FE} at I_C Amps	Min. V_{CEO} V	I_C Cont. Amps	P_T W
2N3441	TO-66	25	100	.5	140	3	25
2N3054	TO-66	25	100	.5	55	4	25
2N4347	TO-3	15	60	2	120	5	100
2N4348	TO-3	15	60	5	120	10	120
2N3442	TO-3	20	70	3	140	10	117
2N3055	TO-3	20	70	4	60	15	115
2N3773	TO-3	15	60	8	140	16	150
2N3772	TO-3	15	60	10	60	20	150
2N3771	TO-3	15	60	15	40	30	150

SILICON UNIJUNCTION TRANSISTORS

"N" type silicon bar mounted between two ohmic base contacts with a "P" type emitter near base two. Three-terminal package.

GE Types Bar Structure TO-18	GE Types Bar Structure TO-5	R_{BBO} $V_{BB}=3V$ $I_E=0$ kohms	Intrin. Stand-off Ratio†	I_V Min. mA	I_P Max. Emitter μA	I_{EO} Max. μA	I_{EO} Max. V_{B2E}‡
2N2417	**2N489**	4.7–6.8	.51–.62	8	12	2	60
2N2417A	**2N489A***				12	2	60
2N2417B	**2N489B**				6	0.2	30
2N2418	**2N490**	6.2–9.1	.51–.62	8	12	2	60
2N2418A	**2N490A***				12	2	60
2N2418B	**2N490B**				6	0.2	30
....	**2N490C**				2	0.02	30
2N2419	**2N491**	4.7–6.8	.56–.68	8	12	2	60
2N2419A	**2N491A***				12	2	60
2N2419B	**2N491B**				6	0.2	30
2N2420	**2N492**	6.2–9.1	.56–.68	8	12	2	60
2N2420A	**2N492A***				12	2	60
2N2420B	**2N492B**				6	0.2	30
....	**2N492C**				2	0.02	30
2N2421	**2N493**	4.7–6.8	.62–.75	8	12	2	60
2N2421A	**2N493A***				12	2	60
2N2421B	**2N493B**				6	0.2	30
2N2422	**2N494**	6.2–9.1	.62–.75	8	12	2	60
2N2422A	**2N494A***				12	2	60
2N2422B	**2N494B**				6	0.2	30
....	**2N494C**				2	0.02	30
....	**2N1671**	4.7–9.1	.47–.62	8	25	12	30
....	**2N1671A**				25	12	30
....	**2N1671B**				6	0.2	30
....	**2N1671C**				2	0.02	30
....	**2N2160**	4.0–12.0	.47–.80	8	25	12	30
2N2646*	....	4.7–9.1	.56–.75	4	5	12	30
2N2647*	....	4.7–9.1	.68–.82	8	2	0.2	30
D5E37*	....	4.0–12.0	.47–.85	4	25	12	30
D5E43*	....	4.7–9.1	.68–.82	6	2	1.0	30
D5E44*	....			4	5	12	30
D5E45*	....			8	2	0.5	30

*Cube structure. †$V_{BB}=10$ V. ‡$T_J=25$° C. *JAN type available.



PROGRAMMABLE UNIJUNCTION—PUT (TO-98)

Passivated PNPN devices with anode, anode gate and cathode terminals. Recommended for SCR trigger, pulse and timing circuits, oscillators, sensing and sweep circuits. Gate-cathode forward voltage and gate-anode reverse voltage = 40 V. Anode-cathode voltage = ±40 V.

GE Type	I_{GAO} $V_S=40$ V nA	Max. Values at $V_S=10$ V: I_P μA	Max. Values at $V_S=10$ V: V_T V	Max. Values at $V_S=10$ V: I_V μA	$I_{F(CONT)}$ mA	P_T W
2N6027	10	2	.2–1.6	50	150	300
2N6028	10	0.15	.2–.6	25	150	300

COMPLEMENTARY UNIJUNCTION (TO-18)

D5K offers the ultimate in unijunction stability and uniformity. Ideal for low frequency oscillators and timers. Same characteristics as standard unijunction except opposite polarity current and voltages are applied to it.

GE Type	R_{BO} kohms	Intrinsic Standoff Ratio	I_V Min. mA	I_P Max. μA	I_{EO} Max. nA	V_O Min. Volts	Freq. Stab.* %
D5K1	5.5–8.2	.58–.62	1	5	10	3.5	1.0
D5K2	5–15	.58–.62	1	15	10	2.0	2.0

*Frequency stability from 25° C, −55° C to +150° C.

SILICON ASYMMETRICAL SWITCH (SAS)

Monolithic integrated switch for bistable applications where stability of switching voltage is required. Comes in TO-98 package.

GE Type	Switching Voltage, V_{S^2} Min.	Switching Voltage, V_{S^2} Max.	Switching Voltage, V_{S^1} Min.	Switching Voltage, V_{S^1} Max.	Max. I_{S^2}, I_{S^1} μA	Max. V_{F^2}	V_{F^1} At 100 mA Min.	V_{F^1} At 100 mA Max.
D13H1	7 V	9 V	14 V	18 V	80	1.6 V	7 V	10 V

SILICON BILATERAL SWITCHES (SBS)

6-10 VOLT BIDIRECTIONAL PLANAR TRIGGER DIODE

V_F at 200 mA = 1.7 volts.

GE Type	JEDEC Outline	Max. $I_{F(CONT)}$ mA	T_J −55° C to °C	V_S V	Max. I_S μA	I_B at 5 V μA
2N4991	TO-98	175	+125	6–10	500	1.0
2N4992	TO-98	200	+150	7.5–9	120	0.1
2N4993	TO-18	200	+150	6–10	500	1.0

SILICON UNILATERAL SWITCHES (SUS)

6-10 VOLT PLANAR TRIGGER DIODE

$V_{ACR}=30$ volts maximum. V_F at 200 mA = 1.5 volts.

GE Type	JEDEC Outline	Max. $I_{F(CONT)}$ mA	T_J −55° C to °C	V_S V	Max. I_S μA	I_B at 5 V μA
2N4983	TO-18	175	+125	6–10	500	1.0
2N4984	TO-18	200	+150	7.5–9	150	0.1
2N4985	TO-18	200	+150	7.5–8.2	300	0.01
2N4986	TO-18	175	+125	7–9	200	0.1
2N4987	TO-98	175	+125	6–10	500	1.0
2N4988	TO-98	200	+150	7.5–9	150	0.1
2N4989	TO-98	200	+150	7.5–8.2	300	0.1
2N4990	TO-98	175	+125	7–9	200	0.1

SILICON CONTROL SWITCHES (SCS)

Four-terminal TO-18 package.

GE Type	Anode Blk. V	Cont. DC I_F mA	Peak Recur. I_F A*	Peak Cath. Gate Cur. mA	Dissipation mW	I_B at VAC V	I_B $R_{GC}=10$K μA	Maximum V_{GC} $I_{GC}=20$ μA V	Maximum V_{GA} $I_{GA}=1$ μA V
3N81	65	200	1.0	500	400	65	20	5	65
3N82	100	200	1.0	500	400	100	20	5	100
3N83	70	50	0.1	50	200	70	20†	5	70
3N84	40	175	0.5	100	320	40	20†	5	40
3N85	100	175	0.5	100	320	100	20†	5	100
3N86	65	200	1.0	500	400	65	20	5	65

*At 100 μsec. †Measured at 125° C; all others at 150° C.

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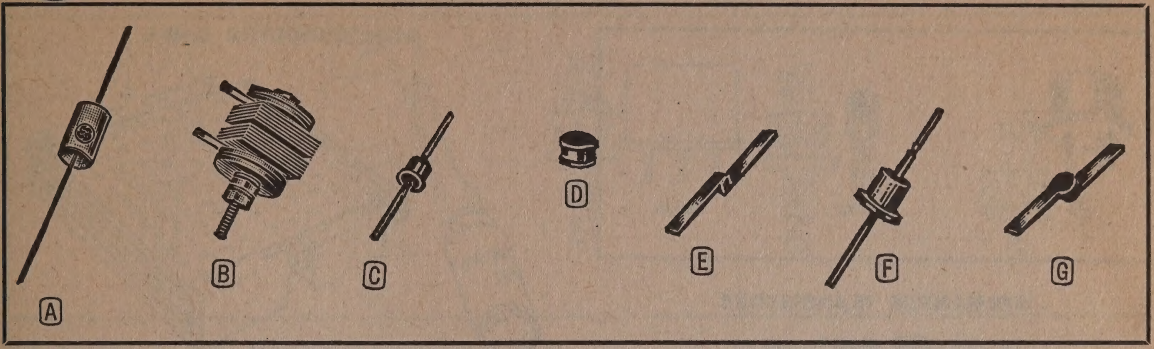
SELENIUM THYRECTOR AND GERMANIUM DIODES, MANUALS



SELENIUM THYRECTOR DIODES

Steady state rating defined as normal input conditions. If non-sinusoidal wave input is present, peak voltage input values should be used to select model. AC leakage is based upon sinusoidal input. 6RS20SP dia., 37/64″; 6RS21SA, 1″ square.

GE Type	Fig.	Steady State Rating Input rms V	 Input Peak V	 Leakage mA AC	Size, Inches L
6RS20SP1B1	A	30	42.4	1.2	1 3/8
6RS20SP2B2	A	60	84.8	1.2	1 3/8
6RS20SP3B3	A	90	127.2	1.2	1 3/8
6RS20SP4B4	A	120	169.6	1.2	1 3/8
6RS20SP5B5	A	150	212.0	1.2	1 3/8
6RS20SP6B6	A	180	254.4	1.2	1 39/64
6RS20SP7B7	A	210	296.8	1.2	1 39/64
6RS20SP8B8	A	240	339.2	1.2	1 39/64
6RS20SP9B9	A	270	381.6	1.2	1 39/64
6RS20SP10B10	A	300	424.4	1.2	1 39/64
6RS20SP11B11	A	330	466.6	1.2	1 27/32
6RS20SP12B12	A	360	509.0	1.2	1 27/32
6RS20SP13B13	A	390	551.4	1.2	1 27/32
6RS20SP14B14	A	420	593.8	1.2	1 27/32
6RS20SP15B15	A	450	636.3	1.2	1 27/32
6RS20SP16B16	A	480	678.7	1.2	2 5/64
6RS20SP17B17	A	510	721.1	1.2	2 5/64
6RS20SP18B18	A	540	763.5	1.2	2 5/64
6RS20SP19B19	A	570	805.9	1.2	2 5/64
6RS20SP20B20	A	600	848.4	1.2	2 5/64
6RS21SA1D1	B	25	35	12	1 7/16
6RS21SA2D2	B	50	70	12	1 1/2
6RS21SA3D3	B	75	105	12	1 5/8
6RS21SA4D4	B	100	140	12	1 11/16
6RS21SA5D5	B	125	175	12	1 3/4
6RS21SA6D6	B	150	210	12	1 7/8
6RS21SA7D7	B	175	245	12	1 15/16
6RS21SA8D8	B	200	280	12	2
6RS21SA9D9	B	225	315	12	2 1/16
6RS21SA10D10	B	250	350	12	2 3/16
6RS21SA11D11	B	275	385	12	2 1/4
6RS21SA12D12	B	300	420	12	2 5/16
6RS21SA13D13	B	325	455	12	2 3/8
6RS21SA14D14	B	350	490	12	2 1/2
6RS21SA15D15	B	375	525	12	2 9/16
6RS21SA16D16	B	400	560	12	2 5/8
6RS21SA17D17	B	425	595	12	2 3/4
6RS21SA18D18	B	450	630	12	2 13/16
6RS21SA19D19	B	475	665	12	2 7/8
6RS21SA20D20	B	500	700	12	2 15/16

GERMANIUM BACK DIODES

BD-1 thru BD-7 (Fig. C)—Miniature axial package. Series inductance, 1.5 nH. General purpose usage as detectors, mixers and switching circuits.

BD-402 thru BD-407 (Fig. D)—Microwave pill package. Series inductance, 0.15 nH. Suggested usage as high frequency detectors, mixers and switching circuits.

Fig. C GE Type	 Maximum I_P mA	 Total C, pF	 Min. V_{R1}* mV	Fig. D GE Type	 Maximum I_P mA	 Total C, pF	 Min. V_{R1}* mV
BD-1	1.0	20	440	**BD-402**	0.5	3	420
BD-2	0.5	10	420	**BD-403**	0.2	1	400
BD-3	0.2	10	400	**BD-404**	0.1	1	380
BD-4	0.1	10	380	**BD-405**	0.05	1	350
BD-5	0.05	10	350	**BD-406**	0.02	1	330
BD-6	0.02	10	330	**BD-407**	0.01	1	330
BD-7	0.01	10	300				
1N4090†	0.2	1.5	430				

*$I_R = I_P$ max. †Low noise mixer, Fig. E.

GERMANIUM LOW CURRENT RECTIFIER DIODES

Max. peak 1-cycle surge = 25 amps.

JEDEC Type	Fig.	PRV Volts	Max. I_{DC} at 55° C_A mA	Max. Rev. Cur., mA *	Max. Full Load Voltage Drop	Max. Oper. Temp.
1N91	F	100	75	1.35	.22 V	95° C
1N92	F	200	100	0.95	.19 V	95° C
1N93*	F	300	150	0.6	.18 V	95° C

*Full cycle avg. *JAN1N93A type available.

GERMANIUM TUNNEL DIODES

Ideal for high speed switching, 1000 times faster than computer diodes; microwave oscillators and mixers; communications—tuners, converters, detectors and amplifiers; level sensing—sampling (scopes), Schmidt triggers and counters; computer circuits—sense amplifiers, flip-flops, AND-NOR gates.

GENERAL PURPOSE (FIG. C)

Series inductance, 0.5 nH. Typical peak voltage, 65 mV except TD-9, 60 mV typical; "A" types, 65 mV ±7.

GE Type	Peak Point I_P mA	 ±%	Maximum Valley Point mA	 Cap. pF	 Series Resis. Ohms	*	Typ. f_{no} GHz
1N3712	1.0	10	0.18	10	4.0	8	2.3
1N3713*	1.0	2.5	0.14	5	4.0	8.5 ± 1	3.2
1N3714	2.2	10	0.48	25	3.0	18	2.2
1N3715*	2.2	2.5	0.31	10	3.0	19 ± 3	3.0
1N3716	4.7	10	1.04	50	2.0	40	1.8
1N3717*	4.7	2.5	0.60	25	2.0	41 ± 5	3.4
1N3718	10.0	10	2.20	90	1.5	80	1.6
1N3719*	10.0	2.5	1.40	50	1.5	85 ± 10	2.8
1N3720	22.0	10	4.80	150	1.0	180	1.6
1N3721*	22.0	2.5	3.10	100	1.0	190 ± 30	2.6
TD-9	0.5	10	10.0	5	6.0	4.0	1.3

*Typ. negative conductance -G mhos x 10^{-3}. *JAN type available.

ULTRA-HIGH SPEED SWITCHING DO-18 (FIG. E)

Subminiature epoxy package with series inductance of 1.5 nH. Also available in pill package (Fig. D) with series inductance of 0.15 nH; specify TD-271, TD-271A, TD-276A.

GE Type	Peak Point mA (±10%)	Maximum Valley Point mA	 Cap. pF	Voltage, mV Peak Point Typ.	 Fwd $I_F = I_P$	Typical Series Resis. Ohms	 Rise Time psec
TD-251	2.2	0.31	3.0	70	500–650	5.0	430
TD-251A	2.2	0.31	1.0	110*	500–650	7.0	160
TD-252	4.7	0.60	4.0	80	500–650	3.5	320
TD-252A	4.7	0.60	1.0	120*	500–650	4.0	74
TD-253	10.0	1.40	9.0	75	500–650	1.7	350
TD-253A	10.0	1.40	5.0	80	520–650	2.0	190
TD-253B	10.0	1.40	2.0	120*	550–650	2.5	68
TD-254	22.0	3.80	18.0	90	600 typ.	1.8	185
TD-254A	22.0	3.80	4.0	120*	550–650	2.0	64
TD-255	50.0	8.50	25.0	110	625 typ.	1.4	100
TD-255A	50.0	8.50	5.0	130	640 typ.	1.5	35
TD-256	100	17.50	35.0	150	650 typ.	1.1	57
TD-256A	100	17.50	6.0	180	660 typ.	1.2	22

*Maximum.

MICROWAVE (FIG. G)

High performance microwave pill package supplied with leads when specified. Dimensions are within JEDEC DO-20 outline with leads (Fig. G). Series inductance of 0.15 nH. Package capacitance, 0.25 pF. Typical peak point current, 1.85 mA. Negative resistance, 60–80 ohms.

GE Type	Maximum C_J pF	 R_S Ohms	Min. Resis. Cutoff	GE Type	Maximum C_J pF	 R_S Ohms	Min. Resis. Cutoff
TD-401	3.5	3	5 GHz	**TD-405**	.60	6	25 GHz
TD-402	1.8	4	10 GHz	**TD-406**	.48	6	30 GHz
TD-403	1.0	5	15 GHz	**TD-407**	.37	6	35 GHz
TD-404	.75	5	20 GHz	**TD-408**	.30	6	40 GHz

SEMICONDUCTOR MANUALS

GE SCR Manual ETR 3875A—5th edition. Over 500 pages consisting of much new information, including new chapters on triacs, regulating circuits and motor controls. Specifications on hundreds of new high-performance thyristors are detailed. Price Each.............................. **$3.00**

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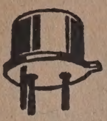
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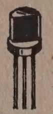
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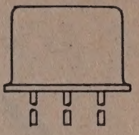
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GERMANIUM TRANSISTORS

PNP ALLOY

BV_{CER} at I_C = 600 μA and R_{BE} = 10K except as otherwise noted.

GE Type	Fig.	h_{FE} V_{CE}=1 V I_C=20 mA	Typ. f_{hfb} MHz	Min. BV_{CER} V	Maximum I_{CBO} at V_{CB} μA	Maximum I_{CBO} at V_{CB} V	Maximum P_T mW
2N319	A	25–42	2.0	20	16	25	225
2N320	A	34–65	2.5	20	16	25	225
2N321	A	53–121	3.0	20	16	25	225
2N322	A	34–65	3.0	16	16	16	200
2N323	A	53–121	3.5	16	16	16	200
2N324	A	72–198	4.0	16	16	16	200
2N396A*	A	30–150†	8.0	20‡	6	20	200
2N404	A	....	8.0	24§	5	12	150
2N404A	A	....	8.0	35§	5	20	150
2N413	A	20–100†	6.0	18‡	5	12	150
2N414	A	30–120†	7.0	15‡	5	12	150
2N461*	A	32–199#	4.0	35•	15	45	200
2N508	A	100–200	4.5	16	7	16	200
2N508A	A	100–200	4.5	25	7	25	200
2N524	A	25–42	2.5	30	10	30	225
2N525	A	34–65	3.0	30	10	30	225
2N526*	A	53–90	3.5	30	10	30	225
2N527	A	72–121	4.0	30	10	30	225
2N1175	A	70–140	4.0	25	12	30	200
2N1175A	A	70–140	4.0	25	12	30	200
2N1303*	A	20 min.†	7.0	25§	6	25	150
2N1305*	A	40–200†	8.0	20§	6	25	150
2N1307*	A	60–300†	12.0	15§	6	25	150
2N1413	A	25–42	3.2	25	12	30	200
2N1414	A	34–65	3.6	25	12	30	200
2N1415	A	53–90	4.0	25	12	30	200
2N1924	A	34–65	3.0	40	10	45	225
2N1925	A	53–90	3.5	40	10	45	225
2N1926	A	72–121	4.0	40	10	45	225

*Not recommended for new designs. †V_{CE} = 1 V, I_C = 10 mA. ‡BV_{CEO}. §V_{RT}. #V_{CB} = 5 V, I_E = 1 mA, f = 1 kHz. •R = 1K. ▴V_{RT} = 60 V. *JAN type available.

SILICON DUAL DIODES (TO-98)

P_T = 200 mW at 25° C.

TV HORIZONTAL PHASE DISCRIMINATORS

GE Type	Features	V_F at 1 mA Volt	V_R V	Typ. C_{OB} pF at 10 V
1N4951 1N4952	Inherent match, static and dynamic. Common cathode.	0.85 max. 0.85 max.	20 50	1.1 1.1

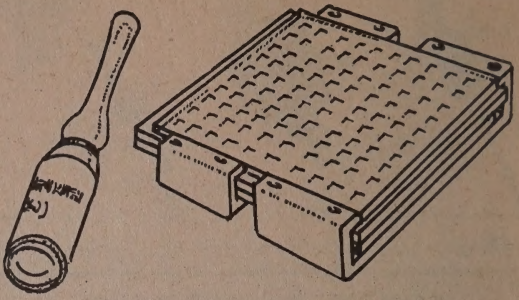
REFERENCE AMPLIFIERS (TO-12)

Designed for applications in power supplies where they can serve the dual function of a voltage reference element and an error voltage amplifier. Integrated devices comprised of zener diode and NPN transistor in a single pellet. Cancellation of temperature coefficients between the zener diode and transistor result in a transfer characteristic having a very low net TC. Circuit Characteristics: V_{CB} = 3 V, I_C = 0.5 mA (RA3 Series, 0.1 mA), I_Z = 0 (RA3 Series, 5 mA), R_B = 1 K. For further information see PIB 35.35.

GE Type	Temperature Coeff. %/° C	Temperature Range ° C	Min.-Max. V_{REF} V	Min. G_{MC} μhmo	h_{FE} V_{CE}=3 V I_C=.5mA	I_{CBO} V_{CB}=30 V Typ.	I_{CBO} V_{CB}=30 V Max.
RA1 RA1A RA1B RA1C	.02 .005 .002 .001	0 to 70	6.3–7.7	3000	10–120	.004	1.0
RA2 RA2A RA2B	.02 .005 .002	−55 to +150	6.65–7.35	6000	40–120	.004	0.1
RA3 RA3A RA3B	.02 .005 .002	−55 to +150	6.65–7.35	2000	30–90*	.006†	0.1†

*V_{CE} = 3 V, I_C = .1 mA. †V_{CB} = 45 V.

SEMICONDUCTOR CHIPS



Transistor and diode chips suitable for custom circuitry. Feature gold backing of 3000Å, minimum thickness, for transistor collector contact and diode cathode contact. Aluminum metalization for transistor emitter and base contacts and diode anode contact. Maximum conditions for mounting chips—425° C for a maximum of five minutes in an inert atmosphere. Chips are shipped in glass vials sealed with a nitrogen back-fill. This standard offering features optimum chip protection. Also available in "Tray Packs" in quantities of 100, 400 or 1,000.

SILICON PLANAR OXIDE-PASSIVATED DIODE CHIPS

GE Type	Description
1N914A Chip 1N914B Chip	High-speed switching in computer and general purpose applications
1N3064 Chip	Very high speed switching in computer and general purpose applications
1N3600 Chip	High conductance and high-speed switching in logic, core, hammer driver circuits and general purpose applications
1N3605 Chip	High-speed switching in computer and general purpose applications; high conductance, fast recovery time, low leakage and low capacitance
1N4150 Chip	Similar to 1N3600 Chip
1N4152 Chip	Similar to 1N3605 Chip
1N4454 Chip	Similar to 1N3064 Chip
1N4532 Chip	Similar to 1N3064 Chip
1N4533 Chip	Similar to 1N3605 Chip
1N4606 Chip	Similar to 1N3600 Chip except high voltage

SILICON PLANAR PASSIVATED TRANSISTOR CHIPS

GE Type	Description
2N708 Chip	NPN for high-speed switching, also suitable as small signal device
2N918 Chip	NPN for high frequency applications
2N929 Chip	NPN for low-level amplifiers
2N930 Chip	NPN for low-level amplifiers
2N2222 Chip	NPN for high-speed switching, amplifier and core driver applications
2N2484 Chip	NPN for low-level, high gain preamplifier use in hybrid and microminiature circuits
2N2714 Chip	NPN for general purpose applications
2N2905 Chip 2N2906 Chip 2N2907 Chip	PNP for amplifiers, drivers and general purpose switching (electrically similar to JEDEC series only)
2N3414 Chip 2N3415 Chip 2N3416 Chip 2N3417 Chip	NPN for general purpose circuits, specially suited for high-level linear amplifiers or medium-speed switching circuits in control applications
2N3855A Chip 2N3856A Chip	NPN for RE, IF and converters in AM and FM radio receivers and TV video amplifiers
2N3859 Chip 2N3860 Chip	NPN for AM radio, IF and converter applications
2N3975 Chip 2N3976 Chip	NPN for medium-speed switching and large signal RF amplifiers
2N5172 Chip	NPN for general purpose applications
2N5232 Chip	NPN for low noise preamp and small signal amplifier
2N5306 Chip	NPN darlington chip for preamp input stages
M22P2 M22P3 M22P4	NPN chip for general low signal levels
M73P1	NPN darlington chip for preamp input stages and medium-speed switching control circuits

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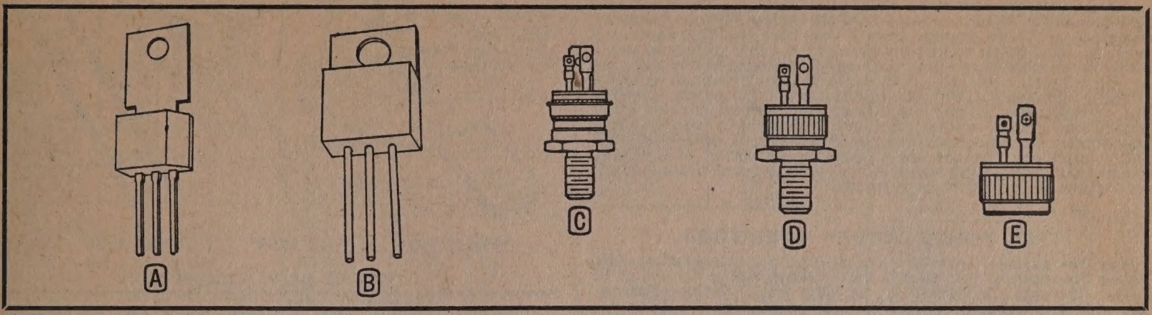
Triacs and Triac Triggers

PLASTIC AND METAL CAN TRIACS



Triac is a silicon AC switch which may be gate triggered from an OFF-state to an ON-state for either polarity of applied voltage. Triac is also an AC phase controller, that performs in a single device the function of two SCR's connected back to back to control heat, light and motor speed. Plastic triacs feature low cost and reliability. **Power Glas**™ passivated junctions, rugged and industry proven packaging and are available in various types of (TO-5, TO-66, etc.) formed leads. Metal can triacs feature **Power Glas** passivated junctions, glass to metal seal, high performance and reliability, transient voltage immunity and comprehensive specifications. Triacs are used in control circuitry in various electrical and mechanical equipments.

TRIACS IN PLASTIC POWER TAB CASE (FIG. A)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC136B	3	200	25	2	30
SC136D	3	400	25	2	30

TRIACS IN PLASTIC POWER PAC CASE (FIG. B)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC141B	6	200	50	2.5	80
SC141D	6	400	50	2.5	80
SC141E	6	500	50	2.5	80
SC141M	6	600	50	2.5	80
SC146B	10	200	50	2.5	100
SC146D	10	400	50	2.5	100
SC146E	10	500	50	2.5	100
SC146M	10	600	50	2.5	100

TRIACS IN ISOLATED POWER PAC CASE (FIG. B)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC142B	8	200	50	2.5	80
SC142D	8	400	50	2.5	80
SC142E	8	500	50	2.5	80
SC142M	8	600	50	2 5	80

TRIACS IN ISOLATED STUD CASE (FIG. C)

GE Type#	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC240B2, 3	6	200	50	2.5	80
SC240D2, 3	6	400	50	2.5	80
SC240E2, 3	6	500	50	2.5	80
SC240M2, 3	6	600	50	2.5	80
SC245B2, 3	10	200	50	2.5	100
SC245D2, 3	10	400	50	2.5	100
SC245E2, 3	10	500	50	2.5	100
SC245M2, 3	10	600	50	2.5	100
SC250B2, 3	15	200	50	2.5	100
SC250D2, 3	15	400	50	2.5	100
SC250E2, 3	15	500	50	2.5	100
SC250M2, 3	15	600	50	2.5	100
SC260B2, 3	25	200	50	2.5	250
SC260D2, 3	25	400	50	2.5	250
SC260E2, 3	25	500	50	2.5	250
SC260M2, 3	25	600	50	2.5	250

#Types shown are standard types; for zero voltage switch types, add suffix -2 to GE No.; for selected four quadrant types, add suffix -3; for 400 Hz types, add suffix -4. †At 12 volts, 25° C. ‡Surge current at 60 Hz, one cycle non-negative. §MT2+G+, MT2−G−, MT2+G−.

TRIACS IN STUD CASE (FIG. D)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC240B	6	200	50	2.5	80
SC240D	6	400	50	2.5	80
SC240E	6	500	50	2.5	80
SC240M	6	600	50	2.5	80
SC245B	10	200	50	2.5	100
SC245D	10	400	50	2.5	100
SC245E	10	500	50	2.5	100
SC245M	10	600	50	2.5	100
SC250B	15	200	50	2.5	100
SC250D	15	400	50	2.5	100
SC250E	15	500	50	2.5	100
SC250M	15	600	50	2.5	100
SC260B	25	200	50	2.5	250
SC260D	25	400	50	2.5	250
SC260E	25	500	50	2.5	250
SC260M	25	600	50	2.5	250

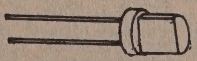
TRIACS IN PRESS FIT CASE (FIG. E)

GE Type*	rms On-State Current† Amps	V_{DRM} Off-State† Volts	I_{gt} DC Trigger Current† mA§	V_{gt} DC Trigger Volts	I_{TSM}‡ Amps
SC241B	6	200	50	2.5	80
SC241D	6	400	50	2.5	80
SC241E	6	500	50	2.5	80
SC241M	6	600	50	2.5	80
SC246B	10	200	50	2.5	100
SC246D	10	400	50	2.5	100
SC246E	10	500	50	2.5	100
SC246M	10	600	50	2.5	100
SC251B	15	200	50	2.5	100
SC251D	15	400	50	2.5	100
SC251E	15	500	50	2.5	100
SC251M	15	600	50	2.5	100
SC261B	25	200	50	2.5	250
SC261D	25	400	50	2.5	250
SC261E	25	500	50	2.5	250
SC261M	25	600	50	2.5	250

*Types shown are standard types; for zero voltage switch types, add suffix -12 to GE Number; for selected four quadrant types, add suffix -13 to GE Number; for 400 Hz types, add suffix -14 to GE Number. †At 12 volts, 25° C. ‡Surge current at 60 Hz, one cycle non-negative. §MT2+G+, MT2−G−, MT2+G−.

TRIAC TRIGGERS

ST2


ST4

ST2 (diac) is a silicon bi-directional diode which may be used for triggering triacs or SCR's. It has three layer structure with negative resistance switching characteristicsin both directions. ST4 is an asymmetrical AC trigger integrated circuit for use in triac phase control applications. This device reduces the snap-on effects that are present in conventional trigger circuits by eliminating control circuit hysteresis. This performance is possible with a single RC time constant where as a symmetrical circuit of comparable performance would require at least three more passive components.

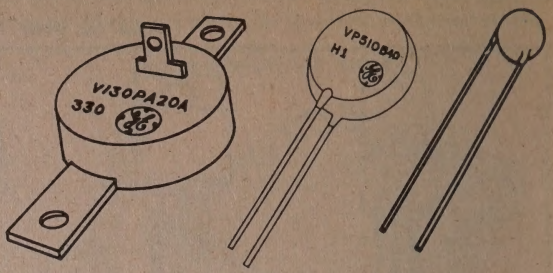
GE Type	V_{S2} Switching Volts		V_{S1} Switching Volts		Max. Switching Current µA	Min. Pulse Output Volts
	Min.	Max.	Min.	Max.		
ST2	28*	36*	28*	36*	200	3.0
ST4	7	9	14	18	80	3.5

*For ST2, $V_{S2} = V_{S1} \pm 10\%$.

SEE LAST PAGES OF LISTING FOR OEM SEMICONDUCTOR PRICING

GE-MOV Metal Oxide Varistors

GE-MOV Varistors are voltage dependent, symmetrical resistors which perform in a manner similar to back-to-back zener diodes in circuit protective functions and offer advantages in performance and economics. When exposed to high energy voltage transient, varistor impedance changes from a very high standby value to a very low conducting value thus clamping the line voltage to a safe level. Dangerous energy of incoming high voltage pulse is absorbed by the GE-MOV varistor, thus protecting your voltage sensitive circuit components Eliminates follow-on currents, extends contact life and protects circuit insulation. Applications include component and system voltage transient protection in inductive and transformer switching circuits, regenerative loads, switching magnetic amplifiers; contact arc suppression-reduction of lightning effects. If nonsinusoidal wave input is present, peak voltage input values should be used to select model.



POWER-MOV **GE-MOV** **MINI-MOV**

TYPE POWER-MOV™ VARISTORS

Power Dissipation: Up to 15 watts at 70° C tab temperature. **Idle Power Dissipation:** Less than 1 watt. **Clamp Ratio:** 1.7–1.9 at 10 amps. **Current:** Can handle up to 2000 amps. **Voltage Rating:** 130–575 volts rms and 170–780 VDC. **Energy Rating:** 10–80 joules. **Response Time:** Less than 50 nsec. Meets NEMA creep and strike-terminal distances. Comes with quick disconnect terminals.

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts*	Max. Energy Joules	Max. Avg. Watts†
V130PA10A	130	184	170	10	8
V130PA20A	130	184	170	20	15
V130PA20B	130	184	170	20	15
V130PA20C	130	184	170	20	15
V150PA10A	150	212	215	10	8
V150PA20A	150	212	215	20	15
V150PA20B	150	212	215	20	15
V150PA20C	150	212	215	20	15
V250PA10A	250	354	330	10	4
V250PA20A	250	354	330	20	7
V250PA40A	250	354	330	40	13
V250PA40B	250	354	330	40	13
V250PA40C	250	354	330	40	13
V275PA10A	275	389	360	10	4
V275PA20A	275	389	360	20	7
V275PA40A	275	389	360	40	13
V275PA40B	275	389	360	40	13
V275PA40C	275	389	360	40	13
V420PA20A	420	595	550	20	5
V420PA40A	420	595	550	40	10
V420PA40B	420	595	550	40	10
V420PA40C	420	595	550	40	10
V460PA20A	460	650	625	20	5
V460PA40A	460	650	625	40	10
V460PA40B	460	650	625	40	10
V460PA40C	460	650	625	40	10
V480PA20A	480	679	625	20	3
V480PA40A	480	679	625	40	5
V480PA80A	480	679	625	80	10
V480PA80B	480	679	625	80	10
V480PA80C	480	679	625	80	10
V510PA20A	510	721	655	20	3
V510PA40A	510	721	655	40	5
V510PA80A	510	721	655	80	10
V510PA80B	510	721	655	80	10
V510PA80C	510	721	655	80	10
V550PA20A	550	778	755	20	3
V550PA40A	550	778	755	40	5
V550PA80A	550	778	755	80	9
V550PA80B	550	778	755	80	9
V550PA80C	550	778	755	80	9
V575PA20A	575	813	780	20	3
V575PA40A	575	813	780	40	5
V575PA80A	575	813	780	80	9
V575PA80B	575	813	780	80	9
V575PA80C	575	813	780	80	9

*For 1 watt idle power dissipation. †Power dissipation.

TYPE GE-MOV™ VARISTORS

Power Dissipation: Up to 1.3 watts at 85° C ambient temperature. **Idle Power Dissipation:** Less than 100 mW. **Clamp Ratio:** 1.8–2.0 at 10 amps. **Current:** Can handle up to 2000 amps. **Voltage Rating:** 95–1000 volts rms and 130–675 VDC. **Energy Rating:** 7–160 joules. **Response Time:** Less than 50 nsec.

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts	Max. Energy Joules	Max. Avg. Watts*
V95LA7A	95	134	130	7	0.45
V95LA7B	95	134	130	7	0.45
V130LA10A	130	184	175	10	0.5
V130LA20A	130	184	175	20	0.85
V130LA20B	130	184	175	20	0.85
V150LA10A	150	212	200	10	0.5
V150LA20A	150	212	200	20	0.85
V150LA20B	150	212	200	20	0.85
V250LA15A	250	354	330	15	0.6
V250LA20A	250	354	330	20	0.6
V250LA40A	250	354	330	40	0.9
V250LA40B	250	354	330	40	0.9

TYPE GE-MOV™ (CONT'D)

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts	Max. Energy Joules	Max. Avg. Watts*
V275LA15A	275	389	369	15	0.6
V275LA20A	275	389	369	20	0.6
V275LA40A	275	389	369	40	0.9
V275LA40B	275	389	369	40	0.9
V420LB20A	420	595	560	20	0.55
V420LB40A	420	595	560	40	0.9
V420LB40B	420	595	560	40	0.9
V460LB20A	460	650	615	20	0.55
V460LB40A	460	650	615	40	0.9
V460LB40B	460	650	615	40	0.9
V480LB20A	480	679	640	20	0.55
V480LB40A	480	679	640	40	0.7
V480LB80A	480	679	640	80	1.0
V480LB80B	480	679	640	80	1.0
V510LB20A	510	721	675	20	0.55
V510LB40A	510	721	675	40	0.7
V510LB80A	510	721	675	80	1.0
V510LB80B	510	721	675	80	1.0
V550LB20A	550	778	....	20	0.6
V550LB40A	550	778	....	40	0.7
V550LB80A	550	778	....	80	1.0
V550LB80B	550	778	....	80	1.0
V575LB20A	575	813	....	20	0.65
V575LB40A	575	813	....	40	0.8
V575LB80A	575	813	....	80	1.1
V575LB80B	575	813	....	80	1.1
V1000LB80A	1000	1414	....	80	0.9
V1000LB160A	1000	1414	....	160	1.3
V1000LB160B	1000	1414	....	160	1.3

*Power dissipation.

MINI-MOV™ VARISTORS

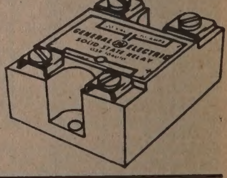
Power Dissipation: Up to .28 watts at 85° C ambient temperature. **Idle Power Dissipation:** Less than 50 mW. **Current:** Can handle up to 150 amps. **Voltage Rating:** 130–300 volts rms and 170–330 VDC. **Energy Rating:** 1–4 joules. **Response Time:** Less than 50 nsec. "Aspirin" size for PC board mounting.

GE Type	Applied Max. rms Volts	Max. Recurrent Peak Volts	Applied DC Volts	Max. Energy Joules	Max. Avg. Watts*
V130LA1	130	184	175	1	0.24
V130LA2	130	184	175	2	0.24
V150LA1	150	212	200	1	0.24
V150LA2	150	212	200	2	0.24
V250LA2	250	354	330	2	0.28
V250LA4	250	354	330	4	0.28
V275LA2	275	389	375	2	0.28
V275LA4	275	389	375	4	0.28
V300LA2	300	424	405	2	0.28
V300LA4	300	424	405	4	0.28

*Power dissipation.

SOLID STATE RELAYS

Type GSR10AU5 & GSR10AU10 are normally open solid state relays consisting of an input circuit coupled by an optical isolator into a zero voltage trigger circuit which controls a 5 or 10 amp, 200 volt triac output. **Isolation Voltage:** 1500 volts rms. **Repetitive Peak Offstate Voltage:** ±200 volts. Zero volt switching with DC input and AC output.



GE Type	Input Characteristics		Output Characteristics	
	Pickup Voltage	Drop Out Voltage	Line Voltage	Max. Current
GSR10AU5	4.1 V max.	1.0 V min.	140 V rms	5 amps
GSR10AU10	4.1 V max.	1.0 V min.	140 V rms	10 amps

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OEM Semiconductor Pricing

In accordance with Amendment 2 dated July 28, 1965 of MIL-S-19500D, all military types will be branded with the prefix JAN rather than USN, USAF, or USA just as rapidly as present inventories are depleted.

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
1N91	$0.99	$0.66	......
1N92	2.15	1.43	......
1N93	2.97	1.98	......
JAN1N93A	3.80	2.53	......
1N248, A, B, C*†	1.65	1.10	......
1N249, A, B*†	1.73	1.15	......
JAN 1N249B†	3.90	2.60	......
1N249C*	2.03	1.35	......
1N250, A, B*	2.48	1.65	......
1N250C*†	2.78	1.85	......
1N914§	.30	.20	$0.14
1N914A§	.40	.26	.15
1N914A‡	.64	.32	.116
1N914B§	.80	.54	.17
1N914B‡	.86	.43	.156
1N916§	.52	.34	.16
1N916A§	.58	.38	.17
1N916B§	1.07	.71	.27

GE Type	Net Each, Lots	
	1-99	100-999
1N1183*†	$ 1.95	$1.30
1N1183A*†	2.14	1.43
1N1184*†	2.40	1.60
JAN1N1184†	3.90	2.60
JANTX 1N1184†	5.40	3.60
1N1184A*†	2.47	1.65
1N1185*†	2.92	1.95
1N1185A*†	3.10	2.07
1N1186*†	3.45	2.30
JAN1N1186†	5.47	3.65
JANTX1N1186†	6.97	4.65
1N1186A*†	3.55	2.37
1N1187*†	4.72	3.15
1N1187A*†	4.95	3.30
1N1188*†	5.85	3.90
JAN1N1188†	8.89	5.93
JANTX1N1188†	10.39	6.93
1N1188A*†	6.19	4.13
1N1189*†	6.45	4.30
1N1189A*†	7.42	4.95
1N1190*†	6.90	4.60
1N1190A*†	8.70	5.80
JAN1N1190	10.95	7.30
JANTX1N1190	13.20	8.80
1N1191, A*†	1.65	1.10
1N1192, A*†	1.73	1.15
1N1193, A*†	2.10	1.40
1N1194, A*†	2.48	1.65
1N1195, A*†	4.02	2.68
1N1196, A*†	4.95	3.30
1N1197, A*†	6.15	4.10
1N1198, A*†	6.68	4.45
1N1199, A*†	1.24	.83
1N1200, A*†	1.41	.94
1N1201, A*†	1.81	1.21
1N1202, A*†	2.62	1.75
JAN1N1202A†	3.96	2.64
JANTX 1N1202A†	5.61	3.74
1N1203, A*†	3.60	2.40
1N1204, A*†	4.57	3.05
JAN1N1204A†	5.55	3.70
JANTX 1N1204A†	7.21	4.81
1N1205, A*†	5.32	3.55
1N1206, A*†	6.37	4.25
JAN1N1206A†	8.25	5.50
JANTX 1N1206A†	9.91	6.61
1N1341, A*†	1.12	.75
1N1342, A*†	1.27	.85
1N1343, A*†	1.63	1.09
1N1344, A*†	2.22	1.48
1N1345, A*†	3.16	2.11
1N1346, A*†	3.96	2.64
1N1347, A*†	4.65	3.10
1N1348, A*†	5.48	3.65
1N1581*†	1.12	.75
1N1582*†	1.27	.85
1N1583*†	2.22	1.48
1N1584*†	3.16	2.11
1N1585*†	4.11	2.74
1N1586*†	4.96	3.31
1N1587*†	5.92	3.95
1N1612*†	1.08	.72

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
1N1613*†	$1.24	$0.83	......
1N1614*†	1.90	1.27	......
JAN 1N1614†	3.03	2.02	......
1N1615*†	3.75	2.50	......
JAN 1N1615†	5.25	3.50	......
1N1616*†	5.55	3.70	......
JAN 1N1616†	7.16	4.77	......
1N2154*†	2.38	1.59	......
1N2155*†	3.00	2.00	......
1N2156*†	4.38	2.92	......
1N2157*†	5.25	3.50	......
1N2158*†	5.92	3.95	......
1N2159*†	6.15	4.10	......
1N2160*†	6.30	4.20	......
1N3064‡	.80	.40	$0.144
1N3070	2.25	1.50	1.13
1N3071	4.50	3.00	2.25
1N3208*†	2.10	1.40	......
1N3209*†	2.25	1.50	......
1N3210*†	2.40	1.60	......
1N3211*†	2.64	1.76	......
1N3212*†	3.05	2.10	......
1N3213*†	3.75	2.50	......
1N3214*†	4.50	3.00	......

GE Type	Net Each, Lots	
	1-9	10-99
1N3260*	On Request	
1N3261*	On Request	
1N3262*	On Request	
1N3263*	On Request	
1N3264*	On Request	
1N3265*	$19.00	$11.50
1N3266*	20.50	12.50
1N3267*	21.50	13.00
1N3268*	23.00	14.00
1N3269*	25.00	15.00
1N3270*	27.00	16.26
1N3271*	28.50	17.25
1N3272*	31.00	18.75
1N3273*	33.00	20.00
1N3289*	14.50	8.75
JAN1N3289	42.00	25.25
1N3290*	15.50	9.50
1N3291*	16.50	10.00
JAN1N3291	46.00	27.75
1N3292*	17.50	10.50
1N3293*	18.50	11.25
JAN1N3293	56.00	33.75
1N3294*	21.00	12.75
JAN1N3294	66.00	39.75
1N3295*	23.00	14.00
JAN1N3295	78.00	47.00
1N3296*	25.00	15.00

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
1N3600‡	$0.77	$0.385	$0.14
1N3605‡	.88	.44	.16
1N3670, A*†	7.87	5.25	......
1N3671, A*†	8.77	5.85	......
1N3672, A*†	9.45	6.30	......
1N3673, A†	9.90	6.60	......
JAN1N3673	11.40	7.60	......
JANTX 1N3673A	13.65	9.10	......
1N3712	3.96	2.64	2.40
1N3713	6.00	3.96	3.60
JAN1N3713	6.36	4.26	3.84
1N3714	3.48	2.33	2.10
1N3715	5.51	3.65	3.30
JAN1N3715	5.94	3.96	3.56
1N3716	2.48	1.65	1.49
1N3717	4.68	3.11	2.82
JAN1N3717	5.16	3.42	3.08
1N3718	3.01	2.01	1.82
1N3719	4.68	3.11	2.82
JAN1N3719	5.16	3.42	3.08
1N3720	4.00	2.66	2.40
1N3721	4.68	3.11	2.82
JAN1N3721	5.16	3.42	3.08

GE Type	Net Each, Lots of	
	1-9	10-99
1N3735*	$18.00	$11.00
1N3736*	20.00	12.00
1N3737*	22.50	13.50
1N3738*	25.00	15.00
1N3739*	27.00	16.25
1N3740*	29.00	17.50
1N3741*	33.50	20.25
1N3742*	38.00	23.00
1N3743*	42.00	25.25

GE Type	Net Each, Lots	
	1-99	100-999
1N3765*†	$ 8.55	$ 5.70
1N3766*†	9.75	6.50
JAN1N3766	12.00	8.00
JANTX1N3766	14.25	9.50
1N3767*†	10.72	7.15
1N3768*†	11.62	7.75
JAN1N3768	13.95	9.30
JANTX1N3768	16.20	10.80
1N3879*†	2.55	1.70
1N3880*†	2.93	1.95
1N3881*†	3.23	2.15
1N3882*†	3.83	2.55
1N3883*†	4.50	3.00
1N3889*†	3.00	2.00
1N3890*†	3.60	2.40
JAN1N3890†	4.80	3.20
JANTX1N3890†	6.45	4.30
1N3891*†	4.35	2.90
JAN1N3891†	5.93	3.95
JANTX1N3891†	7.58	5.05
1N3892*†	5.25	3.50
1N3893*†	6.30	4.20
JAN1N3893†	8.25	5.50
JANTX1N3893†	9.90	6.60
1N3899*†	4.20	2.80
1N3900*†	5.02	3.35
1N3901*†	6.00	4.00
1N3902*†	7.20	4.80
1N3903*†	8.63	5.75
1N3909*†	4.88	3.25
JAN1N3909†	6.30	4.20
JANTX1N3909†	7.80	5.20
1N3910†	5.85	3.90
JAN1N3910†	7.35	4.90
JANTX1N3910†	8.85	5.90
1N3911†	6.98	4.65
JAN1N3911†	9.45	6.30
JANTX1N3911†	10.95	7.30
1N3912*†	8.40	5.60
JAN1N3912†	11.55	7.70
JANTX1N3912†	13.05	8.70
1N3913*†	10.13	6.75
JAN1N3913†	13.65	9.10
JANTX1N3913†	15.15	10.10
1N3987*†	8.25	5.50
1N3988*†	8.76	5.84
1N3989*†	9.44	6.29
1N3990*†	10.80	7.20

GE Type	Net Each, Lots	
	1-9	10-99
1N4044*	$18.00	$10.75
1N4045*	19.00	11.50
1N4046*	20.00	12.00
1N4047*	21.00	12.75
1N4048*	22.50	13.50
1N4049*	23.50	14.25
1N4050*	26.50	16.00
1N4051*	28.50	17.25
1N4052*	30.50	18.25
1N4053*	33.00	19.75
1N4054*	35.00	21.00
1N4055*	38.00	22.75
1N4056*	40.00	24.00

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
1N4090	$3.35	$2.20	......
1N4148, JAN	.30	.20	$0.14
JANTX 1N4148	1.67	1.12	.95
1N4149	.52	.34	.16
1N4150	2.10	1.40	.39
1N4150‡	.77	.385	.14
JAN1N4150	2.10	1.40	.39

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
JANTX 1N4150	$3.60	$2.40	$1.60
1N4151	.75	.50	.19
1N4152	.60	.40	.18
1N4152‡	.88	.44	.16
1N4153	.75	.50	.19
JAN1N4153	.75	.50	.19
JANTX 1N4153	1.75	1.26	.98
1N4154	.33	.22	.15
1N4156	.75	.50	.33
1N4157	1.04	.69	.39
1N4245	.38	.29	.21
JAN1N4245	.75	.48	.34
1N4246	.45	.35	.24
JAN1N4246	.90	.58	.41
1N4247	.59	.46	.33
JAN1N4247	1.38	.88	.63
1N4248	.97	.65	.46
1N4249	1.12	.75	.53
1N4305	.60	.40	.17
1N4444	1.51	.99	.89
1N4446	.36	.24	.15
1N4447	.58	.38	.17
1N4448	.75	.50	.17
1N4449	1.07	.71	.27
1N4450	1.45	.97	.40
1N4451	1.28	.85	.75
1N4453	.54	.36	.26
1N4454	.24	.16	.12
1N4454‡	.80	.40	.144
JAN1N4454	.24	.16	.12
JANTX 1N4454	2.10	1.40	1.25
JAN1N4459	11.40	7.60	......
1N4510*†	11.80	7.45	......
1N4511*†	14.40	9.60	......
1N4529†	13.50	9.00	......
1N4530†	17.25	11.50	......
1N4531	.45	.30	.14
JAN1N4531	.45	.30	.14
JANTX 1N4531	2.00	1.34	1.20
1N4532	.65	.43	.14
JAN1N4532	.65	.43	.14
JANTX 1N4532	2.10	1.30	1.20
1N4533	.69	.46	.24
1N4533‡	.88	.44	.16
1N4534	1.00	.67	.31
1N4536	.42	.28	.18
1N4606	1.20	.80	.30
1N4606‡	.96	.48	.18
1N4607	1.31	.87	.35
1N4608	1.44	.94	.89
1N4727	.40	.26	.14
1N4828	.45	.30	.20
1N4829	.69	.46	.26
1N4830	.93	.62	.36
1N4863	1.02	.68	.58
1N4864	1.37	.91	.81
1N4951	.36	.24	.20
1N4952	.41	.27	.23
1N5059	.36	.28	.20
1N5060	.43	.33	.23
1N5061	.57	.40	.32
1N5062	.80	.53	.42
1N5179	1.32	.88	.49
1N5331*†	10.50	7.00	......
1N5332*†	12.60	8.40	......
1N5624	.75	.50	.38
1N5625	1.00	.67	.51
1N5626	1.40	.95	.73
1N5627	3.75	2.50	1.90
2N319	.88	.65	......
2N320	.74	.55	......
2N321	.81	.60	......
2N322	.81	.60	......
2N323	.70	.50	......
2N324	.83	.55	......
JAN2N461	2.40	1.60	......
2N489	7.10	4.75	......
2N489A	7.65	5.10	......
JAN2N489A	7.80	5.20	......
2N489B	9.15	6.10	......
2N490	7.80	5.20	......
2N490A	8.35	5.55	......
JAN2N490A	8.55	5.70	......
2N490B	9.85	6.55	......
2N490C	11.85	7.90	......
2N491	8.40	5.60	......
2N491A	8.90	5.95	......
JAN2N491A	9.15	6.10	......
2N491B	10.40	6.95	......
2N492	9.90	6.60	......
2N492A	10.40	6.95	......
JAN2N492A	10.55	7.05	......
2N492B	11.90	7.95	......
2N492C	13.90	9.25	......

*Available in reverse polarity at same price; to order, add suffix **R**, i.e., 1N248**R**, 1N248**R**A, 1N248**R**B, etc. †Prices include mounting hardware. For insulating hardware, add **5c** per unit, any quantity. ‡Semiconductor chip. §DHD package; DO-7 available.

OEM Semiconductor Pricing

GE Type	Net Each, Lots	
	1-99	100-999
2N493	$10.75	$ 7.20
2N493A	11.20	7.50
JAN2N493A	11.40	7.60
2N493B	12.75	8.50
2N494	10.90	7.30
2N494A	11.40	7.60
JAN2N494A	11.60	7.70
2N494B	12.90	8.60
2N494C	14.95	9.95
2N508	.81	.60
2N508A	1.08	.70
2N524	1.35	.93
2N525	1.10	.73
2N526	1.25	.83
JAN2N526	1.51	1.00
2N527	1.37	.92
2N681†	2.35	1.57
2N682†	2.85	1.90
JAN2N682†	3.93	2.62
JANTX2N682	6.18	4.12
2N683†	3.60	2.40
JAN2N683†	4.68	3.12
JANTX2N683	6.93	4.62
2N684†	4.23	2.82
2N685†	4.86	3.24
JAN2N685†	5.94	3.96
JANTX2N685	8.19	5.46
2N686†	5.41	3.61
JAN2N686†	6.50	4.33
JANTX2N686	8.75	5.83
2N687†	5.82	3.88
JAN2N687†	6.92	4.61
JANTX2N687	9.17	6.11
2N688†	6.80	4.53
JAN2N688†	7.88	5.25
JANTX2N688	10.13	6.75
2N689†	8.11	5.41
JAN2N689†	9.20	6.13
JANTX2N689	11.45	7.63
2N690†	8.74	5.83

GE Type	Net Each. Lots of		
	1-99	100-999	1000-9999
2N708*	$1.54	$0.77	$0.28
2N877	3.00	2.00	......
2N878	3.30	2.20	......
2N879	5.40	3.60	......
2N880	6.30	4.20	......
2N881	7.50	5.00	......
2N885	8.62	5.75	......
2N886	10.50	7.00	......
2N887	13.12	8.75	......
2N888	14.77	9.85	......
2N918*	1.92	.35	.26
2N929*	1.76	.88	.32
2N930*	1.86	.34	.25
2N1175	1.16	.77	......
2N1370	.72	.48	......
2N1371	1.14	.76	......
2N1372	.82	.54	......
2N1373	1.20	.80	......
2N1374	1.02	.68	......
2N1375	1.39	.92	......
2N1376	1.29	.86	......
2N1377	1.50	1.00	......
2N1378	1.29	.86	......
2N1379	1.44	.96	......
2N1380	.67	.44	......
2N1381	.79	.53	......
2N1413	1.20	.83	......
2N1414	.95	.64	......
2N1415	1.10	.73	......
2N1595	1.65	1.10	......
2N1596	2.40	1.60	......
2N1597	4.80	3.20	......
2N1598	7.50	5.00	......
2N1599	9.90	6.60	......
2N1671	2.95	1.97	......
2N1671A	3.20	2.13	......
2N1671B	3.55	2.36	......
2N1671C	8.25	5.50	......
2N1770†	1.95	1.30	1.17
2N1770A†	2.47	1.65	1.48
2N1771†	2.17	1.45	1.30
2N1771A†	2.70	1.80	1.62
2N1772†	3.00	2.00	1.80
2N1772A†	3.60	2.40	2.16
2N1773†	4.35	2.90	2.61
2N1773A†	5.25	3.50	3.15
2N1774†	5.40	3.60	3.24
2N1774A†	6.45	4.30	3.87
2N1775†	6.37	4.25	3.82
2N1775A†	7.57	5.05	4.54
2N1776†	7.12	4.75	4.27
2N1776A†	8.47	5.65	5.08

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
2N1777†	$7.87	$5.25	$4.72
2N1777A†	9.45	6.30	5.67
2N1778†	9.75	6.50	5.85

GE Type	Net Each, Lots	
	1-9	10-99
2N1792	$18.00	$10.75
JAN2N1792	37.00	22.25
2N1793	19.50	11.75
JAN2N1793	40.00	24.00
2N1794	21.50	13.00
2N1795	23.50	14.00
JAN2N1795	48.00	29.00
2N1796	26.00	15.75
2N1797	27.50	16.50
JAN2N1797	56.50	34.00
2N1798	32.00	19.25
JAN2N1798	71.50	43.00

GE Type	Net Each, Lots	
	1-99	100-999
2N1842†	$2.10	$1.40
2N1842A†	2.25	1.50
2N1843†	2.32	1.55
2N1843A†	2.62	1.75
2N1844†	3.07	2.05
2N1844A†	3.37	2.25
2N1845†	3.75	2.50
2N1845A†	3.90	2.60
2N1846†	4.35	2.90
2N1846A†	4.50	3.00
2N1847†	4.95	3.30
2N1847A†	5.17	3.45
2N1848†	5.40	3.60
2N1848A†	5.55	3.70
2N1849†	6.22	4.15
2N1849A†	6.60	4.40
2N1850†	7.35	4.90
2N1850A†	7.65	5.10

GE Type	Net Each, Lots	
	1-9	10-99
2N1909	$16.50	$10.00
2N1910	18.00	10.75
JAN2N1910	37.00	22.25
2N1911	19.50	11.75
JAN2N1911	40.00	24.00
2N1912	21.50	13.00
2N1913	23.50	14.00
JAN2N1913	48.00	29.00
2N1914	26.00	15.75
2N1915	27.50	16.50
JAN2N1915	56.50	34.00
2N1916	32.00	19.25
JAN2N1916	71.50	43.00

GE Type	Net Each, Lots	
	1-99	100-999
2N1924	$1.68	$1.12
2N1925	1.89	1.25
2N1926	2.27	1.51

GE Type	Net Each, Lots	
	1-9	10-99
2N2023	$22.00	$13.25
2N2024	28.50	17.25
2N2025	32.50	19.50
2N2026	35.00	21.00
2N2027	35.00	21.00
2N2028	36.00	20.50
2N2029	37.00	22.25

GE Type	Net Each, Lots	
	1-9	10-99
2N2030	$40.00	$24.00
JAN2N2031	30.50	18.25

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
2N2160	$1.49	$0.99	$0.89
2N2222*	1.66	.30	.23

GE Type	Net Each, Lots	
	1-99	100-999
2N2322	$ 1.65	$1.10
2N2322A	2.25	1.50
2N2323	1.80	1.20
JAN2N2323	3.30	2.20
JANTX2N2323	4.80	3.20
2N2323A	2.55	1.70
JAN2N2323A	3.75	2.50
JANTX2N2323A	5.25	3.50
2N2324	2.85	1.90
JAN2N2324	4.35	2.90
JANTX2N2324	5.85	3.90
2N2324A	4.20	2.80
JAN2N2324A	5.70	3.80
JANTX2N2324A	7.20	4.80
2N2325	4.20	2.80
2N2325A	6.00	4.00
2N2326	5.40	3.60
JAN2N2326	7.65	5.10
JANTX2N2326	9.15	6.10
2N2326A	8.00	5.20
JAN2N2326A	11.55	7.70
JANTX2N2326A	13.05	8.70
2N2327	6.90	4.60
2N2327A	11.10	7.40
2N2328	8.40	5.60
JAN2N2328	10.65	7.10
JANTX2N2328	12.15	8.10
2N2328A	12.00	8.00
2N2329	11.10	7.40
JAN2N2329	13.35	8.90
JANTX2N2329	14.75	9.90
2N2344	3.45	2.30
2N2345	3.90	2.60
2N2346	5.10	3.40
2N2347	9.15	6.10
2N2348	12.00	8.00
2N2417	7.10	4.75
2N2417A	7.65	5.10
2N2417B	9.15	6.10
2N2418	7.80	5.20
2N2418A	8.35	5.55
2N2418B	9.85	6.55
2N2419	8.40	5.60
2N2419A	8.90	5.95
2N2419B	10.40	6.95
2N2420	9.80	6.55
2N2420A	10.40	6.95
2N2420B	11.90	7.95
2N2421	10.75	7.20
2N2421A	11.20	7.50
2N2421B	12.75	8.50
2N2422	10.90	7.30
2N2422A	11.40	7.60
2N2422B	12.90	8.60

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
2N2484*	$ 1.86	$0.34	$0.25
2N2619	12.30	8.20	......
2N2646	1.00	.67	......
2N2647	1.89	1.26	......
2N2711	.41	.27	.23
2N2712	.41	.27	.23
2N2713	.45	.30	.25
2N2714	.47	.32	.26
2N2714*	1.10	.55	.20
2N2905*	2.64	.48	.36
2N2907*	2.64	.48	.36
2N2923	.29	.20	.16
2N2924	.32	.21	.18
2N2925	.38	.26	.21
2N2926‡	.27	.18	.15
2N3054	.94	.69	.57
2N3055	1.42	1.05	.90
2N3390	.95	.63	.53
2N3391	.43	.29	.24
2N3391A	.47	.32	.26
2N3392	.29	.20	.16

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
2N3393	$0.29	$0.20	$0.17
2N3394	.27	.18	.15
2N3395‡	.50	.33	.28
2N3396‡	.50	.33	.28
2N3397‡	.47	.32	.26
2N3398‡	.54	.36	.30
2N3402	.36	.24	.20
2N3403	.38	.26	.21
2N3404	.50	.33	.28
2N3405	.61	.40	.34
2N3414	.32	.21	.18
2N3414*	1.98	.99	.36
2N3415	.34	.23	.19
2N3415*	2.20	1.10	.40
2N3416	.45	.30	.25
2N3416*	2.42	1.21	.44
2N3417	.56	.38	.31
2N3417*	3.30	1.65	.60
2N3441	1.49	1.08	.90
2N3442	2.89	2.10	1.75
2N3649†	6.15	4.10	......
2N3650†	8.02	5.35	......
2N3651†	12.15	8.10	......
2N3652†	15.30	10.20	......
2N3653†	20.85	13.90	......
2N3654†	6.82	4.55	......
2N3655†	8.85	5.90	......
2N3656†	13.27	8.85	......
2N3657†	16.70	11.15	......
2N3658†	22.80	15.20	......
2N3662	.52	.35	.29
2N3663	.56	.38	.31
2N3721	.41	.27	.23
2N3771	3.14	2.28	1.90
2N3772	3.14	2.28	1.90
2N3773	4.79	3.48	2.90
2N3843	.43	.29	.24
2N3843A	.45	.30	.25
2N3844	.45	.30	.25
2N3844A	.47	.32	.26
2N3845	.47	.32	.26
2N3845A	.50	.33	.28
2N3854	.34	.23	.19
2N3854A	.36	.24	.20
2N3855	.36	.24	.20
2N3855A	.38	.26	.21
2N3855A*	1.54	.77	.28
2N3856	.38	.26	.21
2N3856A	.41	.27	.23
2N3856A*	1.76	.88	.32
2N3858	.27	.18	.15
2N3858A	.34	.23	.19
2N3859	.29	.20	.17
2N3859*	1.42	.71	.26
2N3859A	.36	.24	.20
2N3860	.32	.21	.18
2N3860*	1.54	.77	.28
2N3877	.45	.30	.25
2N3877A	.52	.35	.29
2N3900	.41	.27	.22
2N3900A	.45	.30	.25
2N3901	1.06	.71	.59
2N3975*	1.32	.66	.24
2N3976*	1.54	.77	.28
2N4256	.68	.45	.38
2N4347	2.06	1.50	1.25
2N4348	3.14	2.28	1.90
2N4424	.43	.29	.24
2N4425	.47	.32	.26
2N4983	1.17	.78	.60
2N4984	1.50	1.00	.80
2N4985	2.61	1.75	1.35
2N4986	1.43	.95	.65
2N4987	.84	.56	.41
2N4988	1.23	.82	.65
2N4989	1.73	1.15	.88
2N4990	.89	.59	.45
2N4991	.75	.50	.40
2N4992	1.35	.90	.71
2N4993	1.65	1.10	.99
2N4994	.30	.27	.14
2N4995	.32	.28	.15
2N5172	.20	.14	.11
2N5172*	1.16	.58	.21
2N5174	.65	.44	.36
2N5175	.70	.47	.39
2N5176	.74	.50	.41
2N5204†	9.30	6.20	......
2N5205†	14.10	9.40	......
2N5206†	18.45	12.30	......
2N5207†	24.60	16.40	......
2N5232	.34	.23	.19
2N5232*	1.54	.77	.28
2N5232A	.38	.26	.21
2N5249	.50	.33	.28
2N5249A	.54	.36	.30
2N5305	.45	.30	.25
2N5306	.43	.29	.24
2N5306*	3.08	1.54	.56
2N5306A	.50	.33	.28
2N5307	.47	.32	.26
2N5308	.52	.35	.29

*Semiconductor chip. †Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. ‡Spread type.

OEM Semiconductor Pricing

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N5308A	$0.59	$0.39	$0.33
2N5309	.56	.38	.31
2N5310	.63	.42	.35
2N5311	.74	.50	.41
2N5354	.36	.24	.20
2N5355	.41	.27	.23
2N5356	.47	.32	.26
2N5365	.45	.30	.25
2N5366	.50	.33	.28
2N5367	.56	.38	.31
2N5368	.26	.18	.14
2N5369	.28	.18	.14
2N5370	.28	.19	.15
2N5371	.26	.17	.13
2N5372	.28	.19	.14
2N5373	.29	.19	.15
2N5374	.31	.21	.17
2N5375	.28	.18	.14
2N5380	.60	.40	.30
2N5381	.66	.44	.33
2N5382	.67	.45	.34
2N5383	.73	.49	.37
2N5418	.32	.21	.18
2N5419	.36	.24	.20
2N5420	.43	.29	.24
2N5447	.30	.20	.15
2N5448	.34	.29	.15
2N5449	.29	.19	.15
2N5450	.26	.17	.14
2N5451	.27	.24	.14
2N5777	.60	.50	.35
2N5778	.70	.55	.40
2N5779	1.00	.70	.50
2N5780	1.20	.80	.55
2N5810	.36	.24	.20
2N5811	.41	.27	.23
2N5812	.38	.26	.21
2N5813	.45	.30	.25
2N5814, 15	.38	.26	.21
2N5816, 17	.41	.27	.23
2N5818	.43	.29	.24
2N5819	.45	.30	.25
2N5820	.49	.32	.27
2N5821	.68	.45	.38
2N5822	.62	.41	.34
2N5823	.70	.46	.39
2N5824	.25	.17	.14
2N5825	.27	.18	.15
2N5826	.29	.20	.17
2N5827	.32	.21	.18
2N5827A	.38	.26	.21
2N5828	.34	.23	.19
2N5828A	.41	.27	.23
2N5998	.47	.32	.26
2N5999	.50	.33	.28
2N6000	.54	.36	.30
2N6001	.56	.38	.31
2N6002–5	.59	.39	.33
2N6006	.72	.48	.40
2N6007	.77	.51	.43
2N6008	.52	.35	.29
2N6009	.54	.36	.30
2N6010	.68	.45	.38
2N6011	.70	.46	.39
2N6012	.72	.48	.40
2N6013	.74	.50	.41
2N6014	.72	.48	.40
2N6015	.74	.50	.41
2N6016	.95	.63	.53
2N6017	.99	.66	.55

GE Type	Net Each, Lots of 1-99	100-999	1000-4999
2N6027	$0.79	$0.53	$0.44
2N6028	1.00	.65	.55

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N6076	$0.25	$0.17	$0.14
2N6114	4.86	3.26	......
2N6115	3.03	1.36	......
2N6218	.68	.45	.38
2N6219	.65	.44	.36
2N6220	.63	.42	.35
2N6221	.56	.38	.31
2N6222	.29	.20	.17

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
2N6223	$0.32	$0.21	$0.18
2N6224	.34	.23	.19
2N6225	.36	.24	.20
3N81	3.40	2.25	......
3N82	4.95	3.30	......
3N83, 84	1.98	1.32	......
3N85	3.30	2.20	......
3N86	6.00	4.00	......
4N35	4.00	2.60	2.10
4N36	3.70	2.40	1.95
4N37	3.05	2.00	1.60

GE Type	Net Each, Lots 1-49	50-999
6RS5AJ1B1	$0.30	$0.22
6RS5AJ2B1	.34	.25
6RS5AJ2B1AA	.37	.29
6RS5AJ2B2	.40	.30
6RS5AJ3B2	.44	.33
6RS5AJ4B2	.48	.36
6RS5AJ5B2	.57	.43
6RS5AJ6B2	.61	.45
6RS5AJ7B2	.65	.48
6RS5AJ8B2	.74	.55
6RS5AJ9B2	.77	.57
6RS5AJ10B2	.81	.62
6RS5AP1B1	.72	.53
6RS5AP2B1	.79	.59
6RS5AP2B2	.84	.63
6RS5AP3B2	.89	.68
6RS5AP4B2	.95	.72
6RS5AP5B2	1.01	.76
6RS5AP6B2	1.07	.81
6RS5AP7B2	1.12	.85
6RS5AP8B2	1.19	.89
6RS5AP9B2	2.24	.95
6RS5AP10B2	1.30	.98
6RS5SJ1B1	.30	.22
6RS5SJ2B2	.40	.30
6RS5SJ3B3	.47	.35
6RS5SJ4B4	.55	.42
6RS5SJ5B5	.60	.48
6RS5SJ6B6	.74	.55
6RS5SJ7B7	.81	.62
6RS5SJ8B8	.89	.67
6RS5SJ9B9	.99	.75
6RS5SJ10B10	1.08	.80
6RS5SP1B1	.75	.57
6RS5SP2B2	.83	.62
6RS5SP3B3	.91	.69
6RS5SP4B4	.98	.74
6RS5SP5B5	1.05	.81
6RS5SP6B6	1.17	.87
6RS5SP7B7	1.22	.94
6RS5SP8B8	1.32	.99
6RS5SP9B9	1.41	1.07
6RS5SP10B10	1.47	1.11
6RS5SP11B11	1.56	1.19
6RS5SP12B12	1.64	1.23
6RS5SP13B13	1.73	1.31
6RS5SP14B14	1.79	1.35
6RS5SP15B15	1.89	1.43
6RS5SP16B16	1.96	1.47
6RS5SP17B17	2.05	1.55
6RS5SP18B18	2.12	1.60
6RS5SP19B19	2.20	1.67
6RS5SP20B20	2.28	1.72
6RS5VJ1B	.25	.20
6RS5VJ2B	.30	.22
6RS5VJ3B	.34	.25
6RS5VJ4B	.40	.30
6RS5VJ5B	.43	.32
6RS5VJ6B	.48	.35
6RS5VJ7B	.52	.40
6RS5VJ8B	.55	.42
6RS5VJ9B	.61	.45
6RS5VJ10B	.65	.49
6RS5VJ11B	.68	.52
6RS5VJ12B	.74	.55
6RS5VP1B	.72	.53
6RS5VP2B	.75	.57
6RS5VP3B	.80	.59
6RS5VP4B	.84	.63
6RS5VP5B	.87	.65
6RS5VP6B	.92	.69
6RS5VP7B	.96	.72
6RS5VP8B	.99	.75
6RS5VP9B	1.05	.77
6RS5VP10B	1.08	.81
6RS5VP11B	1.11	.84
6RS5VP12B	1.17	.87
6RS5VP13B	1.20	.89
6RS5VP14B	1.24	.94
6RS5VP15B	1.29	.96
6RS5VP16B	1.32	.99
6RS5VP17B	$1.36	$1.01
6RS5VP18B	1.41	1.06
6RS5VP19B	1.44	1.08
6RS5VP20B	1.49	1.11
6RS20AP1B1	.83	.62
6RS20AP2B1	.91	.69
6RS20AP2B2	.99	.75
6RS20AP3B2	1.09	.83
6RS20AP4B2	1.18	.88
6RS20AP5B2	1.25	.96
6RS20AP6B2	1.35	1.01
6RS20AP7B2	1.43	1.08
6RS20AP8B2	1.52	1.13
6RS20AP9B2	1.60	1.21
6RS20AP10B2	1.67	1.25
6RS20SJ1B1	.33	.24
6RS20SJ2B2	.45	.34
6RS20SJ3B3	.57	.43
6RS20SJ4B4	.70	.53
6RS20SJ5B5	.74	.63
6RS20SJ6B6	.95	.70
6RS20SJ7B7	1.08	.80
6RS20SJ8B8	1.21	.90
6RS20SJ9B9	1.32	.99
6RS20SJ10B10	1.45	1.09
6RS20SP1B1	.84	.63
6RS20SP2B2	.92	.73
6RS20SP3B3	1.10	.84
6RS20SP4B4	1.24	.95
6RS20SP5B5	1.40	1.06
6RS20SP6B6	1.53	1.16
6RS20SP7B7	1.67	1.25
6RS20SP8B8	1.82	1.36
6RS20SP9B9	1.96	1.67
6RS20SP10B10	2.09	1.58
6RS20SP11B11	2.24	1.69
6RS20SP12B12	2.39	1.80
6RS20SP13B13	2.53	1.91
6RS20SP14B14	2.67	2.02
6RS20SP15B15	2.81	2.12
6RS20SP16B16	2.95	2.22
6RS20SP17B17	3.10	2.33
6RS20SP18B18	3.25	2.44
6RS20SP19B19	3.38	2.55
6RS20SP20B20	3.52	2.66
6RS20VH1B	1.72	1.30
6RS20VH2B	1.79	1.34
6RS20VH3B	1.86	1.40
6RS20VH4B	1.93	1.44
6RS20VH5B	1.98	1.49
6RS20VH6B	2.06	1.55
6RS20VH7B	2.12	1.58
6RS20VH8B	2.19	1.64
6RS20VH9B	2.24	1.68
6RS20VH10B	2.31	1.73
6RS20VH11B	2.39	1.79
6RS20VH12B	2.43	1.83
6RS20VH13B	2.51	1.88
6RS20VH14B	2.57	1.94
6RS20VH15B	2.64	1.97
6RS20VH16B	2.71	2.04
6RS20VH17B	2.76	2.07
6RS20VH18B	2.83	2.12
6RS20VH19B	2.90	2.18
6RS20VH20B	2.95	2.21
6RS20VJ1B	.26	.20
6RS20VJ2B	.33	.24
6RS20VJ3B	.40	.30
6RS20VJ4B	.45	.34
6RS20VJ5B	.52	.40
6RS20VJ6B	.57	.43
6RS20VJ7B	.64	.47
6RS20VJ8B	.71	.53
6RS20VJ9B	.77	.57
6RS20VJ10B	.83	.63
6RS20VJ11B	.89	.67
6RS20VJ12B	.95	.71
6RS20VP1B	.77	.57
6RS20VP2B	.85	.63
6RS20VP3B	.92	.69
6RS20VP4B	.98	.74
6RS20VP5B	1.06	.80
6RS20VP6B	1.12	.85
6RS20VP7B	1.19	.88
6RS20VP8B	1.25	.95
6RS20VP9B	1.33	.99
6RS20VP10B	1.41	1.06
6RS20VP11B	1.46	1.10
6RS20VP12B	1.54	1.16
6RS20VP13B	1.61	1.21
6RS20VP14B	1.68	1.25
6RS20VP15B	1.76	1.32
6RS20VP16B	1.83	1.36
6RS20VP17B	1.90	1.43
6RS20VP18B	1.97	1.47
6RS20VP19B	2.02	1.52
6RS20VP20B	2.09	1.57
6RS21AR1D1	1.33	1.00
6RS21AR2D1	1.46	1.10
6RS21AR2D2	1.60	1.21
6RS21AR3D2	1.73	1.31
6RS21AR4D2	1.86	1.42
6RS21AR5D2	2.01	1.52
6RS21AR6D2	2.13	1.61
6RS21AR7D2	$ 2.27	$ 1.71
6RS21AR8D2	2.40	1.82
6RS21AR9D2	2.54	1.93
6RS21AR10D2	2.67	2.02
6RS21SA1D1	2.27	1.61
6RS21SA2D2	2.42	1.76
6RS21SA3D3	2.66	1.97
6RS21SA4D4	2.84	2.06
6RS21SA5D5	3.09	2.24
6RS21SA6D6	3.33	2.39
6RS21SA7D7	3.51	2.54
6RS21SA8D8	3.75	2.73
6RS21SA9D9	3.99	2.91
6RS21SA10D10	4.20	3.09
6RS21SA11D11	4.42	3.27
6RS21SA12D12	4.66	3.49
6RS21SA13D13	4.84	3.70
6RS21SA14D14	5.08	3.91
6RS21SA15D15	5.29	4.11
6RS21SA16D16	5.51	4.36
6RS21SA17D17	5.75	4.54
6RS21SA18D18	5.93	4.79
6RS21SA19D19	6.17	5.03
6RS21SA20D20	6.36	5.20
6RS21SR1D1	1.78	1.32
6RS21SR2D2	2.01	1.49
6RS21SR3D3	2.19	1.61
6RS21SR4D4	2.39	1.78
6RS21SR5D5	2.57	1.94
6RS21SR6D6	2.77	2.08
6RS21SR7D7	2.99	2.24
6RS21SR8D8	3.21	2.40
6RS21SR9D9	3.43	2.56
6RS21SR10D10	3.71	2.77
6RS21SR11D11	3.98	2.98
6RS21SR12D12	4.27	3.19
6RS21SR13D13	4.58	3.42
6RS21SR14D14	4.85	3.63
6RS21SR15D15	5.16	3.86
6RS21SR16D16	5.45	4.08
6RS21SR17D17	5.75	4.30
6RS21SR18D18	6.06	4.54
6RS21SR19D19	6.38	4.75
6RS21SR20D20	6.66	4.97
6RS21VA1D	1.84	1.38
6RS21VA2D	1.97	1.47
6RS21VA3D	2.08	1.56
6RS21VA4D	2.19	1.65
6RS21VA5D	2.32	1.74
6RS21VA6D	2.42	1.82
6RS21VA7D	2.53	1.90
6RS21VA8D	2.63	1.97
6RS21VA9D	2.75	2.06
6RS21VA10D	2.87	2.16
6RS21VA11D	2.97	2.22
6RS21VA12D	3.09	2.31
6RS21VA13D	3.19	2.40
6RS21VA14D	3.33	2.50
6RS21VA15D	3.42	2.56
6RS21VA16D	3.53	2.65
6RS21VA17D	3.64	2.74
6RS21VA18D	3.76	2.82
6RS21VA19D	3.87	2.90
6RS21VA20D	3.98	2.99
6RS25SA1D1	3.16	2.38
6RS25SA2D2	4.57	3.42
6RS25SA3D3	5.96	4.48
6RS25SA4D4	7.37	5.53
6RS25SA5D5	8.78	6.58
6RS25SA6D6	10.18	7.63
6RS25SA7D7	11.58	8.69
6RS25SA8D8	12.98	9.75
6RS25SA9D9	14.39	10.79
6RS25SA10D10	15.80	11.85
6RS25SA11D11	17.19	12.89
6RS25SA12D12	18.60	13.95
6RS25SA13D13	20.00	15.00
6RS25SA14D14	21.41	16.06
6RS25SA15D15	22.81	17.11
6RS25SA16D16	24.21	18.16
6RS25SA17D17	25.62	19.30
6RS25SA18D18	27.02	20.27
6RS25SA19D19	28.42	21.32
6RS25SA20D20	29.83	22.37
6RS25VA1D	2.45	1.84
6RS25VA2D	3.16	2.38
6RS25VA3D	3.86	2.89
6RS25VA4D	4.57	3.42
6RS25VA5D	5.27	3.95
6RS25VA6D	5.96	4.48
6RS25VA7D	6.67	4.99
6RS25VA8D	7.37	5.52
6RS25VA9D	8.07	6.05
6RS25VA10D	8.78	6.58
6RS25VA11D	9.47	7.11
6RS25VA12D	10.18	7.63
6RS25VA13D	10.88	8.15
6RS25VA14D	11.58	8.69
6RS25VA15D	12.29	9.21
6RS25VA16D	12.98	9.75
6RS25VA17D	13.68	10.26
6RS25VA18D	14.39	10.79
6RS25VA19D	15.09	11.32
6RS25VA20D	15.80	11.85

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GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
A14A	$0.34	$0.26	$0.19
A14B	.36	.28	.20
A14C	.40	.31	.22
A14D	.43	.33	.23
A14E	.52	.40	.28
A14F	.30	.23	.16
A14M	.57	.40	.32
A14N	.80	.53	.42
A14P	.87	.58	.46
A14PD	1.10	.88	.65
A15A	.62	.42	.32
A15B	.75	.50	.38
A15D	1.00	.67	.51
A15F	.57	.39	.30
A15M	1.40	.95	.73
A15N	3.75	2.50	1.90

GE Type	Net Ea., Lots	
	1-99	100-999
A28, A29A*	$4.50	$3.00
A28, A29B*	5.70	3.80
A28, A29C*	7.13	4.75
A28, A29D*	8.25	5.50
A28, A29F*	3.82	2.55
A40, A41A*	2.25	1.50
A40, A41B*	2.40	1.60
A40, A41C*	2.64	1.76
A40, A41D*	3.05	2.10
A40, A41E*	3.75	2.50
A40, A41F*	2.10	1.40
A40, A41M*	4.50	3.00
A44, A45A	1.42	.95
A44, A45B	1.57	1.05
A44, A45C	1.73	1.15
A44, A45D	1.88	1.25
A44, A45E	2.63	1.75
A44, A45F	1.32	.88
A44, A45M	3.30	2.20

GE Type	Net Each, Lots	
	1-9	10-99
A70–A75A	$13.00	$ 8.00
A70–A75B	14.50	8.75
A70–A75C	15.50	9.50
A70–A75D	16.50	10.00
A70–A75E	17.50	10.50
A70–A75M	18.50	11.25
A70–A75N	21.00	12.75
A70–A75P	23.00	14.00
A70–A75PA	24.00	14.50
A70–A75PB	25.00	15.00
A70–A75S	19.50	11.75
A70–A75T	22.00	13.25
A90, A91A	18.00	11.00
A90, A91B	20.00	12.00
A90, A91C	22.50	13.50
A90, A91D	25.00	15.00
A90, A91E	27.00	16.25
A90, A91M	29.00	17.50
A90, A91N	33.50	20.25
A90, A91P	38.00	23.00
A90, A91PA	40.00	24.00
A90, A91PB	42.00	25.25
A90, A91S	31.50	19.00
A90, A91T	36.00	21.75
A96, A97A	23.50	14.20
A96, A97B	26.00	15.75
A96, A97C	29.00	17.50
A96, A97D	32.00	19.25
A96, A97E	35.00	21.00
A96, A97M	38.00	23.00
A96, A97N	44.00	26.50
A96, A97P	50.00	30.00
A96, A97S	41.00	24.75
A96, A97T	47.00	28.25

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
A114A	$0.70	$0.45	$0.32
A114B	.75	.48	.35
A114C	.85	.54	.39
A114D	.90	.66	.41
A114E	1.15	.75	.53

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
C12G*	$11.10	$ 7.40	......
C12H*	16.95	11.30	......
A114F	.65	.42	$0.30
A114M	1.25	.80	.57
A115A	1.28	.73	.54
A115B	1.56	.86	.67
A115D	2.10	1.35	.91
A115E	2.70	1.78	1.26
A115F	1.24	.71	.50
A115M	3.10	1.90	1.30
A139E†	12.15	8.10	......
A139M†	13.20	8.80	......
A139N†	15.30	10.20	......
A139P†	17.40	11.60	......

GE Type	Net Each, Lots	
	1-9	10-99
A291PC	$ 48.00	$28.75
A291PD	52.00	31.25
A291PE	56.00	33.50
A291PM	60.00	36.00
A291PN	68.00	40.75
A291PS	64.00	38.50
A295, A296A	40.00	24.00
A295, A296B	45.50	27.50
A295, A296C	46.50	28.00
A295, A296D	50.00	30.00
A295, A296E	53.00	32.00
A295, A296M	56.00	33.75
A295, A296N	62.00	37.25
A295, A296P	78.00	47.00
A295, A296PA	81.00	48.75
A295, A296PB	88.00	53.00
A295, A296PC	94.00	56.50
A295, A296PD	100.00	60.00
A295, A296PE	108.00	65.00
A295, A296PM	112.00	67.25
A295, A296PN	128.00	77.00
A295, A296PS	120.00	72.00
A295, A296S	59.00	35.50
A295, A296T	70.00	42.00

GE Type	Net Each, Lots of		
	1-9	10-99	100-999
A327A	$1.17	$0.78	$0.70
A327A2	1.17	.78	.70
A327B	1.34	.89	.80
A327B2	1.34	.89	.80
A327C	1.50	1.00	.90
A327C2	1.50	1.00	.90
A327F	1.00	.67	.60
A327F2	1.00	.67	.60
A340A	1.10	.73	.66
A340A2	1.10	.73	.66
A340B	1.26	.84	.76
A340B2	1.26	.84	.76
A340C	1.43	.95	.85
A340C2	1.43	.95	.85
A340F	.93	.62	.56
A340F2	.93	.62	.56

GE Type	Net Each, Lots of	
	1-9	10-99
A390A	$14.00	$ 8.50
A390B	16.00	9.75
A390C	18.00	11.00
A390D	20.00	12.00
A390E	22.00	13.25
A390M	24.00	14.50
A390N	28.00	17.00
A390P	32.00	19.25
A390PA	34.00	20.50
A390PB	36.00	21.75
A390S	26.00	15.75
A390T	30.00	18.00
A396A	20.00	12.00
A396B	22.00	13.25
A396C	25.00	15.00
A396D	27.00	16.25
A396E	30.00	18.00
A396M	32.00	19.25
A396N	37.00	22.25

GE Type	Net Each, Lots of	
	1-9	10-99
A396P	$ 43.00	$25.75
A396PA	On Request	
A396PB	On Request	
A396S	34.50	20.75
A396T	40.00	24.00
A500L	162.00	97.25
A500LA	172.00	103.25
A500LB	178.00	107.00
A500LC	186.00	111.75
A500LD	192.00	115.25
A500LE	200.00	120.00
A500LM	220.00	132.00
A500LN	260.00	156.00
A500LP	300.00	180.00
A500LS	240.00	144.00
A500LT	280.00	168.00
A500PE	128.00	77.00
A500PM	136.00	81.75
A500PN	150.00	90.00
A500PS	144.00	86.50
A500PT	156.00	93.75
A540A	65.50	39.50
A540B	73.50	44.25
A540C	78.00	47.00
A540D	82.00	49.25
A540E	88.00	53.00
A540L	208.00	125.00
A540LA	216.00	129.75
A540LB	226.00	135.75
A540M	95.00	57.00
A540N	106.00	63.75
A540P	118.00	71.00
A540PA	126.00	75.75
A540PB	134.00	80.50
A540PC	144.00	86.50
A540PD	152.00	91.25
A540PE	162.00	97.25
A540PM	170.00	102.00
A540PN	188.00	113.00
A540PS	180.00	108.00
A540PT	198.00	119.00
A540S	100.00	60.00
A540T	112.00	67.25
A570A	92.50	55.50
A570B	101.00	60.75
A570C	109.50	65.75
A570D	116.00	69.75
A570E	123.50	74.00
A570M	131.50	79.00
A570N	148.50	89.00
A570P	165.50	99.25
A570S	140.00	84.00
A570T	157.00	94.25
A596N	160.00	96.00
A596P	178.00	106.75
A596PA	190.00	114.00
A596PB	202.00	121.25
A596S	150.00	90.00
A596T	168.00	100.75

GE Type	Net Ea., Lots	
	1-99	100-999
BD1, 2	$ 5.50	$3.63
BD3	3.30	2.20
BD4	5.50	3.63
BD5–7	11.00	7.35

GE Type	Net Ea., Lots	
	1-9	10-99
BD402–BD407	$30.80	$17.71

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
C6A	$ 1.65	$ 1.10	......
C6B	1.80	1.20	......
C6C	3.30	2.20	......
C6D	4.95	3.30	......
C6F	1.50	1.00	......
C6G	1.73	1.15	......
C6U	1.43	.95	......
C12A*	8.40	5.60	......
C12B*	13.95	9.30	......
C12C*	20.35	13.50	......
C12D*	30.00	20.00	......
C12F*	6.60	4.40	......

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
C12U*	$6.15	$4.10	......
C13F	.50	.33	$0.28
C13Y	.45	.30	.25

GE Type	Net Each, Lots	
	1-99	100-999
C15A*	$ 1.95	$ 1.30
C15B*	2.02	1.35
C15C*	2.55	1.70
C15D*	2.85	1.90
C15E*	4.57	3.05
C15F*	1.72	1.15
C15G*	1.87	1.25
C15M*	9.75	6.50
C15U*	1.65	1.10
C35A*	3.90	2.60
C35B*	5.25	3.50
C35C*	6.30	4.20
C35D*	7.35	4.90
C35E*	8.77	5.85
C35F*	3.05	2.05
C35G*	4.57	3.05
C35H*	5.85	3.90
C35M*	9.45	6.30
C35N*	16.20	10.80
C35S*	13.35	8.90
C35U*	2.55	1.70
C36M*	12.22	8.15
C36N*	21.15	14.10

GE Type	Net Each, Lots	
	1-99	100-999
C36S*	$15.45	$10.30
C37A*	3.22	2.15
C37B*	4.42	2.95
C37C*	5.47	3.65
C37D*	6.45	4.30
C37E*	7.50	5.00
C37F*	2.55	1.70
C37M*	8.40	5.60
C37N*	16.20	10.80
C37S*	13.35	8.90
C37U*	2.17	1.45
C38A*	5.25	3.50
C38B*	7.20	4.80
C38C*	9.30	6.20
C38D*	11.77	7.85
C38E*	15.75	10.50
C38F*	4.12	2.75
C38G*	6.15	4.10
C38H*	8.25	5.50
C38U*	3.75	2.50

GE Type	Net Each, Lots of	
	1-9	10-99
C45, C46A	$16.50	$10.00
C45, C46B	17.50	10.50
C45, C46C	19.50	11.75
C45, C46D	22.50	13.50
C45, C46E	33.50	20.00
C45, C46F	On Request	
C45, C46G	17.00	10.25
C45, C46H	18.50	11.00
C45, C46M	45.50	27.50
C45, C46N	65.00	39.00
C45, C46S	54.00	32.50
C45, C46T	77.00	46.25
C45, C46U	On Request	
C50, C52A	19.50	11.75
C50, C52B	23.50	14.00
C50, C52C	27.50	16.50
C50, C52D	32.00	19.25
C50, C52E	44.00	26.50
C50, C52F	18.00	10.75
C50, C52G	21.50	13.00
C50, C52H	26.00	15.75
C50, C52M	55.50	33.50
C50, C52N	81.00	48.75
C50, C52S	67.00	40.25
C50, C52T	94.00	56.50
C50, C52U	16.50	10.00
C60, C62A	32.50	19.50
C60, C62B	35.00	21.00
C60, C62C	37.00	22.25
C60, C62D	40.00	24.00
C60, C62E	55.50	33.50
C60, C62F	28.50	17.25

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. †Available in reverse polarity at same price; to order, add suffix **R**, i.e., A129E**R**, A129M**R**.

OEM Semiconductor Pricing

GE Type	Net Each, Lots of	
	1-9	10-99
C60, C62G	$35.00	$21.00
C60, C62H	36.00	20.50
C60, C62U	22.00	13.25

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
C103A	$0.75	$0.50	$0.40
C103B	.84	.56	.45
C103Q	.66	.44	.35
C103Y	.69	.46	.37
C103YY	.72	.48	.38
C106A1‡	.81	.54	......
C106B1‡	.90	.60	......
C106C1‡	1.12	.75	......
C106D1‡	1.30	.87	......
C106F1‡	.78	.52	......
C106Q1‡	.72	.48	......
C106Y1‡	.75	.50	......
C107A1‡	.72	.48	......
C107B1‡	.81	.54	......
C107C1‡	.93	.62	......
C107D1‡	1.12	.75	......
C107F1‡	.69	.46	......
C107Q1‡	.63	.42	......
C107Y1‡	.66	.44	......
C122A1‡	1.35	.90	......
C122B1‡	1.50	1.00	......
C122C1‡	1.88	1.25	......
C122D1‡	2.00	1.35	......
C122E1‡	3.00	2.00	......
C122F1‡	1.20	.80	......

GE Type	Net Each, Lots of	
	1-99	100-999
C136D	$ 8.55	$ 5.70
C136E	9.30	6.20
C136M	9.70	6.50
C137E*	9.75	6.50
C137M*	10.80	7.20
C137N*	16.20	10.80
C137P*	21.15	14.10
C137PA*	23.40	15.60
C137PB*	26.55	17.70
C137S*	13.35	8.90
C137T*	18.45	12.30
C138E10E	24.00	16.00
C138M10M	26.85	17.90
C138S10M	28.95	19.30
C138N10M	32.10	21.40
C138E20E	18.60	12.40
C138M20M	20.25	13.50
C138S20M	22.35	14.90
C138N20M	24.45	16.30
C139E10E*	25.65	17.10
C139M10M*	28.80	19.20
C139N10M*	34.80	23.20
C139S10M*	31.50	21.00
C139E20E*	20.85	13.90
C139M20M*	23.25	15.50
C139N20M*	28.35	18.90
C139S20M*	25.65	17.10
C144E15E*	23.25	15.50
C144M15M*	26.10	17.40
C144N15M*	31.35	20.90
C144S15M*	28.20	18.80
C144E30E*	17.85	11.90
C144M30M*	19.50	13.00
C144N30M*	23.70	15.80
C144S30M*	21.60	14.40

GE Type	Net Each, Lots of	
	1-9	10-99
C145E	$30.50	$18.50
C145M	36.00	21.75
C145N	50.50	30.50
C145P	70.50	42.50
C145PA	83.00	50.00
C145PB	94.50	56.75
C145S	42.00	25.25
C145T	60.00	36.00
C147A	15.50	9.25
C147B	16.00	9.50
C147C	16.50	10.00
C147D	18.00	10.75
C147E	20.00	12.00
C147M	23.25	14.00
C147N	31.00	18.50
C147P	39.00	23.50
C147PA	43.00	25.75

GE Type	Net Each, Lots of	
	1-9	10-99
C147PB	$ 47.00	$ 28.25
C147S	27.00	16.25
C147T	35.00	21.00
C149A10	21.00	12.75
C149A20	18.50	11.00
C149B10	26.00	15.75
C149B20	22.50	13.50
C149C10	30.50	18.25
C149C20	27.00	16.25
C149D10	35.50	21.25
C149D20	31.00	18.75
C149E10	45.00	27.00
C149E20	38.00	22.75
C149M10	54.50	32.75
C149M20	45.00	27.00
C150, 152E	36.00	21.75
C150, 152M	40.00	24.00
C150, 152N	50.00	30.00
C150, 152P	60.00	36.00
C150, 152PA	64.00	38.50
C150, 152PB	69.00	41.50
C150, 152PC	75.00	45.00
C150, 152S	46.00	27.75
C150, 152T	55.00	33.00
C154, 156A	26.50	16.00
C154, 156B	32.50	19.50
C154, 156C	36.50	22.00
C154, 156D	44.50	26.75
C154, 156E	54.00	32.50
C155, 157A	24.50	14.75
C155, 157B	30.00	18.00
C155, 157C	35.50	21.25
C155, 157D	41.00	24.50
C155, 157E	49.50	29.75
C155, 157M	58.00	34.75
C158, 159E	51.50	30.90
C158, 159M	58.00	34.75
C158, 159N	71.50	43.00
C158, 159P	92.00	55.25
C158, 159PA	108.00	64.80
C158, 159PB	132.00	79.25
C158, 159S	64.00	38.50
C158, 159T	81.00	48.75
C180A	40.00	24.00
C180B	43.00	25.75
C180C	48.00	28.75
C180D	54.00	32.50
C180E	64.00	38.50
C180M	72.00	43.25
C180N	90.00	54.00
C180P	108.00	65.00
C180PA	118.00	71.00
C180PB	128.00	77.00
C180PC	138.00	83.00
C180S	81.00	48.75
C180T	100.00	60.00
C185A	54.00	32.50
C185B	58.00	34.75
C185C	64.00	38.50
C185D	72.00	43.25
C185E	84.00	50.50
C185M	98.00	58.75

GE Type	Net Each, Lots of	
	1-99	100-999
C220A*	$1.92	$1.28
C220B*	1.98	1.32
C220C*	2.64	1.76
C220D*	3.00	2.00
C220E*	4.50	3.00
C220F*	1.77	1.18
C220U*	1.71	1.14
C222A	1.62	1.08
C222B	1.68	1.12
C222C	2.35	1.56
C222D	2.70	1.80
C222E*	4.20	2.80
C222F	1.47	.98
C222U	1.41	.94
C228A	3.72	2.55
C228B	5.00	3.40
C228C	6.05	4.10
C228D	7.02	4.75
C229A	3.52	2.35
C229B	4.80	3.20
C229C	5.85	3.90
C229D	6.82	4.55
C230A*	3.20	2.20
C230B*	4.40	3.00
C230C*	5.45	3.70
C230D*	6.35	4.30
C230E*	7.10	4.80
C230F*	2.52	1.75
C230U*	2.15	1.50
C231A*	5.19	3.46
C231B*	5.99	3.99
C231C*	6.98	4.65
C231D*	7.86	5.24

GE Type	Net Each, Lots of	
	1-99	100-999
C231E*	$8.72	$5.81
C231F*	4.50	3.00
C231U*	4.00	2.75
C232A	3.00	2.00
C232B	4.20	2.80
C232C	5.25	3.50
C232D	6.15	4.10
C232E	6.90	4.60
C232F	2.32	1.55
C232U	1.95	1.30
C233A	4.65	3.10
C233B	5.45	3.63
C233C	6.43	4.29
C233D	7.33	4.88
C233E	8.18	5.45
C233F	4.10	2.75
C233U	3.75	2.50

GE Type	Net Each, Lots of	
	1-9	10-99
C280, 281PC	$146.00	$ 87.50
C280, 281PD	156.00	93.50
C280, 281PE	166.00	99.50
C280, 281PM	176.00	105.50
C280, 281PN	426.00	256.00
C280, 281PS	186.00	111.50
C282, 283N	110.00	66.00
C282, 283P	133.00	79.75
C282, 283PA	144.00	86.50
C282, 283PB	156.00	93.50
C282, 283PC	168.00	100.75
C282, 283PD	180.00	108.00
C282, 283PE	192.00	115.25
C282, 283PM	204.00	122.50
C282, 283PN	226.00	135.50
C282, 283PS	214.00	128.50
C282, 283S	98.00	58.75
C282, 283T	122.00	73.25
C286, 287N	116.00	69.50
C286, 287P	142.00	85.25
C286, 287PA	154.00	92.50
C286, 287PB	166.00	99.50
C286, 287PC	178.00	106.75
C286, 287PD	190.00	114.00
C286, 287PE	202.00	121.25
C286, 287PM	214.00	128.50
C286, 287PN	238.00	143.00
C286, 287PS	226.00	135.50
C286, 287S	104.00	62.50
C286, 287T	128.00	76.75
C290, 291A	50.00	30.00
C290, 291B	59.00	35.50
C290, 291C	70.00	42.00
C290, 291D	80.00	48.00
C290, 291E	96.00	57.50
C290, 291M	108.00	64.75
C290, 291N	128.00	76.75
C290, 291P	148.00	88.75
C290, 291PA	158.00	94.75
C290, 291PB	172.00	103.25
C290, 291S	118.00	70.75
C290, 291T	138.00	82.75
C350A	19.00	11.50
C350B	22.50	13.50
C350C	25.50	15.50
C350D	28.00	16.75
C350E	30.00	18.00
C350M	34.00	20.50
C350N	43.00	25.75
C350P	52.00	31.25
C350PA	56.00	33.50
C350PB	60.00	36.00
C350PC	68.00	40.75
C350S	39.00	23.50
C350T	47.00	28.25
C354A	23.00	15.25
C354B	28.00	17.75
C354C	33.00	19.75
C354D	38.00	22.75
C354E	50.00	27.50
C354M	54.50	32.75
C355A	21.00	12.75
C355B	26.00	15.50
C355C	30.00	18.00
C355D	35.00	21.00
C355E	42.00	25.25
C355M	49.00	29.50
C358E	44.00	26.50
C358M	49.50	29.75
C358N	61.00	36.75
C358P	81.00	48.75
C358PA	94.00	56.50
C358PB	120.00	72.00
C358S	54.50	32.75
C358T	70.00	42.00
C364A	36.50	22.00
C364B	42.00	25.25
C364C	48.00	28.75

GE Type	Net Each, Lots of	
	1-9	10-99
C364D	$ 53.50	$ 32.00
C364E	60.50	36.25
C364M	67.00	40.25
C365A	31.50	19.00
C365B	33.50	20.00
C365C	39.50	23.00
C365D	41.50	25.00
C365E	48.00	28.75
C365M	53.50	32.00
C380A	32.00	19.25
C380B	34.00	20.50
C380C	38.00	23.00
C380D	44.00	26.50
C380E	52.00	31.25
C380M	60.00	36.00
C380N	76.00	45.75
C380P	92.00	55.25
C380PA	102.00	61.25
C380PB	110.00	66.00
C380PC	118.00	71.00
C380S	68.00	41.00
C380T	84.00	50.50
C385A	48.00	28.75
C385B	52.00	31.25
C385C	56.00	33.50
C385D	64.00	38.50
C385E	76.00	45.50
C385M	88.00	52.75
C387E	114.00	68.00
C387M	128.00	77.00
C387N	164.00	98.00
C387P	198.00	119.00
C387PA	216.00	130.00
C387PB	232.00	139.00
C387S	148.00	89.00
C387T	180.00	108.00
C388E	126.00	76.00
C388M	144.00	86.00
C388N	184.00	110.00
C388P	224.00	134.00
C388PA	244.00	146.00
C388PB	260.00	156.00
C388S	166.00	100.00
C388T	204.00	122.00
C390E	114.50	68.75
C390M	125.00	75.00
C390N	149.00	89.50
C390P	173.50	104.00
C390PA	187.00	112.25
C390PB	199.50	119.75
C390PC	214.00	128.50
C390S	136.50	82.00
C390T	161.50	97.00
C392A	107.00	64.25
C392B	115.00	69.00
C392C	121.00	72.50
C392D	128.00	76.75
C392E	136.00	81.50
C392M	156.00	93.50
C393A	99.00	59.50
C393B	107.00	64.25
C393C	115.00	69.00
C393D	122.00	73.25
C393E	130.00	78.00
C393M	146.00	87.50
C394A	132.00	79.25
C394B	141.00	84.50
C394C	150.00	90.00
C394D	159.00	95.50
C394E	168.00	100.75
C394M	192.00	115.25
C395A	122.00	73.25
C395B	130.00	78.00
C395C	138.00	82.75
C395D	145.00	87.00
C395E	152.00	91.25
C395M	176.00	105.50
C397E	126.00	76.00
C397M	144.00	86.00
C397N	184.00	110.00
C397P	224.00	134.00
C397PA	244.00	146.00
C397PB	260.00	156.00
C397S	166.00	100.00
C397T	204.00	122.00
C398E	140.00	84.00
C398M	160.00	96.00
C398N	204.00	122.00
C398P	248.00	149.00
C398PA	270.00	162.00
C398PB	290.00	174.00
C398S	184.00	110.00
C398T	226.00	136.00
C501N	144.00	86.50
C501P	164.00	98.50
C501PA	178.00	106.75
C501PB	190.00	114.00
C501PC	204.00	122.50
C501PD	224.00	134.50
C501PE	244.00	146.50
C501PM	262.00	157.25
C501PS	280.00	168.00

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. ‡Insulating hardware available at **$0.05** per kit, any quantity.

OEM Semiconductor Pricing

GE Type	Net Each, Lots of 1-9	Net Each, Lots of 10-99
C501S	$132.00	$ 79.25
C501T	154.00	92.50
C509N	224.00	134.50
C509P	274.00	164.50
C509PA	298.00	178.75
C509PB	320.00	192.00
C509S	202.00	121.25
C509T	248.00	148.75

GE Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999
C511A†	$ 3.60	$2.40
C511B†	6.15	4.10
C511C†	9.15	6.10
C511D†	11.85	7.90
C511F†	2.55	1.70
C511G†	4.95	3.30
C511H†	7.65	5.10
C511U†	2.40	1.60

GE Type	Net Each, Lots of 1-9	Net Each, Lots of 10-99
C520A	$120.00	$ 72.00
C520B	132.00	79.25
C520C	142.50	85.50
C520D	154.00	92.50
C520G	160.00	96.00
C530A	100.00	61.00
C530B	110.00	66.00
C530C	121.00	72.75
C530D	132.00	79.20
C530E	143.00	86.00
C530M	154.00	92.50
C600E	178.00	106.75
C600M	196.00	117.75
C600N	234.00	140.50
C600P	270.00	162.00
C600PA	290.00	174.00
C600PB	308.00	184.75
C600S	216.00	129.75
C600T	252.00	151.25
C601PA	240.00	144.00
C601PB	256.00	153.75
C601PC	270.00	162.00
C601PD	296.00	177.75
C601PE	324.00	194.50
C601PM	352.00	211.25
C601PN	405.00	243.00
C601PS	378.00	226.75
C602L	372.00	223.25
C602LA	392.00	235.25
C602LB	418.00	250.75
C602LC	440.00	264.00
C602LD	462.00	277.25
C602LE	484.00	290.50
C602PN	330.00	198.00
C602PS	308.00	184.75
C602PT	350.00	210.00
C609N	270.00	162.00
C609P	324.00	196.75
C609PA	358.00	214.75
C609PB	384.00	230.50
C609S	242.00	145.25
C609T	298.00	178.75

GE Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Net Each, Lots of 1000-9999
C611A†	$2.40	$1.60	......
C611B†	2.60	1.73	......
C611F†	2.20	1.45	......
C611G†	2.50	1.67	......
C611U†	2.10	1.40	......
D5E37	.75	.50	......
D5E43	1.05	.70	......
D5E44	.97	.65	......
D5E45	1.49	.99	......
D5K1	6.95	4.64	......
D5K2	2.55	1.70	......
D13H1	.90	.62	......
D13H2	.85	.57	......
D13T3	.94	.63	$0.53
D13T4	1.87	1.26	1.06
D13V1	.65	.44	.36
D13V2, 3	.83	.55	.46
D13V4	$1.25	$0.84	$0.70
D16G6	.45	.30	.25
D16P1	.38	.26	.21
D16U3	.61	.41	.34
D16U4	.70	.47	.39
D26C1	.76	.51	.46
D26C2	.80	.53	.48
D26C3	.85	.67	.51
D26C4	1.15	.77	.64
D26C5	1.33	.89	.74
D26E1	1.35	.90	.81
D26E2	.82	.55	.49
D26E3	.86	.57	.51
D26E4	.89	.59	.53
D26E5	.93	.62	.56
D26E6	.75	.49	.44
D26E7	1.04	.72	.65
D26G1	1.02	.69	.62
D26P1	2.20	1.47	1.22
D26P2	2.60	1.73	1.44
D26P3	2.46	1.64	1.36
D27C1–4	See D42 Series		
D27D1–4	See D43 Series		
D28C1–8	See D40C Series		
D28D1–8	See D40D Series		
D29E1	.52	.35	.29
D29E1J1	.54	.37	.31
D29E2	.56	.38	.31
D29E2J1	.58	.40	.33
D29E4	.47	.32	.26
D29E4J1	.49	.34	.28
D29E5	.52	.35	.29
D29E5J1	.54	.37	.31
D29E6	.56	.38	.31
D29E6J1	.58	.40	.33
D29E7	.63	.42	.35
D29E7J1	.65	.44	.37
D29E9	.88	.59	.49
D29E9J1	.90	.61	.51
D29E10	.95	.63	.53
D29E10J1	.97	.65	.55
D29F1	.29	.20	.17
D29F2	.32	.21	.18
D29F3	.36	.24	.20
D29F4	.41	.27	.23
D29F5	.38	.26	.21
D29F6	.41	.27	.23
D29F7	.45	.30	.25
D30A1	1.16	.77	.69
D30A2	1.20	.80	.72
D30A3	1.28	.86	.77
D30A4	1.73	1.15	.96
D30A5	2.00	1.33	1.11
D32H1	.53	.35	.26
D32H2	.60	.40	.30
D32H3	.66	.44	.33
D32H4	.60	.40	.30
D32H5	.72	.48	.36
D32H6	.78	.52	.39
D32H7	.72	.48	.36
D32H8	.90	.60	.45
D32H9	1.02	.68	.51
D32L1	.69	.41	.34
D32L2	.81	.49	.40
D32L3	.87	.52	.43
D32L4	.60	.36	.30
D32L5	.72	.43	.36
D32L6	.69	.41	.34
D32P1	.25	.17	.14
D32P2	.25	.17	.14
D32P3	.27	.18	.15
D32P4	.29	.20	.17
D32S1	.65	.47	.38
D32S2	.72	.52	.42
D32S3	.85	.61	.49
D32S4	1.04	.75	.61
D32S5	.72	.52	.42
D32S6	.78	.54	.46
D32S7	.94	.68	.55
D32S8	.59	.42	.34
D32S9	.75	.54	.44
D32S10	1.04	.75	.61
D32V1	.76	.52	.43
D32V2	.79	.54	.45
D32V3	.87	.58	.47
D32W7	.54	.36	.27
D32W8	.60	.40	.30
D32W9	.75	.50	.38
D32W10	.98	.65	.49
D32W12	.57	.38	.29
D32W13	.66	.44	.33
D32W14	.75	.50	.38
D33D21	.47	.32	.26
D33D21J1	.49	.34	.28
D33D22	.52	.35	.29
D33D22J1	.54	.37	.31
D33D24	.43	.29	.24
D33D24J1	.45	.31	.26
D33D25	.47	.32	.26
D33D25J1	.49	.34	.28
D33D26	$0.52	$0.35	$0.29
D33D26J1	.54	.37	.31
D33D27	.59	.39	.33
D33D27J1	.61	.41	.35
D33D29	.83	.55	.46
D33D29J1	.85	.57	.48
D33D30	.88	.59	.49
D33D30J1	.90	.61	.51
D34C1	.78	47	.39
D34C2	.81	.54	.44
D34C3	.96	.57	.47
D34C4	.68	.45	.37
D34C5	.81	.48	.40
D34C6	.78	.47	.39
D34J1	.59	.39	.29
D34J2	.66	.44	.33
D34J3	.72	.48	.36
D34J4	.66	.44	.33
D34J5	.78	.52	.39
D34J6	.84	.56	.42
D34J7	.78	.52	.39
D34J8	.96	.64	.48
D34J9	1.08	.72	.54
D40C1§	.64	.42	.35
D40C2§	.89	.59	.49
D40C3§	1.00	.66	.55
D40C4§	.71	.48	.39
D40C5§	1.02	.68	.56
D40C7§	1.02	.68	.56
D40C8§	1.28	.85	.70
D40D1§	.61	.41	.34
D40D2§	.77	.51	.42
D40D3§	.82	.54	.45
D40D4§	.74	.49	.41
D40D5§	.90	.60	.49
D40D7§	.82	.54	.45
D40D8§	1.02	.68	.56
D40D10§	.97	.65	.53
D40D11§	1.12	.75	.62
D40D13§	.82	.54	.45
D40D14§	1.02	.68	.56
D40E1	.67	.44	.36
D40E5	.82	.58	.48
D40E7	1.07	.71	.59
D40K1	1.02	.68	.56
D40K5	1.14	.76	.62
D40N1§	.77	.51	.42
D40N2	.84	.56	.46
D40N3§	.84	.56	.46
D40N4	.92	.61	.51
D40N5	.71	.51	.42
D40P1§	.92	.61	.51
D40P3§	1.02	.68	.56
D40P5§	1.25	.83	.69
D41D1§	.66	.44	.36
D41D2§	.87	.58	.48
D41D4§	.79	.53	.43
D41D5§	1.00	.66	.55
D41D7§	.87	.58	.48
D41D8§	1.13	.75	.62
D41D10§	1.04	.70	.57
D41D11§	1.20	.80	.66
D41D13§	.87	.58	.48
D41D14§	1.10	.73	.60
D41E1	.72	.48	.39
D41E5	.92	.61	.50
D41E7	1.15	.77	.63
D42C1§	.90	.59	.49
D42C2§	.95	.63	.52
D42C3§	1.00	.66	.55
D42C4§	.97	.65	.53
D42C5§	1.02	.68	.56
D42C6§	1.10	.73	.60
D42C7§	1.10	.73	.60
D42C8§	1.17	.78	.64
D42C9§	1.20	.80	.66
D42C10§	1.18	.78	.64
D42C11§	1.23	.82	.67
D42C12	1.32	.88	.73
D42R1	1.08	.72	.59
D42R2	1.13	.75	.62
D43C1§	1.02	.68	.56
D43C2§	1.07	.71	.59
D43C3§	1.12	.75	.62
D43C4§	1.10	.73	.60
D43C5§	1.15	.76	.63
D43C6§, 7§	1.22	.82	.67
D43C8§	1.30	.87	.71
D43C9§	1.33	.89	.73
D43C10§	1.30	.87	.71
D43C11§	1.33	.89	.73
D43C12	1.41	.94	.78
D44C1§	.97	.65	.53
D44C2§	1.02	.68	.56
D44C3§	1.07	.72	.59
D44C4§	1.05	.70	.57
D44C5§	1.10	.73	.60
D44C6§, 7§	1.17	.78	.64
D44C8§	1.25	.84	.69
D44C9§	1.28	.86	.70
D44C10§	1.25	.84	.69
D44C11§	1.30	.87	.71
D44C12	$1.37	$0.91	$0.75
D44H1§	1.53	1.02	.84
D44H2§	1.58	1.05	.87
D44H4§	1.61	1.07	.88
D44H5§	1.66	1.10	.91
D44H7§	1.68	1.12	.92
D44H8§	1.73	1.16	.95
D44H10§	1.78	1.19	.98
D44H11§	1.89	1.26	1.04
D44Q1	1.54	1.02	.84
D44Q3	1.64	1.09	.90
D44Q5	1.74	1.15	.95
D44R1§	1.28	.85	.70
D44R2§	1.38	.92	.76
D44R3§	1.38	.92	.76
D44R3B	1.50	1.02	.81
D44R3C	1.50	1.02	.81
D44R3D	1.50	1.02	.81
D44R3E	1.50	1.02	.81
D44R3F	1.50	1.02	.81
D44R4§	1.48	.99	.82
D44R5	1.22	.82	.67
D44R6	1.33	.88	.73
D44R7	1.43	.95	.79
D44R8	1.58	1.05	.87
D45C1§	1.10	.73	.60
D45C2§	1.15	.77	.63
D45C3§	1.20	.80	.66
D45C4§	1.18	.78	.64
D45C5§	1.23	.82	.67
D45C6§	1.30	.87	.71
D45C7§	1.30	.87	.71
D45C8§	1.38	.92	.76
D45C9§	1.40	.94	.77
D45C10§	1.38	.92	.76
D45C11§	1.43	.95	.78
D45C12	1.48	.99	.82
D45H1§	1.78	1.19	.98
D45H2§	1.84	1.22	1.01
D45H4§	1.86	1.24	1.02
D45H5§	1.91	1.27	1.05
D45H7§	2.09	1.39	1.15
D45H8§	2.14	1.43	1.18
D45H10§	2.29	1.53	1.26
D45H11§	2.45	1.63	1.34
D56W1	6.06	4.02	......
D56W2	7.30	5.40	......
DA1701	.30	.20	.14
DA1702	.26	.17	.12
DA1703	.24	.16	.11
DA1704	.23	.15	.10
DHD800	See DZ800		
DHD805	See DZ805		
DHD806	See DZ806		

GE Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Net Each, Lots of 1000-9999
DT230A	$0.26	$0.15	$0.10
DT230B	.30	.20	.14
DT230F	.24	.13	.08
DT230G	.29	.17	.11
DT230H	.36	.24	.17
DT230H1	.33	.22	.16
DZ800	.14	.09	.06
DZ805	.15	.10	.07
DZ806	.17	.11	.08
F16H1	.95	.63	.53
GER4001	.38	.25	.20
GER4002	.41	.29	.22
GER4003	.45	.32	.24
GER4004	.53	.35	.28
GER4005	.60	.41	.33
GER4006	.82	.55	.44
GER4007	.90	.60	.48
GET706	.27	.17	.15
GET708	.37	.22	.20
GET914	.45	.27	.24
GET929	.37	.22	.20
GET930	.37	.22	.20
GET2221	.30	.20	.16
GET2221A	.41	.25	.22
GET2222	.27	.17	.15
GET2222A	.46	.28	.25
GET2484	.26	.25	.22
GET2904	.43	.27	.23
GET2905	.43	.27	.23
GET2906	.34	.21	.18
GET2907	.34	.21	.18
GET3013	.57	.38	.34
GET3014	.67	.44	.40
GET3563	.34	.23	.19
GET3638	.24	.18	.14
GET3638A	.27	.20	.16
GET3646	.27	.20	.16
GET3903	.55	.39	.29
GET3904	.55	.39	.29
GET3905	.55	.39	.29

†Prices include mounting hardware. For insulating hardware, add **$0.10** per unit, any quantity. §Insulating hardware available at **$0.05** per kit, any quantity.

OEM Semiconductor Pricing

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
GET3906	$0.55	$0.39	$0.29
GET4870	.75	.50	.45
GET4871	.68	.45	.40
GET5305	.45	.30	.25
GET5306	.43	.29	.24
GET5306A	.50	.33	.28
GET5307	.47	.32	.26
GET5308	.52	.35	.29
GET5308A	.59	.39	.33
GET5457	.80	.54	.43
GET5458	.73	.49	.39
GET5459	.80	.54	.43

GE Type	Net Each, Lots of		
	1-9	10-24	25-49
GSR-10AU05	$18.00	$16.20	$14.60
GSR-10AU10	20.00	18.00	16.20

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
H10A1	$4.25	$3.10	$2.80
H10B1	4.50	3.30	2.95
H10C1	3.35	2.80	2.50
H11A1	3.35	2.20	1.75
H11A2	2.60	1.75	1.45
H11A3	2.95	1.95	1.62
H11A4	2.25	1.50	1.24
H11B1	3.20	2.20	1.85
H11B2	2.95	1.95	1.62
H11C1	4.00	3.36	2.95
H11C2	3.35	2.80	2.50
H13A1	2.50	1.70	1.50
H13A2	2.25	1.50	1.35
H13B1	2.60	1.80	1.60
H13B2	2.35	1.60	1.45
H15A1	2.50	1.70	1.50
H15A2	2.25	1.50	1.35
H15B1	2.60	1.80	1.60
H15B2	2.35	1.60	1.45
H17A1	2.15	1.40	1.25
H17B1	2.25	1.50	1.35
H211A1	6.80	4.50	3.60
H211A2	5.30	3.60	3.00
H211B1	6.50	4.50	3.80
H211B2	6.00	4.00	3.34
H211C1	8.10	6.82	6.00
H211C2	6.80	5.70	5.10
HS5305	.47	.32	.27
HS5306	.45	.31	.26
HS5307	.49	.34	.28
HS5308	.54	.37	.31
HS5810	.49	.34	.28
HS5811	.54	.37	.31
HS5812	.54	.37	.31
HS5813	.58	.40	.33
HS5814	.45	.31	.26
HS5815	.49	.34	.28
HS5816	.49	.34	.28
HS5817	.54	.37	.31
HS5818	.54	.37	.31
HS5819	.58	.40	.33
HS5820	.85	.57	.48
HS5821	.90	.61	.51
HS5822	.90	.61	.51
HS5823	.97	.65	.55
L8A	7.00	4.65	......
L8B	11.85	7.90	......
L8F	4.90	3.25	......
L8G	9.45	6.30	......
L8U	4.50	3.00	......
L9A	7.65	5.10	......
L9B	13.05	8.70	......
L9F	5.40	3.60	......
L9G	10.45	6.95	......
L9U	4.95	3.30	......
L14A502	3.00	2.00	1.80
L14B1#	1.10	.75	......
L14B2#	1.20	.80	......
L14B3#	1.50	.95	......
L14B4#	1.70	1.05	......
L14C1	4.50	2.50	2.00
L14C2	3.00	2.00	1.60
L14E1	.72	.48	.40
L14E2	.59	.39	.33
L14E3	1.08	.72	.60
L14E4	.56	.38	.31
L14F	6.75	4.50	4.00
L14G1	1.56	1.04	.83
L14G2	1.41	.94	.75
L14T1	1.10	.75	.58
L14T2	1.45	1.05	.83
L14T3	1.40	.98	.78
L14T4	1.35	.93	.73
L14T5	.63	.43	.33
L15A600	$3.15	$2.10	$1.85
L15AX601	3.52	2.36	1.88
L15AX602	3.70	2.48	1.98
L15AX603	3.80	2.60	2.08
L15AX604	4.10	2.75	2.20
L15E	3.00	2.00	1.75
L811A†	8.50	5.45	......
L811B†	13.35	8.65	......
L811F†	6.40	4.00	......
L811G†	10.95	7.05	......
L811U†	6.00	3.75	......
L911A†	9.15	5.85	......
L911B†	14.55	9.45	......
L911F†	6.90	4.35	......
L911G†	11.95	7.70	......
L911U†	6.45	4.05	......
LASCS	3.15	2.10	1.89
M22P2‡	.88	.44	.16
M22P3‡	.92	.46	.17
M22P4‡	1.16	.53	.20
M73P1‡	2.64	1.32	.48
MA1701	.31	.21	.15
MA1702	.27	.18	.13
MA1703	.25	.17	.12
MA1704	.24	.15	.11
MPD200	1.21	.81	.38
MPD201	1.05	.65	.34
MPD202	.99	.55	.30
MPD203	.70	.45	.27
MPD300	1.49	.99	.45
MPD301	1.15	.70	.41
MPD302	1.04	.61	.37
MPD400	1.62	1.08	.63
MPD401	1.30	.86	.50
MPD402	1.20	.75	.47
RA1	4.95	3.30	......
RA1A	8.75	5.83	......
RA1B	15.51	10.34	......
RA1C	30.53	20.35	......
RA2	8.75	5.83	......
RA2A	24.75	16.50	......
RA2B	54.45	36.30	......
RA3	9.08	6.05	......
RA3A	25.74	17.16	......
RA3B	59.40	39.60	......

GE Type	Net Each, Lots	
	1-99	100-999
S397	$31.50	$20.95
S398	36.90	24.60
SC35B*	See SC136B	
SC35D*	See SC136D	
SC36B	See SC136B	
SC36D	See SC136D	
SC40B*	2.94	1.96
SC40B2	4.20	2.80
SC40B12*	2.94	1.96
SC40B13*, 14*	3.68	2.45
SC40B22	4.20	2.80
SC40B23, 24	5.25	3.50
SC40D*	3.77	2.51
SC40D2*	5.03	3.35
SC40D12*	3.77	2.51
SC40D13*, 14*	4.71	3.14
SC40D22	5.03	3.35
SC40D23, 24	6.29	4.19
SC40E*	4.22	2.81
SC40E2	5.48	3.65
SC40E12*	4.22	2.81
SC40E13*, 14*	5.27	3.51
SC40E22	5.48	3.65
SC40E23, 24	6.85	4.56
SC41B, 12	2.58	1.72
SC41B13, 14	3.23	2.16
SC41D, 12	3.41	2.27
SC41D13, 14	4.27	2.84
SC41E, 12	3.86	2.57
SC41E13, 14	4.83	3.22
SC45B*	3.69	2.46
SC45B2	4.95	3.30
SC45B12*	3.69	2.46
SC45B13*, 14*	4.61	3.08
SC45B22	4.95	3.30
SC45B23	6.19	4.13
SC45B24	6.19	4.13
SC45D*	4.35	2.90
SC45D2	5.61	3.74
SC45D12*	4.35	2.90
SC45D13*	5.44	3.63
SC45D14*	5.44	3.63
SC45D22	5.61	3.74
SC45D23	7.01	4.68
SC45D24	7.01	4.68
SC46B	3.33	2.22
SC46B12	3.33	2.22
SC46B13	4.16	2.78
SC46B14	4.16	2.78
SC46D	3.99	2.66
SC46D12	$3.99	$2.66
SC46D13	4.99	3.33
SC46D14	4.99	3.33
SC46E	4.86	3.24
SC46E12	4.86	3.24
SC46E13	6.08	4.05
SC46E14	6.08	4.05
SC50B*	3.90	2.60
SC50B2	5.16	3.44
SC50B12	3.90	2.60
SC50B13*	4.88	3.25
SC50B14*	4.88	3.25
SC50B22	5.16	3.14
SC50B23	6.45	4.30
SC50B24	6.45	4.30
SC50D*	4.59	3.06
SC50D2	5.85	3.90
SC50D12*	4.59	3.06
SC50D13*	5.74	3.83
SC50D14*	5.74	3.83
SC50D22	5.85	3.90
SC50D23	7.31	4.88
SC50D24	7.31	4.88
SC50E*	5.52	3.68
SC50E2	6.78	4.52
SC50E12*	5.52	3.68
SC50E13*	6.90	4.60
SC50E14*	6.90	4.60
SC50E22	6.78	4.52
SC50E23	8.48	5.65
SC50E24	8.48	5.65
SC51B	3.54	2.36
SC51B12	3.54	2.36
SC51B13	4.25	2.95
SC51B14	4.25	2.95
SC51D	4.23	2.82
SC51D12	4.23	2.82
SC51D13	5.29	3.53
SC51D14	5.29	3.53
SC51E	5.16	3.44
SC51E12	5.16	3.44
SC51E13	6.45	4.30
SC51E14	6.45	4.30
SC60B	4.90	3.55
SC60B2	6.05	4.41
SC60B12*	4.90	3.55
SC60B13*	6.12	4.44
SC60B22	6.05	4.41
SC60B23	7.56	5.51
SC60D*	5.79	4.21
SC60D2	6.98	5.06
SC60D12*	5.79	4.21
SC60D13*	7.23	5.26
SC60D22	6.98	5.06
SC60D23*	8.73	6.33
SC60E*	6.80	4.96
SC60E2	7.87	5.70
SC60E12*	6.80	4.96
SC60E13*	8.50	6.20
SC60E22	7.87	5.70
SC60E23	9.83	7.13
SC61B	4.56	3.33
SC61B12	4.56	3.33
SC61B13	5.70	4.16
SC61D	5.45	3.97
SC61D12	5.45	3.97
SC61D13	6.81	4.96
SC61E	6.46	4.70
SC61E12	6.46	4.70
SC61E13	8.08	5.88

GE Type	Net Each, Lots of		
	1-99	100-999	1000-9999
SC136B	$0.91	$0.63	$0.52
SC136D	1.09	.77	.63
SC141B§	1.50	1.00	.88
SC141B2§	1.57	1.07	.90
SC141B3§	1.57	1.07	.90
SC141B4§	1.57	1.07	.90
SC141B5§	1.57	1.07	.90
SC141B6§	1.57	1.07	.90
SC141D§	1.74	1.16	1.04
SC141D2§	1.81	1.23	1.06
SC141D3§	1.81	1.23	1.06
SC141D4§	1.81	1.23	1.06
SC141D5§	1.81	1.23	1.06
SC141D6§	1.81	1.23	1.06
SC141E§	2.49	1.66	1.49
SC141E2§	2.56	1.73	1.51
SC141E3§	2.56	1.73	1.51
SC141E4§	2.56	1.73	1.51
SC141E5§	2.56	1.73	1.51
SC141E6§	2.56	1.73	1.51
SC141M§	3.24	2.16	1.94
SC142B§	1.62	1.18	1.00
SC142D§	1.88	1.37	1.16
SC142E§	2.69	1.97	1.67
SC142M§	3.48	2.44	2.16
SC146B§	$1.79	$1.19	$1.07
SC146B2§	1.86	1.26	1.09
SC146B3§	1.86	1.26	1.09
SC146B4§	1.86	1.26	1.09
SC146B5§	1.86	1.26	1.09
SC146B6§	1.86	1.26	1.09
SC146D§	2.20	1.47	1.30
SC146D2§	2.27	1.54	1.32
SC146D3§	2.27	1.54	1.32
SC146D4§	2.27	1.54	1.32
SC146D5§	2.27	1.54	1 32
SC146D6§	2.27	1.54	1.32
SC146E§	3.15	2.10	1.86
SC146E2§	3.22	2.17	1.88
SC146E3§	3.22	2.17	1.88
SC146E4§	3.22	2.17	1.88
SC146E5§	3.22	2.17	1.88
SC146E6§	3.22	2.17	1.88
SC146M§	3.90	2.60	2.30

GE Type	Net Each, Lots	
	1-99	100-999
SC240B*	$2.94	$1.96
SC240B2	4.20	2.80
SC240B3	4.20	2.80
SC240B12*	2.94	1.96
SC240B13*	3.68	2.45
SC240B14*	3.68	2.45
SC240B22	4.20	2.80
SC240B23	5.25	3.50
SC240B24	5.25	3.50
SC240B32	4.20	2.80
SC240B33	5.25	3.50
SC240B34	5.25	3.50
SC240D*	3.77	2.51
SC240D2	5.03	3.35
SC240D3	5.03	3.35
SC240D12*	3.77	2.51
SC240D13*	4.71	3.14
SC240D14*	4.71	3.14
SC240D22	5.03	3.35
SC240D23	6.29	4.19
SC240D24	6.29	4.19
SC240D32	5.03	3.35
SC240D33	6.29	4.19
SC240D34	6.29	4.19
SC240E*	4.22	2.81
SC240E2	5.48	3.65
SC240E3	5.48	3.65
SC240E12*	4.22	2.81
SC240E13*	5.27	3.51
SC240E14*	5.27	3.51
SC240E22	5.48	3.65
SC240E23	6.85	4.56
SC240E24	6.85	4.56
SC240E32	5.48	3.65
SC240E33	6.85	4.56
SC240E34	6.85	4.56
SC240M	4.62	3.10
SC240M2	5.75	3.85
SC240M3	5.75	3.85
SC240M12	4.62	3.10
SC240M13	5.54	3.71
SC240M14	5.54	3.71
SC240M22	5.75	3.85
SC240M23	7.00	4.69
SC240M24	7.00	4.69
SC240M32	5.75	3.85
SC240M33	7.00	4.69
SC240M34	7.00	4.69
SC241B	2.58	1.72
SC241B12	2.58	1.72
SC241B13	3.23	2.16
SC241B14	3.23	2.16
SC241D	3.41	2.27
SC241D12	3.41	2.27
SC241D13	4.27	2.84
SC241D14	4.27	2.84
SC241E	3.86	2.57
SC241E12	3.86	2.57
SC241E13	4.83	3.22
SC241E14	4.83	3.22
SC241M	4.17	2.79
SC241M12	4.17	2.79
SC241M13	5.07	3.40
SC241M14	5.07	3.40
SC245B*	3.69	2.46
SC245B2	4.95	3.30
SC245B3	4.95	3.30
SC245B12*	3.69	2.46
SC245B13*	4.61	3.08
SC245B14*	4.61	3.08
SC245B22	4.95	3.30
SC245B23	6.19	4.13
SC245B24	6.19	4.13
SC245B32	4.95	3.30
SC245B33	6.19	4.13
SC245B34	6.19	4.13

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity. †Prices include mounting hardware. For insulating hardware, add **$0.10** per unit, any quantity. ‡Semiconductor chip. §Insulating hardware available at **$0.05** per kit, any quantity. #Suggest replacement with 2N5777–2N5780.

OEM Semiconductor Pricing

GE Type	Net Each, Lots 1-99	100-999
SC245D*	$4.35	$2.90
SC245D2	5.61	3.74
SC245D3	5.61	3.74
SC245D12*	4.35	2.90
SC245D13*	5.44	3.63
SC245D14*	5.44	3.63
SC245D22	5.61	3.74
SC245D23	7.01	4.68
SC245D24	7.01	4.68
SC245D32	5.61	3.74
SC245D33	7.01	4.68
SC245D34	7.01	4.68
SC245E*	5.22	3.48
SC245E2	6.48	4.32
SC245E3	6.48	4.32
SC245E12*	5.22	3.48
SC245E13*	6.53	4.35
SC245E14*	6.53	4.35
SC245E22	6.48	4.32
SC245E23	8.10	5.40
SC245E24	8.10	5.40
SC245E32	6.48	4.32
SC245E33	8.10	5.40
SC245E34	8.10	5.40
SC245M	5.64	3.58
SC245M2	6.99	4.42
SC245M3	6.99	4.42
SC245M12	5.64	3.58
SC245M13	6.85	4.59
SC245M14*	6.85	4.59
SC245M22	6.99	4.42
SC245M23	8.38	5.61
SC245M24	8.38	5.61
SC245M32	6.99	4.42
SC245M33	8.38	5.61
SC245M34	8.38	5.61
SC246B	3.33	2.22
SC246B12	3.33	2.22
SC246B13	4.16	2.78
SC246B14	4.16	2.78
SC246D	3.99	2.66
SC246D12	3.99	2.66
SC246D13	4.99	3.33
SC246D14	4.99	3.33
SC246E	4.86	3.24
SC246E12	4.86	3.24
SC246E13	6.08	4.05
SC246E14	6.08	4.05
SC246M	5.25	3.34
SC246M12	5.25	3.34
SC246M13	6.56	4.39
SC246M14	6.56	4.39
SC250B*	3.90	2.60
SC250B2	5.16	3.44
SC250B3	5.16	3.44
SC250B12*	3.90	2.60
SC250B13*	4.88	3.25
SC250B14*	4.88	3.25
SC250B22	5.16	3.44
SC250B23	6.45	4.30
SC250B24	6.45	4.30
SC250B32	5.16	3.44
SC250B33	6.45	4.30
SC250B34	6.45	4.30
SC250D*	4.59	3.06
SC250D2	5.85	3.90
SC250D3	5.85	3.90
SC250D12*	4.59	3.06
SC250D13*	5.74	3.83
SC250D14*	5.74	3.83
SC250D22	5.85	3.90
SC250D23	7.31	4.88
SC250D24	7.31	4.88
SC250D32	5.85	3.90
SC250D33	7.31	4.88
SC250D34	7.31	4.88
SC250E*	5.52	3.68
SC250E2	6.78	4.52
SC250E3	6.78	4.52
SC250E12*	5.52	3.68
SC250E13*	6.90	4.60
SC250E14*	6.90	4.60
SC250E22	6.78	4.52
SC250E23	8.48	5.65
SC250E24	8.48	5.65
SC250E32	6.78	4.52
SC250E33	8.48	5.65
SC250E34	8.48	5.65
SC250M	5.96	3.78
SC250M2	7.32	4.62
SC250M3	7.32	4.62
SC250M12	5.96	3.78
SC250M13	7.45	4.99
SC250M14	7.45	4.99
SC250M22	7.32	4.62
SC250M23	9.15	6.13
SC250M24	9.15	6.13
SC250M32	7.32	4.62
SC250M33	9.15	6.13
SC250M34	9.15	6.13
SC251B	3.54	2.36
SC251B12	3.54	2.36
SC251B13	4.25	2.95
SC251B14	$ 4.25	$2.95
SC251D	4.23	2.82
SC251D12	4.23	2.82
SC251D13	5.29	3.53
SC251D14	5.29	3.53
SC251E	5.16	3.44
SC251E12	5.16	3.44
SC251E13	6.45	4.30
SC251E14	6.45	4.30
SC251M	5.57	3.54
SC251M12	5.57	3.54
SC251M13	6.97	4.67
SC251M14	6.97	4.67
SC260B	4.90	3.55
SC260B2	6.05	4.41
SC260B3	6.05	4.41
SC260B12	4.90	3.55
SC260B13	6.12	4.44
SC260B22	6.05	4.41
SC260B23	7.56	5.51
SC260B32	6.05	4.41
SC260B33	7.56	5.51
SC260D	5.79	4.21
SC260D2	6.98	5.06
SC260D3	6.98	5.06
SC260D12	5.79	4.21
SC260D13	7.23	5.26
SC260D22	6.98	5.06
SC260D23	8.73	6.33
SC260D32	6.98	5.06
SC260D33	8.73	6.33
SC260E	6.80	4.96
SC260E2	7.87	5.70
SC260E3	7.87	5.70
SC260E12	6.80	4.96
SC260E13	8.50	6.20
SC260E22	7.87	5.70
SC260E23	9.83	7.13
SC260E32	7.87	5.70
SC260E33	9.83	7.13
SC260M	7.12	5.17
SC260M2	8.29	6.03
SC260M3	8.29	6.03
SC260M12	7.12	5.17
SC260M13	8.90	6.45
SC260M22	8.29	6.03
SC260M23	10.36	7.54
SC260M32	8.29	6.03
SC260M33	10.36	7.54
SC261B	4.56	3.33
SC261B12	4.56	3.33
SC261B13	5.70	4.16
SC261D	5.45	3.97
SC261D12	5.45	3.97
SC261D13	6.81	4.96
SC261E	6.46	4.70
SC261E12	6.46	4.70
SC261E13	8.08	5.88
SC261M	6.80	4.95
SC261M12	6.80	4.95
SC261M13	8.50	6.19

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
ST2	$0.45	$0.37	$0.30
ST4	.60	.46	.36
STB567	.48	.32	.22
STB568	.64	.43	.33
STB569	.81	.54	.44

GE Type	Net Each, Lots of 1-99	100-999
TD9	$ 4.40	$ 2.92
TD261, 2	9.68	6.49
TD261A, 2A	15.51	10.34
TD263	7.76	5.17
TD263A	11.39	7.76
TD263B	15.51	10.34
TD264–6	9.68	6.49
TD264A-6A	15.51	10.34
TD281, 2	9.60	7.70
TD281A, 2A	15.90	11.20
TD283	8.85	6.50
TD283A	12.15	8.85
TD283B	15.90	11.20
TD284–6	9.60	7.70
TD284A–6A	15.90	11.20

GE Type	Net Each, Lots of 1-9	10-99
TD401	$ 49.50	$ 33.00
TD402	62.15	41.25
TD403	89.10	59.40
TD404	107.25	71.50
TD405	140.25	93.50
TD406	198.00	132.00
TD407	297.00	198.00
TD408	396.00	264.00
TD409	462.00	308.00
TD411	49.50	33.00
TD412	62.15	41.25
TD413	89.10	59.40
TD414	107.25	71.50
TD415	140.25	93.50
TD416	198.00	132.00
TD417	297.00	198.00

GE Type	Net Each, Lots 1-99	100-999
TD418	$396.00	$264.00
TD419	462.00	308.00
TD421	49.50	33.00
TD422	62.15	41.25
TD423	89.10	59.40
TD424	107.25	71.50

GE Type	Net Each, Lots of 1-9	10-99
TD425	$140.25	$ 93.50
TD426	198.00	132.00
TD427	297.00	198.00
TD428	396.00	264.00
TD429	462.00	308.00
TD431	49.50	33.00
TD432	62.15	41.25
TD433	89.10	59.40
TD434	107.25	71.50
TD435	140.25	93.50
TD436	198.00	132.00
TD437	297.00	198.00
TD438	396.00	264.00
TD439	462.00	308.00
TD451, 2	20.63	12.38
TD451A, 2A	33.00	19.80
TD453	20.63	12.38
TD453A	24.75	14.85
TD453B	33.00	19.80
TD454–6	20.63	12.38
TD454A–6A	33.00	19.80

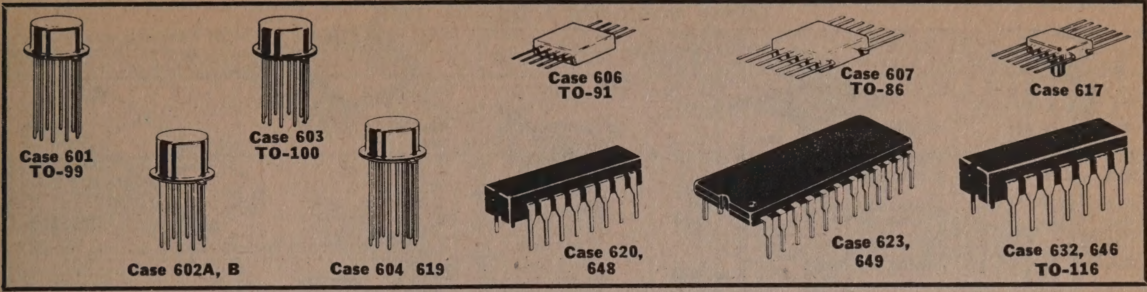
GE Type	Net Each, Lots of 1-99	100-999	1000-9999
T1S62	$0.37	$0.32	$0.26
T1S63	.32	.28	.23

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
V40LA2A	$1.04	$0.73	$0.57
V40LA2B	1.20	.91	.67
V60LA3A	1.10	.84	.62
V60LA3B	1.28	.97	.71
V80LA4A	1.17	.89	.66
V80LA4B	1.35	1.03	.76
V95LA7A	1.60	1.22	.90
V95LA7B	1.75	1.30	.98
V130LA1	1.44	.96	.72
V130LA2	1.53	1.02	.77
V130LA10A	1.75	1.20	.98
V130LA20A	2.60	1.98	1.46
V130LA20B	2.85	2.17	1.60
V130PA10A	3.94	2.63	2.10
V130PA20A	4.70	3.14	2.50
V130PA20B	$4.95	$3.30	$2.64
V130PA20C	5.18	3.45	2.76
V150LA1	1.44	.96	.72
V150LA2	1.53	1.02	.77
V150LA10A	1.75	1.20	.98
V150LA20A	2.60	1.98	1.46
V150LA20B	2.85	2.17	1.60
V150PA10A	3.94	2.63	2.10
V150PA20A	4.70	3.14	2.50
V150PA20B	4.95	3.30	2.64
V150PA20C	5.18	3.45	2.76
V250LA2	1.53	1.02	.77
V250LA4	1.77	1.18	.89
V250LA15A	2.18	1.65	1.22
V250LA20A	2.60	1.98	1.46
V250LA40A	4.30	3.27	2.40
V250LA40B	4.73	3.59	2.65
V250PA10A	3.94	2.63	2.10
V250PA20A	4.70	3.14	2.50
V250PA40A	6.23	4.16	3.32
V250PA40B	6.55	4.37	3.49
V250PA40C	6.86	4.57	3.66
V275LA2	1.53	1.02	.77
V275LA4	1.77	1.18	.89
V275LA15A	2.18	1.65	1.22
V275LA20A	2.60	1.98	1.46
V275LA40A	4.30	3.27	2.40
V275LA40B	4.73	3.59	2.65
V275PA10A	3.94	2.63	2.10
V275PA20A	4.70	3.14	2.50
V275PA40A	6.23	4.16	3.32
V275PA40B	6.55	4.37	3.49
V275PA40C	6.86	4.57	3.66
V300LA2	1.53	1.02	.77
V300LA4	1.77	1.18	.89
V420LB20A	3.93	2.98	2.20
V420LB40A	5.58	4.24	3.12
V420LB40B	6.13	4.66	3.43
V420PA20A	6.35	4.23	3.38
V420PA40A	7.88	5.25	4.20
V420PA40B	8.28	5.52	4.12
V420PA40C	8.66	5.78	4.62
V460LB20A	3.93	2.98	2.20
V460LB40A	5.58	4.24	3.12
V460LB40B	6.13	4.66	3.43
V460PA20A	6.35	4.23	3.38
V460PA40A	7.88	5.25	4.20
V460PA40B	8.28	5.52	4.12
V460PA40C	8.66	5.78	4.62
V480LB20A	3.93	2.98	2.20
V480LB40A	5.58	4.24	3.12
V480LB80A	8.97	6.25	5.03
V480LB80B	7.90	5.33	4.74
V480PA20A	6.35	4.23	3.38
V480PA40A	7.88	5.25	4.20
V480PA80A	10.94	7.29	5.83
V480PA80B	11.59	7.73	6.18
V480PA80C	12.04	8.03	6.42
V510LB20A	4.20	3.19	2.35
V510LB40A	5.85	4.45	3.28
V510LB80A	9.25	7.03	5.18
V510LB80B	10.18	7.73	5.69
V510PA20A	6.62	4.41	3.53
V510PA40A	8.15	5.43	4.34
V510PA80A	11.21	7.47	5.98
V510PA80B	11.77	7.85	6.28
V510PA80C	12.33	8.22	6.58
V550LB20A	4.20	3.19	2.35
V550LB40A	5.85	4.45	3.28
V550LB80A	9.25	7.03	5.18
V550LB80B	10.18	7.73	5.69
V550PA20A	6.62	4.41	3.53
V550PA40A	8.15	5.43	4.34
V550PA80A	11.21	7.47	5.98
V550PA80B	11.77	7.85	6.28
V550PA80C	12.33	8.22	6.58
V575LB20A	4.20	3.19	2.35
V575LB40A	5.85	4.45	3.28
V575LB80A	9.25	7.03	5.18
V575LB80B	10.18	7.73	5.69
V575PA20A	6.62	4.41	3.53
V575PA40A	8.15	5.43	4.34
V575PA80A	11.21	7.47	5.98
V575PA80B	11.77	7.85	6.28
V575PA80C	12.33	8.22	6.58

GE Type	Net Each, Lots of 1-99	100-999	1000-9999
V1000LB-80A	$12.75	$8.50	$7.38
V1000LB-160A	20.00	15.20	11.20
V1000LB-160B	22.00	16.72	12.32

*Prices include mounting hardware. For insulating hardware, add **$0.05** per unit, any quantity.

MOTOROLA Semiconductors DIGITAL INTEGRATED CIRCUITS



MECL™ MC300 AND MC350 SERIES

Compatible with the higher-speed MECL II circuits. $V_{CC}=0$, $V_{EE}=-5.2$ volts, $T_A=25°$ C.

MC300 SERIES (−55° TO +125° C)

	Typical		Case 602B				Case 606			
				Net Each, Lots of				Net Each, Lots of		
Function	t_{pd} nsec	P_D mW	Motorola Type	1-24	25-99	100-999	Motorola Type	1-24	25-99	100-999
5-input OR-NOR gate	7.5	37	MC301G	$11.55	$ 9.25	$ 7.70	MC301F	$12.65	$10.15	$ 8.45
R-S flip-flop	11	42	MC302G	13.70	11.00	9.15	MC302F	14.85	11.90	9.90
Half-adder	7.5	63	MC303G	15.60	12.50	10.40	MC303F	16.70	13.40	11.15
Bias driver	......	18	MC304G	7.25	5.80	4.85	MC304F	8.40	6.70	5.60
5-input gate expander	4.5	.....	MC305G	7.25	5.80	4.85	MC305F	8.40	6.70	5.60
3-input OR-NOR gate	7.5	37	MC306G	10.20	8.15	6.80	MC306F	11.30	9.05	7.55
3-input OR-NOR gate	7.5	15	MC307G	10.20	8.15	6.80	MC307F	11.30	9.05	7.55
AC coupled J-K flip-flop	8.5	87	MC308G	17.70	14.15	11.80	MC308F	18.80	15.05	12.55
Dual 2-input NOR gate	7.0	54	MC309G	12.60	10.10	8.40	MC309F	13.70	11.00	9.15
Dual 2-input NOR gate	7.0	54	MC310G	12.60	10.10	8.40	MC310F	13.70	11.00	9.15
Dual 2-input NOR gate	7.0	41	MC311G	12.60	10.10	8.40	MC311F	13.70	11.00	9.15
Dual 3-input NOR gate w/internal bias	7.5	70	MC312AG	15.60	12.50	10.40	MC312AF	16.70	13.40	11.15
Quad 2-input NOR gate	7.0	125	....	......	......	......	MC313F*	18.35	14.70	12.25
AC coupled J-K flip-flop	12	118	MC314G	20.85	16.70	13.90	MC314F	21.95	17.60	14.65
Line driver	14	180†	MC315G	23.25	18.60	15.50	MC315F	24.35	19.50	16.25
Lamp driver	......	135	MC316G	10.20	8.15	6.80	MC316F	11.30	9.05	7.55
Level translator—MECL to saturated logic	27.5	63	MC317G	10.20	8.15	6.80	MC317F	11.30	9.05	7.55
Level translator—saturated logic to MECL	17	105	MC318G	10.20	8.15	6.80	MC318F	11.30	9.05	7.55
MC350 SERIES (0° TO +75° C)										
5-input OR-NOR gate	7.5	37	MC351G	$ 4.55	$4.00	$3.65	MC351F	$ 6.45	$ 5.65	$5.15
R-S flip-flop	11	42	MC352AG	4.55	4.00	3.65	MC352AF	6.45	5.65	5.15
Half-adder	7.5	63	MC353G	5.95	5.20	4.75	MC353F	7.95	7.20	6.25
Bias driver	......	18	MC354G	2.45	2.15	1.95	MC354F	4.45	4.15	3.45
5-input gate expander	4.5	.....	MC355G	2.80	2.45	2.25	MC355F	4.80	4.45	3.75
3-input OR-NOR gate	7.5	37	MC356G	3.55	3.15	2.85	MC356F	5.55	5.15	4.35
3-input OR-NOR gate	7.5	15	MC357G	3.55	3.15	2.85	MC357F	5.55	5.15	4.35
AC coupled J-K flip-flop	8.5	87	MC358AG	9.50	8.35	7.60	MC358AF	11.50	10.35	9.10
Dual 2-input NOR gate	7.0	54	MC359G	3.70	3.25	2.95	MC359F	5.70	5.25	4.45
Dual 2-input NOR gate	7.0	54	MC360G	3.70	3.25	2.95	MC360F	5.70	5.25	4.45
Dual 2-input NOR gate	7.0	41	MC361G	3.70	3.25	2.95	MC361F	5.70	5.25	4.45
Dual 3-input NOR gate w/internal bias	7.5	70	MC362AG	5.00	4.40	4.00	MC362AF	6.85	6.05	5.50
Quad 2-input NOR gate	7.0	125	....	......	......	......	MC363F*	7.35	6.50	5.90
AC coupled J-K flip-flop	12	118	MC364G	10.75	9.45	8.60	MC364F	12.20	10.70	9.75
Line driver	14	270‡	MC365G	9.20	8.10	7.35	MC365F	11.05	9.75	8.85
Lamp driver	......	135	MC366G	6.25	5.50	5.00	MC366F	8.10	7.15	6.50
Level translator—MECL to saturated logic	27.5	63	MC367G	5.60	4.95	4.50	MC367F	7.50	6.60	6.00
Level translator—saturated logic to MECL	17	105	MC368G	5.60	4.95	4.50	MC368F	7.50	6.60	6.00
Dual 4-input clock driver/high-speed gate	3.0	250	....	......	......	......	MC369F*	7.25	6.40	5.80
Dual 2-input clock driver/high-speed gate	3.0	250	MC369G	5.45	4.80	4.35	....	......	......	......

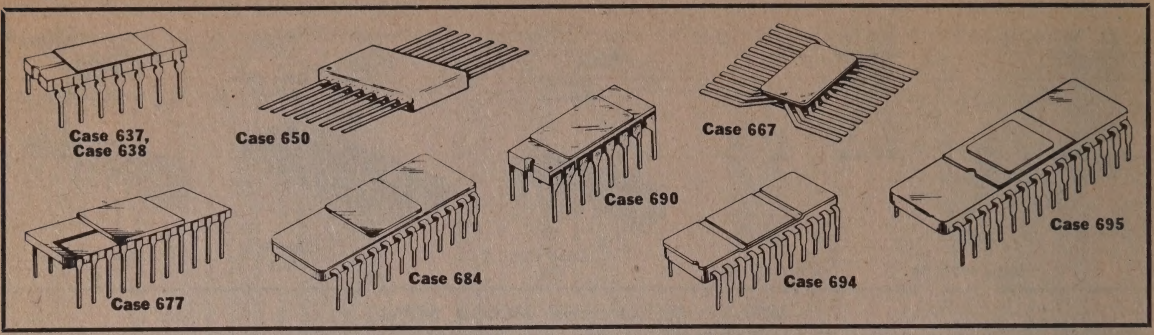
*Case 607. †With 93-ohm load for each side. ‡With 50-ohm load for each side.

MECL II™ MC1200 AND MC1000 SERIES

MC1000 Series 0° C to +75° C; MC1200 Series −55° C to +125° C. $V_{CC}=0$, $V_{EE}=5.2$ volts, $T_A=25°$ C. MC1200 Series also available in ceramic dual in-line package (suffix **L**).

		Typical		Case 607 (−55° C to +125° C)				Case 646 (0° to +75° C)			
					Net Each, Lots of				Net Each, Lots of		
Function		t_{pd} nsec	P_D mW	Motorola Type	1-99	100-999	1000-4999	Motorola Type	1-99	100-999	1000-4999
Single 6-input gate	3 OR outputs w/pulldowns 3 NOR outputs w/pulldowns	4.0	115	MC1201F	$2.23	$1.86	$1.49	MC1001P	$1.48	$1.25	$0.99
Dual 4-input gate	2 OR outputs w/pulldowns 2 NOR outputs w/pulldowns	4.0	95	MC1204F	2.23	1.86	1.49	MC1004P	1.48	1.25	.99
	2 OR outputs w/o pulldowns 2 NOR outputs w/o pulldowns	4.0	45	MC1206F	2.23	1.86	1.49	MC1006P	1.48	1.25	.99
Triple 3-input gate	3 NOR outputs w/pulldowns	4.0	110	MC1207F	2.23	1.86	1.49	MC1007P	1.48	1.25	.99
Quad 2-input gate	4 NOR outputs w/pulldowns	4.5	115	MC1210F	2.23	1.86	1.49	MC1010P	1.48	1.25	.99
	2 NOR outputs w/pulldowns 2 NOR outputs w/o pulldowns	4.5	95	MC1211F	2.23	1.86	1.49	MC1011P	1.48	1.25	.99
	4 NOR outputs w/o pulldowns	4.5	65	MC1212F	2.23	1.86	1.49	MC1012P	1.48	1.25	.99
85 MHz AC coupled J-K flip-flop		6.0	125	MC1213F	4.47	3.72	2.98	MC1013P	2.97	2.47	1.98
Dual R-S flip-flop (positive clock)		6.0	140	MC1214F	4.47	3.72	2.98	MC1014P	2.97	2.47	1.98
Dual R-S flip-flop (negative clock)		6.0	140	MC1215F	4.47	3.72	2.98	MC1015P	2.97	2.47	1.98
Dual R-S flip-flop (single rail)		6.0	140	MC1216F	4.47	3.72	2.98	MC1016P	2.97	2.47	1.98
Level translator (saturated logic to MECL)		15	105	MC1217F	5.59	4.66	3.73	MC1017P	3.72	3.10	2.48
Level translator (MECL to saturated logic)		19	55	MC1218F	5.59	4.66	3.73	MC1018P	3.72	3.10	2.48
Full adder		3–8	145	MC1219F	7.26	6.05	4.84	MC1019P	4.72	3.93	3.15
Quad line receiver		4.0	115	MC1220F	2.23	1.86	1.49	MC1020P	1.48	1.25	.99
Full subtractor		4–11	145	MC1221F	7.26	6.05	4.84	MC1021P	4.72	3.93	3.15
Type "D" flip-flop		8.0	110	MC1222F	5.59	4.66	3.73	MC1022P	3.72	3.10	2.48
Dual 4-input OR-NOR clock driver		2.0	250	MC1223L*	3.00	2.50	2.00	MC1023P	2.40	2.00	1.60
Dual 2-input expandable gate		4.0	95	MC1224L*	1.86	1.55	1.24	MC1024P	1.48	1.23	.99

*Case 632.



MECL II™, MC1200 AND MC1000 SERIES (CONTINUED)

Function	Typical		Case 607 (−55° C to +125° C)				Case 646 (0° C to +75° C)			
			Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
	t_{pd} nsec	P_D mW		1-99	100-999	1000-4999		1-99	100-999	1000-4999
Dual 4- and 5-input expander	......	......	MC1225F	$2.23	$1.86	$1.49	MC1025P	$1.48	$1.23	$0.99
Dual 3-4-input transmission line/clock driver	2.0	140	MC1226F	3.60	3.00	2.40	MC1026P	2.40	2.00	1.60
120 MHz AC coupled J-K flip-flop	4.0	250	MC1227L*	5.58	4.65	3.72	MC1027P	4.45	3.71	2.97
Dual 4-channel data selector	5.0	170	MC1228L†	8.37	6.97	5.58	MC1028P‡	6.69	5.57	4.46
Quad exclusive-OR gate	5.0	130	MC1230F	3.36	2.80	2.24	MC1030P	2.23	1.86	1.49
Quad exclusive-NOR gate	5.0	130	MC1231L*	2.79	2.32	1.86	MC1031P	2.23	1.86	1.49
100 MHz AC coupled dual J-K flip-flop	4.5	180	MC1232L†	5.58	4.65	3.72	MC1032P‡	4.45	3.71	2.97
Dual R-S flip-flop (single rail, negative clock)	6.0	140	MC1233F	4.47	3.72	2.98	MC1033P	2.97	2.47	1.98
Type D flip-flop	4.0	185	MC1234L*	7.50	6.25	5.00	MC1034P	6.00	5.00	4.00
Triple line receiver	5.0	140	MC1235F	2.23	1.86	1.49	MC1035P	1.48	1.25	.99
16-bit coincident memory	17	250	......	......	......	......	MC1036P	15.00	12.48	10.00
16-bit coincident memory without pulldowns	17	250	......	......	......	......	MC1037P	15.00	12.48	10.00
Quad level translator (MECL to satur. logic)	12	200	MC1239L†	6.51	5.42	4.34	MC1039P‡	5.20	4.33	3.47
Quad latch	8.0	250	MC1240L*	5.58	4.65	3.72	MC1040P	4.45	3.71	2.97
Decoder-Nixie§ driver	......	178	MC1245L†	5.58	4.65	3.72	MC1045P‡	4.45	3.71	2.97
Quad 2-input AND gate	5.0	130	MC1247F	3.36	2.80	2.24	MC1047P	2.23	1.86	1.49
Quad 2-input NAND gate	5.0	130	MC1248F	3.36	2.80	2.24	MC1048P	2.23	1.86	1.49
Dual full adder	9.0	375	MC1259L†	8.37	6.97	5.58	MC1059P‡	6.69	5.57	4.46
Quad 2-input NOR gate	2.0	320	MC1262L†	3.00	2.50	2.00	MC1062P‡	2.40	2.00	1.60
Quad 2-input NOR gate	2.0	320	MC1263L*	3.00	2.50	2.00	MC1063P	2.40	2.00	1.60
Triple line receiver	2.0	350	MC1266F	3.60	3.00	2.00	MC1066P	2.40	2.00	1.60
Quad MTTL to MECL translator with strobe	5.0	300	MC1267L†	6.51	5.42	4.34	MC1067P‡	5.20	4.33	3.47
Quad MECL to MTTL translator with totem-pole outputs	5.0	340	MC1268L†	6.51	5.42	4.34	MC1068P‡	5.20	4.33	3.47
Quad latch	8.0	200	MC1270L*	5.58	4.65	3.72	MC1070P	4.45	3.71	2.97

*Case 632; not available in Case 607. †Case 648. ‡Case 650. §Registered Burroughs Corp. trademark.

MECL III™ MC1600 SERIES

State-of-the-art, emitter coupled logic family with sub-nsec local propagation delays. Multilayer metalization for optimum performance. Compatible with MECL II and MECL 10,000™ Series. Temperature, 0° C to +75° C. $V_{CC}=0$ V; $V_{EE}=-5.2$ V; $T_A=25°$ C.

Function		Typical		Case 620				Case 617			
				Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
		t_{pd} nsec	P_D mW		1-24	25-99	100-999		1-24	25-99	100-999
Voltage controlled oscillator		▲	150	MC1648L■	$ 4.70	$ 3.90	$ 3.10	......	......	......	......
Binary counter (high Z)		Ɪ	750‡	MC1654L	64.80	54.00	43.20	......	......	......	......
Voltage controlled multivibrator		‖	125	MC1658L♦	5.20	4.30	3.45	......	......	......	......
Dual 4-input OR-NOR gate (high Z)		1.1	120	MC1660L	11.25	9.40	7.50	MC1660S	$15.00	$12.00	$10.00
Dual 4-input OR-NOR gate (low Z)		1.1	120	MC1661L	11.25	9.40	7.50	MC1661S	15.00	12.00	10.00
Quad 2-input NOR gate (high Z)		1.1	240	MC1662L	11.25	9.40	7.50	MC1662S	16.50	13.20	11.00
Quad 2-input NOR gate (low Z)		1.1	240	MC1663L	11.25	9.40	7.50	MC1663S	16.50	13.20	11.00
Quad 2-input OR gate (high Z)		1.1	240	MC1664L	11.25	9.40	7.50	MC1664S	16.50	13.20	11.00
Quad 2-input OR gate (low Z)		1.1	240	MC1665L	11.25	9.40	7.50	MC1665S	16.50	13.20	11.00
Dual clocked R-S flip-flop (high Z)		1.8	220	MC1666L	22.35	18.60	14.90	MC1666S	30.00	24.00	20.00
Dual clocked R-S flip-flop (low Z)		1.8	230	MC1667L	22.35	18.60	14.90	MC1667S	30.00	24.00	20.00
Dual clocked latch (high Z)		1.8	220	MC1668L	22.35	18.60	14.90	MC1668S	37.50	30.00	25.00
Dual clocked latch (low Z)		1.8	220	MC1669L	22.35	18.60	14.90	MC1669S	37.50	30.00	25.00
Master-slave type D flip-flop (high Z)		*	220	MC1670L	20.35	16.87	13.50	MC1670S	27.00	21.60	18.00
Master-slave type D flip-flop (low Z)		*	220	MC1671L	20.25	16.87	13.50	MC1671S	27.00	21.60	18.00
Triple 2-input exclusive-OR gate	(high Z)	1.3	220	MC1672L	14.10	11.75	9.40	MC1672S	18.75	15.00	12.50
	(low Z)	1.3	250	MC1673L	14.10	11.75	9.40	MC1673S	18.75	15.00	12.50
Triple 2-input exclusive-NOR gate	(high Z)	1.3	220	MC1674L	14.10	11.75	9.40	MC1674S	18.75	15.00	12.50
	(low Z)	1.3	250	MC1675L	14.10	11.75	9.40	MC1675S	18.75	15.00	12.50
Bi-quinary counter (high Z)		†	750‡	MC1678L	64.80	54.00	43.20	......	......	......	......
Bi-quinary counter (low Z)		†	750‡	MC1679L	64.80	54.00	43.20	......	......	......	......
Random access memory (RAM) cell (high Z)		2.5§ 3.5#	270	MC1680L	42.15	35.10	28.10	......	......	......	......
Random access memory (RAM) cell (high Z)		2.5§ 3.5#	300	MC1681L	42.20	35.10	28.10	......	......	......	......
Content addressable memory (CAM) cell (high Z)		2.8• 4.0#	270	MC1682L	42.15	35.10	28.10	......	......	......	......
Content addressable random access memory (CARAM) cell (high Z)		2.5§ 2.8• 4.0#	270	MC1684L	42.15	35.10	28.10	......	......	......	......
UHF prescaler type D flip-flop		*	200	MC1690L	55.00	50.00	45.00	MC1690S	60.00	55.00	50.00
Quad line receiver		1.1	220	MC1692L	11.25	9.40	7.50	MC1692S	16.50	13.20	11.00
4-bit shift register (high Z)		Ɪ	750‡	MC1694L	64.80	54.00	43.20	......	......	......	......

*Toggle frequency = 350 MHz typ. †Max. operating frequency = 350 MHz typ. ‡Requires heat sink IERC LIC-14A2CB or equivalent. §Read delay. #Write delay. •Search delay. ▲Max. operating frequency = 225 MHz typ. ■Case 632; also available in Case 646. ♦Also available in Case 648. ƪMax. operating frequency = 325 MHz typ. ‖Max. operating frequency = 150 MHz typ.

SEE PREVIOUS MOTOROLA PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

MOTOROLA Semiconductors DIGITAL INTEGRATED CIRCUITS

MECL 10,000™ MC10,000 SERIES

Provides non-saturated switching for very high speed operation. MECL III™ is directly compatible with MECL 10,000 and can be used to extend the speed capability of the MECL 10,000 Series. Temperature −30° C to +85° C (MC10,000/MC10,200); −55° C to +125° C (MC10,500/MC10,600). $V_{CC} = 0$ V; $V_{EE} = -5.2$ V; $T_A = 25°$ C. **L** suffix denotes dual inline ceramic package (Case 620).

	Typical		−30° C to +85° C				−55° C to +125° C			
				Net Each, Lots of				Net Each, Lots of		
Function	t_{pd} nsec	P_D mW	Motorola Type	1-24	25-99	100-999	Motorola Type	1-24	25-99	100-999
Quad gate	2.0	100	MC10101L	$ 2.09	$ 1.84	$ 1.67	MC10501L	$ 3.75	$ 3.30	$ 3.00
Quad 2-input gate	2.0	100	MC10102L	2.09	1.84	1.67	MC10502L	3.75	3.30	3.00
Quad AND gate	2.7	140	MC10104L	2.09	1.84	1.67	......	......	......	......
Triple 2-3-2-input gate	2.0	75	MC10105L	2.09	1.84	1.67	MC10505L	3.75	3.30	3.00
Triple 4-3-3-input gate	2.0	75	MC10106L	2.09	1.84	1.67	MC10506L	3.75	3.30	3.00
Triple 2-input exclusive-OR/exclusive-NOR	2.5	110	MC10107L	2.62	2.30	2.09	MC10507L	4.69	4.13	3.75
Dual 4-5-input OR-NOR gate	2.0	50	MC10109L	2.09	1.84	1.67	MC10509L	3.75	3.30	3.00
Dual 3-input 3-output OR gate	2.4	150	MC10110L	2.62	2.30	2.09	......	......	......	......
Dual 3-input 3-output NOR gate	2.4	150	MC10111L	2.62	2.30	2.09	......	......	......	......
Triple line receiver	2.4	145	MC10114L	2.62	2.30	2.09	......	......	......	......
Quad line receiver	2.0	100	MC10115L	2.09	1.84	1.67	MC10515L	3.75	3.30	3.00
Triple line receiver	2.0	75	MC10116L	2.09	1.84	1.67	MC10516L	3.75	3.30	3.00
Dual 2-wide 2-3-input OR-AND/ OR-AND-INVERT gate	2.3	100	MC10117L	2.62	2.30	2.09	MC10517L	4.69	4.13	3.75
Dual 2-wide 3-input OR-AND gate	2.3	100	MC10118L	2.62	2.30	2.09	MC10518L	4.69	4.13	3.75
4-wide 4-3-3-3-input OR-AND gate	2.3	100	MC10119L	2.62	2.30	2.09	MC10519L	4.69	4.13	3.75
4-wide OR-AND/OR-AND-INVERT gate	2.3	100	MC10121L	2.62	2.30	2.09	MC10521L	4.69	4.13	3.75
MTTL to MECL translator	5.0	340	MC10124L	5.63	4.95	4.50	......	......	......	......
MECL to MTTL translator	5.0	360	MC10125L	5.63	4.95	4.50	......	......	......	......
Bus driver	12.0	700	MC10128L	8.10	7.15	6.50	......	......	......	......
Bus receiver	10.0	725	MC10129L	8.10	7.15	6.50	......	......	......	......
Dual latch	2.5	160	MC10130L	5.58	4.91	4.46	......	......	......	......
Dual type D master-slave flip-flop	*	225	MC10131L	7.05	6.20	5.65	MC10531L	12.75	11.22	10.20
Dual multiplexer with latch and common reset	3.0	225	MC10132L	6.28	5.53	5.02	......	......	......	......
Quad latch	4.0	300	MC10133L	7.73	6.80	6.19	......	......	......	......
Multiplexer with latch	3.0	225	MC10134L	6.28	5.53	5.02	......	......	......	......
Dual J-K master-slave flip-flop	†	250	MC10135L	8.69	7.65	6.95	......	......	......	......
Universal hexadecimal counter	‡	585	MC10136L	17.79	15.66	14.23	......	......	......	......
Universal decade counter	‡	585	MC10137L	17.79	15.66	14.23	......	......	......	......
Four-bit universal shift register	§	400	MC10141L	17.79	15.66	14.23	......	......	......	......
64-bit register file	#	585	MC10145L	36.00	30.00	24.00	......	......	......	......
12-bit parity generator checker	4.0	320	MC10160L	8.55	7.52	6.84	MC10560L	15.38	13.53	12.30
Binary to 1-of-8 decoder (low)	4.0	315	MC10161L	6.77	5.96	5.42	......	......	......	......
Binary to 1-of-8 decoder (high)	4.0	315	MC10162L	6.77	5.96	5.42	......	......	......	......
8-line multiplexer	3.0	300	MC10164L	6.77	5.96	5.42	MC10564L	12.19	10.73	9.75
8-input priority encoder	7.0	580	MC10165L	11.50	10.12	9.20	......	......	......	......
Binary to 1-of-4 decoder	4.0	340	MC10171L	6.77	5.96	5.42	......	......	......	......
Quad 2-input multiplexer/latch	2.5	260	MC10173L	7.75	6.80	6.19	......	......	......	......
Dual 4-to-1 multiplexer	3.5	325	MC10174L	6.77	5.96	5.42	......	......	......	......
Quint latch	2.5	385	MC10175L	9.15	8.05	7.33	......	......	......	......
Look-ahead carry block	.....	285	MC10179L	8.55	7.52	6.84	......	......	......	......
Dual high speed adder/subtractor	4.5	340	MC10180L	22.50	19.80	18.00	......	......	......	......
4-bit ALU/function generator	.....	575	MC10181L•	28.00	25.80	23.50	MC10581L	52.88	46.53	42.30
Dual 3-input 3-output OR gate	1.5	150	MC10210L	3.93	3.45	3.14	......	......	......	......
Dual 3-input 3-output NOR gate	1.5	150	MC10211L	3.93	3.45	3.14	......	......	......	......
Triple line receiver	1.8	100	MC10216L	3.13	2.75	2.50	......	......	......	......
Dual type D master-slave flip-flop	▲	285	MC10231L	10.60	9.33	8.48	MC10631L	19.13	16.83	15.30
64-bit random access memory (60-ohm)	#	420	MCM10140AL■	25.50	21.20	17.00	......	......	......	......
64-bit random access memory (50-ohm)	#	420	MCM10148AL■	28.50	23.80	19.00	......	......	......	......

*f=160 MHz; †f=140 MHz. ‡f=150 MHz. §f=200 MHz. #Access time=10. •In dual inline ceramic package (Case 623); also available in dual inline plastic package (Case 649). ▲f=225 MHz. ■In dual inline ceramic package (Case 690).

MHTL™ MC660 SERIES

Feature outstanding noise immunity; provide error-free operation in high noise environments far beyond the tolerance of other IC families. Temperature −30° C to +75° C. $V_{CC} = 15$ V ± 1.0 VDC; $T_A = 25°$ C. MHTL ceramic dual inline devices are available with specification over the −55° C to +125° C temperature range and/or with hi-rel processing on special order. **L** suffix denotes dual inline ceramic package (Case 620, 632), **P** suffix denotes dual inline plastic package (Case 646, 648).

	Typical			Net Each, Lots of				Net Each, Lots of		
Function	t_{pd} nsec	P_D mW	Motorola Type	1-99	100-999	1000-4999	Motorola Type	1-99	100-999	1000-4999
Expandable dual 4-input gate Active pullup	110	88/26*	MC660L	$1.68	$1.40	$1.12	MC660P	$1.21	$1.01	$0.81
Passive pullup	125	88/26*	MC661L	1.60	1.33	1.07	MC661P	1.15	.96	.77
Expandable dual 4-input line driver	140	180/26*	MC662L	1.89	1.57	1.26	MC662P	1.33	1.11	.89
Dual J-K flip-flop	3.0†	200	MC663L	3.36	2.80	2.24	MC663P	2.43	2.02	1.62
Master-slave R-S flip-flop	3.0†	160	MC664L	2.34	1.95	1.56	MC664P	1.87	1.56	1.25
Triple level translator	40	83‡	MC665L	2.37	1.97	1.58	MC665P	1.60	1.33	1.07
Triple level translator	75	105	MC666L	2.37	1.97	1.58	MC666P	1.80	1.50	1.20
Dual monostable multivibrator	140	240	MC667L	3.16	2.63	2.11	MC667P	2.76	2.30	1.84
Quad 2-input gate (passive pullup)	125	176/52*	MC668L	1.60	1.33	1.07	MC668P	1.15	.96	.77
Dual 4-input expander	....	....	MC669L	1.20	1.00	.80	MC669P	1.02	.85	.68
Triple 3-input gate (passive pullup)	125	132/39*	MC670L	1.60	1.33	1.07	MC670P	1.15	.96	.77
Triple 3-input gate (active pullup)	110	132/39*	MC671L	1.68	1.40	1.12	MC671P	1.21	1.01	.81
Quad 2-input gate (active pullup)	110	176/52*	MC672L	1.68	1.40	1.12	MC672P	1.21	1.01	.81
Dual 2-input AND-OR-INVERT gate	110	160/50*	MC673L	1.80	1.50	1.20	MC673P	1.32	1.10	.88
Dual 2-input AND-OR-INVERT gate	125	160/50*	MC674L	1.74	1.45	1.16	MC674P	1.29	1.07	.86
Dual pulse stretcher	150§	180	MC675L	3.24	2.70	2.16	MC675P	2.79	2.32	1.86
BCD-to-decimal decoder/driver	....	380	MC676L	6.30	5.25	4.20	MC676P	4.85	4.05	3.25
Hex inverter with strobe (active pullup)	110	246/96*	MC677L	2.23	1.86	1.49	MC677P	1.53	1.27	1.02
w/o output resistors	125	192/96*	MC678L	2.15	1.78	1.43	MC678P	1.45	1.21	.97
Dual lamp driver	0.5#	250/30*	MC679L	2.37	1.97	1.58	MC679P	2.01	1.67	1.34
Hex inverter	110	246/96*	MC680L	1.68	1.40	1.12	MC680P	1.21	1.01	.81
Hex inverter with open collector	125	192/96*	MC681L	1.68	1.40	1.12	MC681P	1.21	1.01	.81
Quad latch	250	375	MC682L	3.30	2.75	2.20	MC682P	2.65	2.20	1.76
Quad 2-input exclusive OR	....	380	MC683L	3.05	2.55	2.05	MC683P	2.45	2.05	1.62
Decade counter	0.5†	480	MC684L	6.30	5.25	4.20	MC684P	4.85	4.05	3.25
Binary counter	0.5†	480	MC685L	6.30	5.25	4.20	MC685P	4.85	4.05	3.25
4-bit shift register	0.5†	480	MC686L	6.30	5.25	4.20	MC686P	4.85	4.05	3.25
Dual J-K flip-flop	2.5†	375	MC688L	3.40	2.80	2.25	MC688P	2.55	2.10	1.70
Hex inverter (high voltage)	150	173/55*	MC689L	1.75	1.50	1.15	MC689P	1.35	1.15	.90
Hex inverter (active pullup)	150	173/55*	MC690L	1.75	1.50	1.15	MC690P	1.35	1.15	.90

*Inputs high/input low. †f_{tog}, MHz. ‡MDTL (104 MRTL). §Pins 1, 6; 110 ns, pins 5, 6. #μsec.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ MC7400 SERIES

Medium operating speed (15–30 MHz clock rate); good external noise immunity and high fan out. V_{CC} = 5.0 V; T_A = 25° C. Temperature, 0° C to +70° C. **F** suffix denotes flat ceramic package (Case 607, 650, 667), **L** suffix denotes dual inline ceramic package (Case 620, 623, 632), **P** suffix denotes dual inline plastic package (Case 646, 648, 649).

Description	t_{pd} nsec	P_D mW	Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
				1-99	100-999	1000-4999		1-24	25-99	100-999
Quad 2-input gate	10	40	MC7400P	$ 0.59	$ 0.48	$ 0.40	MC7400F, L	$ 1.80	$ 1.50	$ 1.20
Quad 2-input gate with OC	35	40	MC7401P	.59	.48	.40	MC7401F, L	1.80	1.50	1.20
Quad 2-input NOR gate	10	40	MC7402P	.59	.48	.40	MC7402F, L	1.80	1.50	1.20
Quad 2-input NAND gate with OC	35	40	MC7403P	.59	.48	.40	MC7403L	2.25	1.88	1.50
Hex inverter	13	60	MC7404P	.71	.60	.50	MC7404F, L	2.15	1.80	1.44
Hex inverter	35	60	MC7405P	.71	.60	.50	MC7405L	2.15	1.80	1.44
Hex inverter buffer/driver with OC	15	105	MC7406P	2.65	2.20	1.76	MC7406L	5.33	4.44	3.55
Hex buffer/driver with OC	14	145	MC7407P	2.65	2.20	1.76	MC7407L	5.33	4.44	3.55
Quad 2-input AND gate	15	70	MC7408P	.78	.63	.52	MC7408L	2.10	1.75	1.40
Quad 2-input AND gate with OC	15	70	MC7409P	.78	.63	.52	MC7409L	2.10	1.75	1.40
Triple 3-input NAND gate	10	30	MC7410P	.59	.48	.40	MC7410F, L	1.80	1.50	1.20
Hex inverter buffer/driver with OC	15	105	MC7416P	2.20	1.85	1.48	MC7416L	4.43	3.79	2.95
Hex buffer driver	14	145	MC7417P	2.20	1.85	1.48	MC7417L	4.43	3.79	2.95
Dual 4-input NAND gate	10	20	MC7420P	.59	.48	.40	MC7420F, L	1.80	1.50	1.20
Quad 2-input interface NAND gate	17	40	MC7426P	.71	.59	.47	MC7426L	2.15	1.80	1.44
8-input NAND gate	10	10	MC7430P	.59	.48	.40	MC7430F, L	1.80	1.50	1.20
Quad 2-input positive-NAND buffer	....	50	MC7437P	1.40	1.00	.80	MC7437F, L	3.23	2.69	2.15
MC7437 with OC	....	50	MC7438P	1.40	1.00	.80	MC7438F, L	3.23	2.69	2.15
Dual 4-input NAND buffer	13	50	MC7440P	.59	.48	.40	MC7440F, L	1.80	1.50	1.20
BCD-to-decimal decoder and high-level driver	....	105	MC7441AP	3.25	2.70	2.15	MC7441AL	9.90	8.25	6.60
BCD-to-decimal decoder	22/23*	140	MC7442P	2.50	2.10	1.70	MC7442L	7.75	6.45	5.15
Excess three-to-decimal decoder	22/23*	140	MC7443P	3.55	2.95	2.35	MC7443L	10.95	9.15	7.30
Excess three gray-to-decimal decoder	22/23*	140	MC7444P	3.55	2.95	2.35	MC7444L	10.95	9.15	7.30
BCD-to-one-of-ten decoder/driver	50 max.	215	MC7445P	4.55	3.80	3.05	MC7445L	14.05	11.70	9.35
BCD-to-seven segment decoder/driver	BI/RBO	265	MC7446P	3.80	3.15	2.50	MC7446L	11.50	9.60	7.70
	5	265	MC7447P	3.55	2.95	2.35	MC7447L	10.60	8.85	7.10
		265	MC7448P	3.70	3.05	2.45	MC74478L	9.00	7.50	6.00
	6	165	....	....	....	....	MC7449F	8.65	7.20	5.75
Expandable dual 2-wide 2-input AND-OR-INVERT gate	13	28	MC7450P	.59	.48	.40	MC7450F, L	1.80	1.50	1.20
Dual 2-wide 2-input A-O-I gate	13	28	MC7451P	.59	.48	.40	MC7451F, L	1.80	1.50	1.20
Expandable 4-wide 2-input AND-OR-INVERT gate	13	22	MC7453P	.59	.48	.40	MC7453F, L	1.80	1.50	1.20
4-wide 2-input AND-OR-INVERT gate	13	22	MC7454P	.59	.48	.40	MC7454F, L	1.80	1.50	1.20
Dual 4-input expander for AND-OR-INVERT gates	5	8	MC7460P	.59	.48	.40	MC7460F, L	1.80	1.50	1.20
J-K flip-flop	30	65	MC7470P	.88	.73	.58	MC7470L	2.70	2.25	1.80
J-K flip-flop	30	40	MC7472P	.83	.69	.55	MC7472F, L	2.55	2.15	1.70
Dual J-K flip-flop	30	80	MC7473P	1.18	.98	.78	MC7473F, L	3.60	3.00	2.40
Quad latch	30	160	MC7475P	2.05	1.70	1.35	MC7475L	6.30	5.25	4.20
Dual J-K flip-flop	30	80	MC7476P	1.30	1.08	.86	....	....	....	....
Dual type D flip-flop	16	84	MC7479P	1.18	.98	.78	MC7479F, L	3.60	3.00	2.40
Gated full adder	10/55†	105	MC7480P	1.60	1.32	1.05	MC7480L	4.85	4.05	3.25
2-bit full adder	15/12†	165	MC17482P	3.90	1.95	1.12	MC17482F, L	7.20	6.00	4.80
2-bit full adder	25/12†	165	MC27482P	3.90	1.95	1.12	MC27482F, L	7.20	6.00	4.80
4-bit binary full adder	35	390	MC7483P	3.70	3.10	2.50	MC7483L	11.35	9.45	7.55
16-bit scratch pad memory cell with gated inputs	25/15‡	250	MC7484P	**	**	**	MC7484L	**	**	**
Decade counter	20/bit	160	MC7490P	2.30	1.90	1.50	MC7490F, L	7.00	5.85	4.70
8-bit shift register	25	175	MC7491AP	3.25	2.70	2.15	MC7491AL	9.90	8.25	6.60
Divide-by-twelve counter	60	160	MC7492P	2.30	1.90	1.50	MC7492F, L	7.00	5.85	4.70
4-bit binary counter	20/bit	160	MC7493P	2.30	1.90	1.50	MC7493F, L	7.00	5.85	4.70
4-bit shift register	25	175	MC7494P	4.10	3.45	2.75	MC7494L	7.80	6.50	5.20
4-bit shift register	25	250	MC7495P	2.60	2.15	1.70	MC7495F, L	7.90	6.60	5.30
5-bit shift register	25	240	MC7496P	4.80	4.00	3.20	MC7496F, L	9.55	7.95	6.35
Dual 4-bit latch	30	320	MC74100P	5.25	4.38	3.50	MC74100F, L	9.90	8.25	6.60
Dual J-K flip-flop	30	80	MC74107P	1.18	.98	.78	MC74107F, L	3.60	3.00	2.40
Monostable multivibrator	....	90	MC74121P	1.18	.98	.78	MC74121F, L	3.60	3.00	2.40
BCD-to-one-of-ten decoder/driver	50 max.	215	MC74145P	2.65	2.20	1.75	MC74145L	8.10	6.75	5.40
16-channel data selector	8.5–35	200	MC74150P	6.45	5.40	4.30	MC74150L	9.65	8.05	6.45
8-channel data selector	8.5–35	145	MC74151P	4.10	3.40	2.75	MC74151L	9.00	7.50	6.00
8-channel data selector/multiplexer	8.5–35	130	MC74152P	4.70	3.91	3.13	MC74152F, L	9.00	7.50	6.00
Dual 4-channel data selector/multiplexer	12–22	180	MC74153P	4.70	3.91	3.13	MC74153F, L	9.00	7.50	6.00
Dual 2-to-4 line decoder/ 1-to-4 line demultiplexer	16/21*	125	MC74155P	4.49	3.74	2.99	MC74155F, L	6.75	5.63	4.50
	16/21*	125	MC74156P	4.49	3.74	2.99	MC74156F	15.08	12.56	10.05
	16/21*	125	....	....	....	....	MC74156L	6.75	5.63	4.50
Quad 2-input data selector/multiplexer	40	150	MC74157P	2.78	2.31	1.85	MC74157F, L	3.68	3.06	2.45
8-bit parallel out serial shift register	36 MHz§	185	MC74164AP	6.00	5.00	4.00	MC74164AF, L	9.75	8.13	6.50
8-bit odd/even generator/checker	15–30	170	MC74180P	5.10	4.25	3.40	MC74180L	14.25	11.88	9.50
4-bit ALU/function generator	12–35	470	MC74181P	22.25	18.13	14.50	MC74181F, L	28.50	23.75	19.00
Look-ahead carry generator	....	180	MC74182P	4.80	4.00	3.20	MC74182F, L	7.65	6.38	5.10
Presettable up/down counter decade	14–31	325	MC74192P	7.43	6.19	4.95	MC74192F, L	17.10	14.25	11.40
4-bit binary	14–31	325	MC74193P	7.43	6.19	4.95	MC74193F, L	17.10	14.25	11.40
Binary to 1-of-8 line decoder	14	100	MC74406P#	**	**	**	MC74406F, L#	**	**	**
8-bit parity tree	15–30	150	MC74408P#	4.50	3.75	3.00	MC74408F, L#	6.30	5.25	4.20
Programmable Modulo-N decade counter	50/35•	250	MC74416P#	**	**	**	MC74416L#	**	**	**
	50/35•	250	MC74417P	**	**	**	MC74417L	**	**	**
Programmable Modulo-N hexadecimal counter	50/35•	250	MC74418P#	**	**	**	MC74418L#	**	**	**
	50/35•	250	MC74419P	**	**	**	MC74419L	**	**	**
Counter latch decoder	40 MHz§	450	MC74450P#	**	**	**	MC74450L#	**	**	**
Dual decade counter	40 MHz▴	350	MC74452P	10.46	9.55	7.64	MC74452F, L	13.73	11.44	9.15
Dual hexadecimal counter	40 MHz▴	350	MC74453P	10.46	9.55	7.64	MC74453F, L	13.73	11.44	9.15
Dual decade up/down counter	40	600	MC74454P	15.08	12.56	10.05	MC74454L	21.54	17.95	14.36
Dual binary up/down counter	40	600	MC74455P	15.08	12.56	10.05	MC74455F, L	21.54	17.95	14.36
NBCD adder	30	300	MC74456P	9.23	7.69	6.15	MC74456F, L	12.38	10.31	8.25
Bus transfer switch	8/25■	250	MC74460P	4.70	3.95	3.15	MC74460F, L	6.15	5.10	4.10

*2 logic levels/3 logic levels. †Add delay/carry delay. ‡Write mode/sense mode. §f_{tog}. #MC744XX is exact replacement for MC40XX. •Clock to Q3/Clock to bus. ▴Frequency. ■D to B/B to Q. **Prices on request.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ MC5400 SERIES

Same as MC7400 Series (on preceding page) except: Temperature −55° C to +125° C; available in **F** and **L** suffix packages.

Motorola Type	Net Each, Lots of 1-24	25-99	100-999
MC5400–2F, L	$ 3.10	$ 2.55	$ 2.05
MC5403L	3.10	2.55	2.05
MC5404F, L	3.70	3.10	2.45
MC5405L	3.70	3.10	2.45
MC5406	9.90	8.25	6.60
MC5407L	9.90	8.25	6.60
MC5408, 9L	3.15	2.60	2.10
MC5410F, L	3.10	2.55	2.05
MC5416, 7L	8.35	6.95	5.55
MC5420F, L	3.10	2.55	2.05
MC5426L	3.70	3.05	2.45
MC5430F, L	3.10	2.55	2.05
MC5437F, 8F, L	7.50	6.25	5.00
MC5440F, L	3.10	2.55	2.05
MC5441AL	16.90	14.10	11.25
MC5442L	13.20	11.00	8.80
MC5443, 4L	18.45	15.35	12.30
MC5445L	23.95	19.95	15.95
MC5446L	19.65	16.40	13.10
MC5447L	18.45	15.35	12.30
MC5448L	15.35	12.80	10.25
MC5449F	14.75	12.30	9.85
MC5450–4F, L	$ 3.10	$ 2.55	$ 2.05
MC5460F, L	3.10	2.55	2.05
MC5470L	4.60	3.85	3.05
MC5472F	4.30	3.60	2.85
MC5473F, L	6.15	5.10	4.10
MC5475L	10.75	8.95	7.15
MC5476L	6.75	5.65	4.50
MC5479F	6.15	5.10	4.10
MC5480L	8.30	6.90	5.50
MC15482F, L	12.30	10.25	8.20
MC25482F, L	12.30	10.25	8.20
MC5483L	19.35	16.15	12.90
MC5484L	**	**	**
MC5490F, L	12.00	10.00	8.00
MC5491AL	16.90	14.10	11.25
MC5492, 3F, L	12.00	10.00	8.00
MC5494L	11.70	9.75	7.80
MC5495F, L	13.50	11.25	9.00
MC5496F, L	16.30	13.60	10.85
MC54100F	26.85	20.38	17.90
MC54107F, L	6.15	5.10	4.10
MC54121F, L	6.15	5.10	4.10
MC54145L	$13.80	$11.50	$ 9.20
MC54150L	14.50	12.10	9.70
MC54145L	13.50	11.25	9.00
MC54152, 3F, L	13.50	11.25	9.00
MC54155, 6F, L	15.08	12.56	10.05
MC54157F, L	7.35	6.13	4.90
MC54164AF, L	19.95	16.63	13.30
MC54180L	19.15	15.95	12.75
MC54181F, L	42.75	35.63	28.50
MC54182F, L	17.85	14.88	11.90
MC54192F, L	25.65	21.38	17.10
MC54193F, L	25.65	21.38	17.10
MC54406F, L	**	**	**
MC54408F, L	10.75	8.95	7.15
MC54416*, 7L	**	**	**
MC54418*, 9L	**	**	**
MC54450L*	**	**	**
MC54452F, L	23.40	19.50	15.60
MC54453F, L	23.40	19.50	15.60
MC54454, 5F, L	38.78	32.31	25.85
MC54456F, L	22.13	18.44	14.75
MC54460F, L	12.10	10.10	8.05

*MC544XX is exact replacement for MC43XX. **Prices on request.

MTTL I™ MC400 SERIES

Transistor-transistor logic designed for general purpose digital applications. $V_{CC}=5.0$ V; $T_A=25°$ C. Temperature 0° C to +75° C. **F** suffix (MC400**F**) denotes flat ceramic package (Case 607, TO-86), **L** suffix (MC400**L**) denotes dual inline ceramic package (Case 632, TO-116), **P** suffix (MC400**P**) denotes dual inline plastic package (Case 646, TO-116). Loading factor, 12 each output, MC400–MC429; 6 each output MC450–MC479 except as otherwise noted.

Function	Typical t_{pd} nsec	Typical P_D mW	Motorola Type	SUFFIX F Net Each, Lots of 1-24	SUFFIX F 25-99	SUFFIX F 100-999	SUFFIX L Net Each, Lots of 1-24	SUFFIX L 25-99	SUFFIX L 100-999	SUFFIX P Net Each, Lots of 1-24	SUFFIX P 25-99	SUFFIX P 100-999
Dual 4-input NAND gate	10	30	MC400 MC450	$4.25 3.50	$3.40 2.80	$2.85 2.35	$4.05 3.20	$3.25 2.60	$2.70 2.15	$2.25 1.80	$1.90 1.55	$1.75 1.40
Expandable 4-wide 2-2-2-3-input AND-OR-INVERT gate	12	30	MC401 MC451	4.25 3.50	3.40 2.80	2.85 2.35	4.40 3.60	3.55 2.90	2.95 2.40	2.25 2.00	1.90 1.70	1.75 1.55
8-input NAND gate	12	15	MC402 MC452	4.25 3.50	3.40 2.80	2.85 2.35	4.05 3.20	3.25 2.60	2.70 2.15	2.25 1.80	1.90 1.55	1.75 1.40
2-wide 3-input AND-OR-INVERT gate with gated complement	11	35	MC403 MC453	4.25 3.50	3.40 2.80	2.85 2.35	4.05 3.20	3.25 2.60	2.70 2.15	2.25 1.80	1.90 1.55	1.75 1.40
Expandable 3-wide 3-input AND-OR-INVERT gate	12	25	MC404 MC454	4.25 3.50	3.40 2.80	2.85 2.35	4.40 3.60	3.55 2.90	2.95 2.40	2.25 1.80	1.90 1.55	1.75 1.40
Expandable 2-wide 4-input AND-OR-INVERT gate	12	20	MC405 MC455	4.25 3.50	3.40 2.80	2.85 2.35	4.40 3.60	3.55 2.90	2.95 2.40	2.25 1.80	1.90 1.55	1.75 1.40
Expandable 8-input NAND gate	18	15	MC406 MC456	4.25 3.50	3.40 2.80	2.85 2.35	4.40 3.60	3.55 2.90	2.95 2.40	2.25 1.80	1.90 1.55	1.75 1.40
Line driver	25*	60	MC407 MC457	4.85 4.10	3.90 3.30	3.25 2.75	4.40 3.60	3.55 2.90	2.95 2.40	2.45 1.80	2.10 1.55	1.90 1.40
Quad 2-input NAND gate	10	60	MC408 MC458	4.25 3.50	3.40 2.80	2.85 2.35	4.05 3.20	3.25 2.60	2.70 2.15	2.25 1.80	1.90 1.55	1.70 1.40
4-wide 3-2-2-3-input expander for AND-OR-INVERT gate	....	.....	MC409 MC459	3.05 3.05	2.45 2.45	2.05 2.05	2.75 2.75	2.20 2.20	1.85 1.85	1.60 1.60	1.37 1.37	1.25 1.25
Dual 4-input expander for AND-OR-INVERT gate	....	.....	MC410 MC460	3.05 3.05	2.45 2.45	2.05 2.05	2.75 2.75	2.20 2.20	1.85 1.85	1.60 1.60	1.37 1.37	1.25 1.25
Dual 4-input expander for NAND gate	....	.....	MC411 MC461	3.05 3.05	2.45 2.45	2.05 2.05	2.75 2.75	2.20 2.20	1.85 1.85	1.60 1.60	1.37 1.37	1.25 1.25
Triple 3-input NAND gate	10	45	MC412 MC462	4.25 3.50	3.40 2.80	2.85 2.35	4.05 3.20	3.25 2.60	2.70 2.15	2.25 1.80	1.90 1.55	1.75 1.40
R-S flip-flop	20/15†	30	MC413 MC463	4.85 4.10	3.90 3.30	3.25 2.75	4.40 3.60	3.55 2.90	2.95 2.40	2.45 2.00	2.10 1.70	1.90 1.55
Gated R-S flip-flop	20/7.5†	30	MC414 MC464	4.85 4.10	3.90 3.30	3.25 2.75	4.40 3.60	3.55 2.90	2.95 2.40	2.45 2.00	2.10 1.70	1.90 1.55
AND J-K flip-flop	13/25†	40	MC415 MC465	5.70 4.80	4.55 3.85	3.80 3.20	6.45 5.15	5.15 4.15	4.30 3.45	3.20 2.60	2.70 2.20	2.45 2.00
OR J-K flip-flop	13/25†	50	MC416 MC466	5.70 4.80	4.55 3.85	3.80 3.20	6.45 5.15	5.15 4.15	4.30 3.45	3.20 2.60	2.70 2.20	2.45 2.00
Triple 2-input buss driver	50/15†	54	MC419 MC469	4.85 4.10	3.90 3.30	3.25 2.75	4.85 4.10	3.90 3.30	3.25 2.75	2.45 2.00	2.10 1.70	1.90 1.55
Expandable dual 2-wide 2-input	12	40	MC420 MC470	4.25 3.50	3.40 2.80	2.85 2.35	4.95 3.90	3.95 3.10	3.30 2.60	2.45 2.00	2.10 1.70	1.90 1.55
AC coupled R-S flip-flop	18	30	MC421 MC471	5.90 4.85	4.75 3.90	3.95 3.25	5.30 4.25	4.25 3.40	3.55 2.85	2.90 2.40	2.45 2.05	2.25 1.85
Dual type D flip-flop	16	84	MC422 MC472	8.75 7.35	7.00 5.90	5.85 4.90	8.75 7.35	7.00 5.90	5.85 4.90	4.40 3.65	3.75 3.10	3.40 2.80
Dual J-K flip-flop—separate clock	10/12†	110	MC423‡ MC473§	8.75 7.35	7.00 5.90	5.85 4.90	8.75 7.35	7.00 5.90	5.85 4.90	4.40 3.65	3.75 3.10	3.40 2.80
Dual J-K flip-flop—common clock	10/12†	110	MC424‡ MC474§	8.75 7.35	7.00 5.90	5.85 4.90	8.75 7.35	7.00 5.90	5.85 4.90	4.40 3.65	3.75 3.10	3.40 2.80
Dual 3-input pulse shaper/ delay AND gate	15	60	MC426‡ MC476§	4.85 4.10	3.90 3.30	3.25 2.75	4.85 4.10	3.90 3.30	3.25 2.75	2.75 2.20	2.30 1.85	2.10 1.70
OR expandable dual 4-input AND gate	10	38	MC427 MC477	4.25 3.50	3.40 2.80	2.85 2.35	4.25 3.50	3.40 2.80	2.85 2.35	2.25 1.80	1.90 1.55	1.75 1.40
Dual 2-wide 2-3-input OR expander	....	15	MC428 MC478	...... 3.50	...... 2.80	...... 2.35	...... 3.90	...... 3.25	..... 2.60	1.70 1.70	1.44 1.44	1.30 1.30
Hex inverter	10	90	MC429 MC479	3.85 3.10	3.20 2.55	2.55 2.05	3.60 2.85	3.00 2.40	2.40 1.90	3.15 2.40	2.65 2.00	2.10 1.60

*At 1000 pF load. †t_{pd+}/t_{pd-}. ‡Loading factor = 13 each output. §Loading factor = 7 each output.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL I™ MC500 SERIES

Same as MC400 Series on preceding page, except: Temperature −55° C to +125° C; loading factor, 15 each output MC500–MC529; 7 each output MC550–MC579 except as otherwise noted. Available in **F** suffix (Case 607, TO-86) and **L** suffix (Case 632, TO-116) only.

Motorola Type	Net Each, Lots of			Motorola Type	Net Each Lots of			Motorola Type	Net Each, Lots of		
	1-24	25-99	100-999		1-24	25-99	100-999		1-24	25-99	100-999
MC500F, L	$6.45	$5.15	$4.30	MC520F, L	$ 6.45	$ 5.15	$4.30	MC559F, L	$ 4.55	$3.65	$3.05
MC501F, L	6.45	5.15	4.30	MC521F, L	7.70	6.20	5.15	MC560F, L	4.55	3.65	3.05
MC502F, L	6.45	5.15	4.30	MC522F, L	13.40	10.75	8.95	MC561F, L	4.55	3.65	3.05
MC503F, L	6.45	5.15	4.30	MC523F, L*	13.40	10.75	8.95	MC562F, L	5.40	4.30	3.60
MC504F, L	6.45	5.15	4.30	MC524F, L*	13.40	10.75	8.95	MC563F, L	6.20	5.00	4.15
MC505F, L	6.45	5.15	4.30	MC526F, L*	7.40	5.95	4.95	MC564F, L	6.20	5.00	4.15
MC506F, L	6.45	5.15	4.30	MC527F, L	6.45	5.15	4.30	MC565F, L	7.35	5.90	4.90
MC507F, L	7.40	5.95	4.95	MC528F, L	6.45	5.15	4.30	MC566F, L	7.35	5.90	4.90
MC508F, L	6.45	5.15	4.30	MC529F, L	6.10	5.05	4.05	MC569F, L	6.20	5.00	4.15
MC509F, L	4.55	3.65	3.05	MC550F, L	5.40	4.30	3.60	MC570F, L	5.40	4.30	3.60
MC510F, L	4.55	3.65	3.05	MC551F, L	5.40	4.30	3.60	MC571F, L	6.50	5.20	4.35
MC511F, L	4.55	3.65	3.05	MC552F, L	5.40	4.30	3.60	MC572F, L	11.55	8.95	7.45
MC512F, L	6.45	5.15	4.30	MC553F, L	5.40	4.30	3.60	MC573F, L†	11.55	8.95	7.45
MC513F, L	7.40	5.95	4.95	MC554F, L	5.40	4.30	3.60	MC574F, L†	11.55	8.95	7.45
MC514F, L	7.40	5.95	4.95	MC555F, L	5.40	4.30	3.60	MC576F, L†	6.20	5.00	4.15
MC515F, L	8.75	7.00	5.85	MC556F, L	5.40	4.30	3.60	MC577F, L	5.40	4.30	3.60
MC516F, L	8.75	7.00	5.85	MC557F, L	6.20	5.00	4.15	MC578F, L	5.40	4.30	3.60
MC519F, L	7.40	5.95	4.95	MC558F, L	5.40	4.30	3.60	MC579F, L	4.90	4.05	3.25

MTTL II™ MC2000 AND MC2100 SERIES

MC2100 Series −55° C to +125° C; fan out = 11 for MC2100–MC2128, 6 for MC2150–MC2178. MC2000 Series 0° C to +75° C; fan out = 9, MC2000–MC2028; 5, MC2050–MC2078. $V_{CC} = 5.0$ volts, $T_A = 25°$ C. **L** suffix ceramic dual inline pkg. (Case 632, TO-116) available at same price for MC2100 Series (specify MC2100**L**); also available for MC2000 Series; prices on request.

Function	Typical		Case 607 (−55° C to +125° C)				Case 607 (0° C to +75° C)			
	t_{pd} nsec	P_D mW	Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
				1-24	25-99	100-999		1-24	25-99	100-999
Expandable 2-wide 4-input AND-OR-INVERT gate	7.0	27	MC2100F MC2150F	$ 7.20 5.90	$5.75 4.75	$4.80 3.95	MC2000F MC2050F	$4.70 3.95	$3.80 3.20	$3.15 2.65
Quad 2-input NAND gate	6.0	88	MC2101F MC2511F	7.20 5.90	5.75 4.75	4.80 3.95	MC2001F MC2051F	4.70 3.95	3.80 3.20	3.15 2.65
4-wide 3-2-2-3-input expander for AND-OR-INVERT gates	....	28	MC2102F MC2152F	4.55 4.55	3.65 3.65	3.05 3.05	MC2002F MC2052F	3.05 3.05	2.45 2.45	2.05 2.05
Dual 4-input NAND gate	6.0	44	MC2103F MC2153F	7.20 5.90	5.75 4.75	4.80 3.95	MC2003F MC2053F	4.70 3.95	3.80 3.20	3.15 2.65
Expandable 4-wide 2-2-2-3-input AND-OR-INVERT gate	7.0	36	MC2104F MC2154F	7.20 5.90	5.75 4.75	4.80 3.95	MC2004F MC2054F	4.70 3.95	3.80 3.20	3.15 2.65
Single 8-input NAND gate	8.0	22	MC2105F MC2155F	7.20 5.90	5.75 4.75	4.80 3.95	MC2005F MC2055F	4.70 3.95	3.80 3.20	3.15 2.65
Dual 4-input expander for AND-OR-INVERT gate	....	14	MC2106F MC2156F	4.55 4.55	3.65 3.65	3.05 3.05	MC2006F MC2056F	3.05 3.05	2.45 2.45	2.05 2.05
Triple 3-input NAND gate	6.0	66	MC2107F MC2157F	7.20 5.90	5.75 4.75	4.80 3.95	MC2007F MC2057F	4.70 3.95	3.80 3.20	3.15 2.65
Expandable 8-input NAND gate	11	22	MC2111F MC2161F	7.20 5.90	5.75 4.75	4.80 3.95	MC2011F MC2061F	4.70 3.95	3.80 3.20	3.15 2.65
Expandable 3-wide 3-input AND-OR-INVERT gate	6.0	39	MC2112F MC2162F	7.20 5.90	5.75 4.75	4.80 3.95	MC2012F MC2062F	4.70 3.95	3.80 3.20	3.15 2.65
Expandable dual 2-wide 2-input AND-OR-INVERT gate	7.0	58	MC2113F MC2163F	7.20 5.90	5.75 4.75	4.80 3.95	MC2013F MC2063F	4.70 3.95	3.80 3.20	3.15 2.65
Quad 2-input lamp/line driver	20	105	MC2165F	7.95	6.60	5.30	MC2065F	4.35	3.60	2.90
Hex inverter	6.0	132	MC2116F MC2166F	7.00 5.40	5.80 4.50	4.65 3.60	MC2016F MC2066F	4.15 3.15	3.45 2.65	2.75 2.10
Dual J-K flip-flop—separate clock	f= 70 MHz	110	MC2123F MC2173F	14.85 12.35	11.90 9.90	9.90 8.25	MC2023F MC2073F	9.80 8.15	7.85 6.55	6.55 5.45
Dual J-K flip-flop—common clock	f= 70 MHz	110	MC2124F MC2174F	14.85 12.35	11.90 9.90	9.90 8.25	MC2024F MC2074F	9.80 8.15	7.85 6.55	6.55 5.45
AND J-K flip-flop	f= 50 MHz	50	MC2125F MC2175F	12.30 10.25	9.85 8.20	8.20 6.85	MC2025F MC2075F	8.15 6.80	6.55 5.45	5.45 4.55
OR J-K flip-flop	f= 50 MHz	60	MC2126F MC2176F	12.30 10.25	9.85 8.20	8.20 6.85	MC2026F MC2076F	8.15 6.80	6.55 5.45	5.45 4.55
OR J-K flip-flop	f= 35 MHz	60	MC2128F MC2178F	12.30 10.25	9.85 8.20	8.20 6.85	MC2028F MC2078F	8.15 6.80	6.55 5.45	5.45 4.55

MC2000P Series same as Series MC2000F except plastic dual inline pkg. (Case 646, TO-116).

Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
	1-99	100-999	1000-4999		1-99	100-999	1000-4999		1-99	100-999	1000-4999		1-99	100-999	1000-4999
MC2000P	$2.60	$2.20	$2.00	MC2013P	$2.85	$2.40	$2.20	MC2052P	$2.00	$1.70	$1.55	MC2066P	$2.70	$2.25	$1.80
MC2001P	2.60	2.20	2.00	MC2016P	3.20	2.75	2.20	MC2053P	2.20	1.85	1.70	MC2073P	4.30	3.60	3.30
MC2002P	2.00	1.70	1.55	MC2023P	5.15	4.35	3.95	MC2054P	2.20	1.85	1.70	MC2074P	4.30	3.60	3.30
MC2003P	2.60	2.20	2.00	MC2024P	5.15	4.35	3.95	MC2055P	2.20	1.85	1.70	MC2075P	2.90	2.50	2.25
MC2004P	2.60	2.20	2.00	MC2025P	3.65	3.10	2.80	MC2056P	2.00	1.70	1.55	MC2076P	2.90	2.50	2.25
MC2005P	2.60	2.20	2.00	MC2026P	3.65	3.10	2.80	MC2057P	2.20	1.85	1.70	MC2078P	2.90	2.50	2.25
MC2006P	2.00	1.70	1.55	MC2028P	3.65	3.10	2.80	MC2061P	2.20	1.85	1.70				
MC2007P	2.60	2.20	2.00	MC2050P	2.20	1.85	1.70	MC2063P	2.40	2.05	1.85				
MC2011P	2.60	2.20	2.00	MC2051P	2.20	1.85	1.70	MC2065P	2.20	1.85	1.70				

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MOTOROLA Semiconductors DIGITAL INTEGRATED CIRCUITS

MTTL III™ MC3000 AND MC3100 SERIES

Designed for general purpose digital applications. High operating speed (30–50 MHz clock rate), good external noise immunity, high fan-out and capability of driving lines up to 600 pF capacitance. Temperature range 0° C to +75° C (MC3000 Series), −55° C to +125° C (MC3100 Series). $V_{CC}=5.0$ V; $T_A=25°$ C. **L** suffix denotes dual inline ceramic pkg. (Case 632, TO-116). **F** flat ceramic pkg. (Case 607, TO-86) and **P** dual inline plastic pkg. (Case 646, TO-116) also available.

Function	Typical t_{pd} ns	Typical P_D mW	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100 Up
Quad 2-input NAND gate	6.0	88	**MC3000L**	**$2.00**	**$1.65**	**$1.32**	**MC3100L**	**$3.40**	**$2.80**	**$2.25**
Quad 2-input AND gate	9.0	112	**MC3001L**	**2.15**	**1.80**	**1.44**	**MC3101L**	**3.70**	**3.05**	**2.45**
Quad 2-input NOR gate	6.0	122	**MC3002L**	**2.00**	**1.65**	**1.32**	**MC3102L**	**3.40**	**2.80**	**2.25**
Quad 2-input OR gate	9.0	150	**MC3003L**	**2.15**	**1.80**	**1.44**	**MC3103L**	**3.70**	**3.05**	**2.45**
Quad 2-input NAND gate (open collector)	8.0	88	**MC3004L**	**2.00**	**1.65**	**1.32**	**MC3104L**	**3.40**	**2.80**	**2.25**
Triple 3-input NAND gate	6.0	66	**MC3005L**	**2.00**	**1.65**	**1.32**	**MC3105L**	**3.40**	**2.80**	**2.25**
Triple 3-input AND gate	9.0	84	**MC3006L**	**2.15**	**1.80**	**1.44**	**MC3106L**	**3.70**	**3.05**	**2.45**
Triple 3-input NAND gate (open collector)	8.0	66	**MC3007L**	**2.00**	**1.65**	**1.32**	**MC3107L**	**3.40**	**2.80**	**2.25**
Hex inverter	6.0	140	**MC3008L**	**2.35**	**1.95**	**1.55**	**MC3108L**	**4.00**	**3.30**	**2.65**
Hex inverter	8.0	90	**MC3009L**	**2.35**	**1.95**	**1.55**	**MC3109L**	**4.00**	**3.30**	**2.65**
Dual 4-input NAND gate	6.0	44	**MC3010L**	**2.00**	**1.65**	**1.32**	**MC3110L**	**3.40**	**2.80**	**2.25**
Dual 4-input AND gate	9.0	56	**MC3011L**	**2.15**	**1.80**	**1.44**	**MC3111L**	**3.70**	**3.05**	**2.45**
Dual 4-input NAND gate (open collector)	8.0	44	**MC3012L**	**2.00**	**1.65**	**1.32**	**MC3112L**	**3.40**	**2.80**	**2.25**
8-input NAND gate	8.0	22	**MC3015L**	**2.00**	**1.65**	**1.32**	**MC3115L**	**3.40**	**2.80**	**2.25**
8-input NAND gate	8.0	22	**MC3016L**	**1.95**	**1.65**	**1.32**	**MC3116L**	**3.40**	**2.80**	**2.25**
4-wide 3-2-2-3-input expander for AND-OR-INVERT gates	*	40	**MC3018L**	**2.15**	**1.80**	**1.44**	**MC3118L**	**3.70**	**3.05**	**2.45**
Triple 3-input expander for AND-OR gates	*	25	**MC3019L**	**2.15**	**1.80**	**1.44**	**MC3119L**	**3.70**	**3.05**	**2.45**
Expandable dual 2-wide 2-input AND-OR-INVERT gate	6.0	62.5	**MC3020L**	**2.00**	**1.65**	**1.32**	**MC3120L**	**3.40**	**2.80**	**2.25**
Quad 2-input exclusive-OR gate	14.0	100	**MC3021L**	**3.25**	**2.70**	**2.15**	**MC3121L**	**5.55**	**4.60**	**3.70**
Quad 2-input exclusive-NOR gate	14.0	85	**MC3022L**	**3.25**	**2.70**	**2.15**	**MC3122L**	**5.55**	**4.60**	**3.70**
Dual 2-wide 2-input AND-OR-INVERT gate	6.0	62.5	**MC3023L**	**2.00**	**1.65**	**1.32**	**MC3123L**	**3.40**	**2.80**	**2.25**
Dual 4-input NAND buffer gate	6.0	90	**MC3024L**	**2.15**	**1.80**	**1.44**	**MC3124L**	**3.70**	**3.05**	**2.45**
Dual 4-input NAND power gate	6.0	70	**MC3025L**	**2.00**	**1.65**	**1.32**	**MC3125L**	**3.40**	**2.80**	**2.25**
Dual 4-input AND power gate	9.0	90	**MC3026L**	**2.15**	**1.80**	**1.44**	**MC3126L**	**3.70**	**3.05**	**2.45**
Dual 3-input 3-output AND series terminated line driver	9.0	56	**MC3028L**	**2.15**	**1.80**	**1.44**	**MC3128L**	**3.70**	**3.05**	**2.45**
Dual 3-input 3-output NAND series terminated line driver	6.0	44	**MC3029L**	**2.15**	**1.80**	**1.44**	**MC3129L**	**3.70**	**3.05**	**2.45**
Dual 4-input expander for AND-OR-INVERT gates	†	15	**MC3030L**	**2.00**	**1.65**	**1.32**	**MC3130L**	**3.40**	**2.80**	**2.25**
Expandable 4-wide 2-2-2-3-input AND-OR gate	10.0	87.5	**MC3031L**	**2.00**	**1.65**	**1.32**	**MC3131L**	**3.40**	**2.80**	**2.25**
Expandable 4-wide 2-2-2-3-input AND-OR-INVERT gate	7.0	40	**MC3032L**	**2.00**	**1.65**	**1.32**	**MC3132L**	**3.40**	**2.80**	**2.25**
4-wide 2-2-2-3-input AND-OR-INVERT gate	7.0	40	**MC3033L**	**2.00**	**1.65**	**1.32**	**MC3133L**	**3.40**	**2.80**	**2.25**
Expandable 2-wide 4-input AND-OR-INVERT gate	7.0	30	**MC3034L**	**2.00**	**1.65**	**1.32**	**MC3134L**	**3.40**	**2.80**	**2.25**
AND J-K flip-flop	‡	80	**MC3050L**	**2.85**	**2.40**	**1.90**	**MC3150L**	**4.90**	**4.10**	**3.30**
AND input J-K flip-flop	§	50	**MC3051L**	**2.70**	**2.25**	**1.80**	**MC3151L**	**4.90**	**4.10**	**3.30**
AND input JJ-KK flip-flop	‡	75	**MC3052L**	**2.85**	**2.40**	**1.90**	**MC3152L**	**4.90**	**4.10**	**3.30**
Double edge-triggered master-slave type D flip-flop	......	100	**MC3053L**	**3.05**	**2.55**	**2.05**	**MC3153L**	**5.55**	**4.60**	**3.70**
OR input J-K flip-flop	#	95	**MC3054L**	**2.90**	**2.40**	**1.90**	**MC3154L**	**5.25**	**4.35**	**3.50**
AND input J-K flip-flop	#	80	**MC3055L**	**2.70**	**2.25**	**1.80**	**MC3155L**	**4.60**	**3.85**	**3.05**
Dual type D flip-flop	#	120	**MC3060L**	**3.95**	**3.30**	**2.65**	**MC3160L**	**6.75**	**5.65**	**4.50**
Dual J-K flip-flop	§	100	**MC3061L**	**4.30**	**3.60**	**2.90**	**MC3161L**	**7.35**	**6.15**	**4.90**
Dual J-K flip-flop	§	100	**MC3062L**	**4.50**	**3.75**	**3.00**	**MC3162L**	**7.65**	**6.40**	**5.10**
Dual J-K flip-flop	#	176	**MC3063L**	**4.50**	**3.75**	**3.00**	**MC6163L**	**7.65**	**6.40**	**5.10**
Edge-triggered dual type D flip-flop	16	84	**MC74H74AL**	**5.85**	**4.88**	**3.90**	**MC54H74AL**	**10.65**	**8.88**	**7.10**

*$\Delta t_{pdl}=0.4$ ns; $\Delta t_{pd0}=0.05$ ns. †$\Delta t_{pd}=1.0$ ns. ‡f = 40 MHz. §f = 50 MHz. #f = 30 MHz.

MTTL™ COMPLEX FUNCTIONS

Designed for digital applications in the medium to high-speed range. Provide significant reduction in package count and increased logic per function over devices in the basic MTTL and MDTL™ families. Temperature, 0° C to +75° C. $V_{CC}=5.0$ V; $T_A=25°$ C. **F** suffix denotes flat ceramic package, **L** suffix denotes dual inline ceramic package and **P** suffix denotes dual inline plastic package.

Function	Typical t_{pd} ns	Typical P_D mW	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 646 Motorola Type	Net Each, Lots of 1-99	100-999	1000-4999
Dual 4-channel data selector	18*	150	**MC4000F, L**	**$5.40**	**$4.50**	**$3.60**	**MC4000P**	**$3.25**	**$2.70**	**$2.15**
BCD-to-binary/binary-to-BCD number converter	<45⁑	300	....	......	......	......	**MC4001P▪**	**6.10**	**4.05**	**3.60**
Dual data distributor	10.5	175	**MC4002F, L**	**7.05**	**5.85**	**4.70**	**MC4002P**	**3.00**	**2.50**	**2.00**
16-bit scratch pad memory cell	25†	250	**MC4004F, L**	**7.00**	**5.80**	**4.65**	**MC4004P**	**3.65**	**3.10**	**2.80**
16-bit scratch pad memory cell	25†	250	**MC4005F, L**	**6.30**	**5.25**	**4.20**	**MC4005P**	**2.90**	**2.50**	**2.25**
Binary to one-of-eight line decoder	14	100	**MC4006F, L♦**	**7.05**	**5.85**	**4.70**	**MC4006P♦**	**3.00**	**2.50**	**2.00**
Dual binary to one-of-four line decoder	14	125	**MC4007L▴**	**7.00**	**5.90**	**4.70**	**MC4007P▪**	**3.40**	**2.85**	**2.30**
8-bit parity tree	15–30	150	**MC4008F, L♦**	**6.30**	**5.25**	**4.20**	**MC4008P♦**	**4.50**	**3.75**	**3.00**
Dual 4-bit parity tree	9.5–22	125	**MC4010F, L**	**6.30**	**5.25**	**4.20**	**MC4010P**	**4.50**	**3.75**	**3.00**
4-bit shift register	22/bit	180	**MC4012F, L**	**7.95**	**6.60**	**5.30**	**MC4012P**	**3.60**	**3.00**	**2.40**
Quad type D flip-flop	16	190	**MC4015L▴**	**7.00**	**5.85**	**4.70**	**MC4015P▪**	**3.25**	**2.70**	**2.15**
Programmable Modulo-N decade counter	50‡	250	**MC4016L▴♦**	**9.90**	**8.25**	**6.60**	**MC4016P▪**	**6.50**	**5.50**	**5.00**
MC4016 except hexadecimal counter	50‡	250	**MC4018L▴♦**	**9.90**	**8.25**	**6.60**	**MC4018P▪♦**	**6.50**	**5.50**	**5.00**
Dual 4-bit comparator—open collector	20	250	....	......	......	......	**MC4021P▪**	**4.80**	**4.00**	**3.20**
Dual 4-bit comparator	20	250	**MC4022L▴**	**9.68**	**8.06**	**6.45**	**MC4022P▪**	**4.80**	**4.00**	**3.20**
4-bit universal counter	16/bit	200	**MC4023F, L**	**7.75**	**6.45**	**5.15**	**MC4023P**	**4.20**	**3.50**	**2.80**
Dual voltage controlled multivibrator	§	150	**MC4024F**	**4.80**	**4.00**	**3.20**	**MC4024P**	**2.60**	**2.20**	**2.00**
Full adder (12 fan out)	25/13#	90	**MC4026F, L**	**5.40**	**4.50**	**3.60**	**MC4026P**	**2.90**	**2.50**	**2.25**
Full adder (6 fan out)	25/13#	90	**MC4027F, L**	**4.35**	**3.60**	**2.90**	**MC4027P**	**2.25**	**1.90**	**1.75**
Adder (dependent carry) 12 fan out	25/13#	125	**MC4028F, L**	**6.30**	**5.25**	**4.20**	**MC4028P**	**3.25**	**2.75**	**2.50**
Adder (dependent carry) 6 fan out	25/13#	125	**MC4029F, L**	**4.90**	**4.05**	**3.25**	**MC4029P**	**2.55**	**2.15**	**1.95**
Adder (independent carry) 12 fan out	25/13#	125	**MC4030F, L**	**6.30**	**5.25**	**4.20**	**MC4030P**	**3.25**	**2.75**	**2.50**
Adder (independent carry) 6 fan out	25/13#	125	**MC4031F, L**	**4.90**	**4.05**	**3.25**	**MC4031P**	**2.55**	**2.15**	**1.95**
Carry decoder	•	20	**MC4032F, L**	**4.35**	**3.60**	**2.90**	**MC4032P**	**2.25**	**1.90**	**1.75**
Quad latch (open collector)	25	140	**MC4035F, L**	**5.95**	**4.95**	**3.95**	**MC4035P**	**3.10**	**2.65**	**2.40**
Quad latch	25	150	**MC4037F, L**	**5.95**	**4.95**	**3.95**	**MC4037P**	**3.10**	**2.65**	**2.40**
Inverting/non-inverting one-of-eight decoder	<45⁑	240	....	......	......	......	**MC4038P▪**	**6.10**	**4.05**	**3.60**

*Control line; data line = 11 ns. †Write mode; sense mode = 15 ns. ‡Clock to Q3; clock to bus = 35 ns. §$f_{max}=30$ MHz. #Add delay/carry delay. •$\Delta t_{pd}=4.0$/decoder. ▴Case 620. ▪Case 648. ♦MC74XX is an exact replacement for MC40XX. ⁑Address time. **MTTL COMPLEX FUNCTIONS CONTINUED ON FOLLOWING PAGE.**

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ COMPLEX FUNCTIONS (CONTINUED)

Function	Typical t_{pd} ns	Typical P_D mW	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 646 Motorola Type	Net Each, Lots of 1-99	100-999	1000-4999
Seven segment character generator	Address time <45 ns	240					MC4039P*	$ 6.10	$4.05	$3.60
Binary to two-of-eight decoder		200					MC4040P*	6.10	4.05	3.60
Single-error hamming code detector and generator		240					MC4041P*	6.10	4.05	3.60
Quad predriver	15	120	MC4042F, L	$5.60	$4.00	$3.20	MC4042P	1.68	1.40	1.12
Dual line selector	20	70	MC4043F, L	5.85	4.88	3.90	MC4043P	2.20	1.85	1.47
Phase frequency detector	9.0	85	MC4044F	4.80	4.00	3.20	MC4044P	2.60	2.20	2.00
			MC4044L	3.95	3.30	2.65				
Non-inverting one-of-eight decoder	50†	240					MC4048P*	6.50	4.05	3.60
Counter-latch decoder	40 MHz‡	450	MC4050F, L§#	17.55	14.60	11.70	MC4050P*#	10.60	9.00	8.15
Counter-latch decoder	35 MHz‡	450	MC4051F, L§	17.55	14.60	11.70				
Counter-latch decoder	35 MHz‡	450	MC4051P*	13.50	11.25	9.00				
Dual majority logic gate	Z = 20 Z = 11	75	MC4062F, L	3.38	2.81	2.25	MC4062P	2.25	1.50	1.20

*Case 648. †Address time. ‡f_{tog}. §Suffix F, Case 650; Suffix L, Case 620. #MC744XX is an exact replacement for MC40XX.

Same as above except temperature range −55° C to +125° C. In flat ceramic package (suffix F) Case 607 or dual inline ceramic (suffix L) Case 632.

Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
MC4300F, L	$ 9.20	$7.70	$6.15	MC4316L*†	$18.00	$15.00	$12.00	MC4330F, L	$10.75	$8.95	$7.15
MC4304F, L	11.65	9.70	7.75	MC4318L*†	18.00	15.00	12.00	MC4331F, L	8.25	6.90	5.50
MC4305F, L	9.25	7.70	6.15	MC4324F, L	7.10	5.90	4.75	MC4332F, L	7.35	6.15	4.90
MC4306F, L*	11.95	9.95	8.00	MC4326F, L	9.20	7.70	6.15	MC4335F, L	10.15	8.45	6.75
MC4307L†	10.50	8.75	7.00	MC4327F, L	7.35	6.15	4.90	MC4337F, L	10.15	8.45	6.75
MC4308F, L*	10.75	8.95	7.15	MC4328F, L	10.75	8.95	7.15	MC4344F, L	7.10	5.90	4.75
MC4310F, L	10.75	8.95	7.15	MC4329F, L	8.25	6.90	5.50				

*MC544XX is an exact replacement for MC43XX. †Case 620.

MC8200 Series temperature −55° C to +125° C; MC7200 Series temperature 0° C to +75° C. **F** suffix denotes flat ceramic pkg. (Case 607, 650, 667), **L** suffix denotes dual inline ceramic pkg. (Case 620, 623, 632). Dual inline plastic pkg. available MC7200 Series only.

Function	Typical t_{pd} ns	Typical P_D mW	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Case 607 (F), Case 632 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Quad exclusive-OR gate	10	225	MC8241F, L	$ 9.30	$ 7.75	$ 6.20	MC7241F, L	$ 6.15	$ 5.13	$ 4.10
Quad exclusive-NOR gate with OC	18	170	MC8242F, L	9.30	7.75	6.20	MC7242F, L	6.15	5.13	4.10
Binary to one-of-eight decoder	30	75	MC8250F	18.00	15.00	12.00	MC7250F	9.75	8.13	6.50
			MC8250L	8.75	7.30	5.85	MC7250L	9.75	8.13	6.50
Binary to one-of-ten decoder	30	80	MC8251F*	18.00	15.00	12.00	MC7251F*	9.75	8.13	6.50
			MC8251L*	8.75	7.30	5.85	MC7251L*	9.75	8.13	6.50
Arithmetic logic element (ALU)	14–24	400	MC8260F, L†	34.28	28.56	22.85	MC7260F, L†	22.85	19.04	15.23
Fast carry extender	8.0–16	95	MC8261F, L	4.26	3.55	2.84	MC7261F, L	2.84	2.36	1.89
2-input 4-bit data selector	13–27	200	MC8266F, L*	9.10	7.60	6.08	MC7266F, L*	6.10	5.05	4.05
2-input 4-bit data selector with OC	13–27	200	MC8267F, L*	9.10	7.60	6.08	MC7267F, L*	6.10	5.05	4.05
4-bit shift register	25	180	MC8270F, L	9.63	8.03	6.42	MC7270F, L	6.42	5.35	4.28
4-bit shift register	25	180	MC8271F, L*	9.63	8.03	6.42	MC7271F, L*	6.42	5.35	4.28
Presettable decade counter	f_{tog} = 25 MHz	130	MC8280F, L	8.10	6.75	5.40	MC7280F, L	5.40	4.50	3.60
Presettable binary counter		130	MC8281F, L	8.10	6.75	5.40	MC7281F, L	5.40	4.50	3.60

*Suffix F, Case 650; suffix L, Case 620. †Suffix F, Case 667; suffix L, Case 623.

MC9300 Series temperature range −55° C to +125° C; MC8300 Series temperature range 0° C to +75° C. **F** suffix denotes flat ceramic package, **L** suffix denotes dual inline ceramic package.

Function	Typical t_{pd} ns	Typical P_D mW	Case 650 (F), Case 620 (L) Motorola Type	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Universal 4-bit shift register	25	300	MC9300L	$7.35	$ 6.15	$ 4.90	MC8300L	$ 4.90	$ 4.05	$ 3.25
BCD-to-decimal decoder	22	125	MC9301L	7.35	6.15	4.90	MC8301L	4.90	4.05	3.25
Dual full adder	8.0–28	110	MC9304L	7.35	6.15	4.90	MC8304L	4.90	4.05	3.25
Presettable decade up/down counter	20●	350	MC9306L▲	17.30	14.45	11.55	MC8306L▲	11.50	9.60	7.70
BCD-to-seven-segment decoder	250	165	MC9307F, L	11.82	9.85	7.88	MC8307F, L	7.88	6.56	5.25
Dual 4-bit latch	25*	325	MC9308L▲	15.35	12.80	10.25	MC3808L▲	9.00	7.50	6.00
Dual 4-channel data selector	9.0–24	150	MC9309L	5.85	4.90	3.90	MC8309L	3.70	3.05	2.45
Presettable decade counter	14–35	300	MC9310L	10.95	9.15	7.30	MC8310L	9.00	7.50	6.00
One-of-16 decoder	26†	175	MC9311L▲	15.35	12.80	10.25	MC8311L▲	9.00	7.50	6.00
8-channel data selector	9.0–24	135	MC9312L	5.85	4.90	3.90	MC8312L	3.70	3.05	2.45
Quad latch	12–25	200	MC9314F, L	5.52	4.60	3.68	MC8314F, L	3.68	3.06	2.45
Presettable 4-bit binary counter	14–35	300	MC9316L	20.00	16.65	13.30	MC8316L	7.30	6.05	4.85
8-input priority encoder	10–30	225	MC9318F, L	18.00	15.00	12.00	MC8318F, L	9.00	7.50	6.00
Quad 2-input data selector/multiplexer	40	150	MC9322F, L	7.35	6.13	4.90	MC8322F, L	3.68	3.06	2.45
5-bit comparator	40	220	MC9324F, L	17.70	14.75	11.80	MC8324F, L	8.70	7.25	5.80
Dual 8-bit shift register	‡	250	MC9328L	15.60	13.00	10.40	MC8328L	10.45	8.70	6.95
8-channel data selector/multiplexer	8.5–35	130	MC93152F, L§	13.50	11.25	9.00	MC83152F, L§	9.00	7.50	6.00
Dual 4-chan. data selector/comparator	12–22	180	MC93153F, L	13.50	11.25	9.00	MC83153F, L	9.00	7.50	6.00
Retriggerable monostable multivibrator	25	75	MC9601F, L§	4.20	3.50	2.80	MC8601F, L	2.80	2.30	1.85
Dual retriggerable resettable monostable multivibrator	25	160	MC9602L	8.10	6.75	5.40	MC8602L	5.40	4.50	3.60
64-bit random access memory	<60■	6/bit					MCM4064L#	6.95	5.95	4.95
Binary-to-BCD number converter	<50I	615					MCM4067AL♦	22.50	18.50	15.00
Binary-to-BCD number converter	<50I	615					MCM4068AL♦	22.50	18.50	15.00
Hollerith-to-ASII converter	<40I	615					MCM4069AL♦	22.50	18.50	15.00
Hollerith-to-ASII converter	<40I	615					MCM4070AL♦	22.50	18.50	15.00

*E to Q. †Max. E to Q. ‡C to Q = 22 ns (t_{PHL}), 13 ns (t_{PLH}); $\overline{MR}$ to Q = 35 ns. §Suffix F, Case 607; suffix L, Case 632. #0° C to +85° C. ●Clock to Q. ▲Case 623. ■Access time. ♦Case 690; 0° C to +70° C. IAddress time.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MTTL™ BEAM LEAD INTEGRATED CIRCUITS

Particularly useful in highly reliable systems using hybrid beam lead assembly techniques or standard flat package assembly. MCB Series in flat ceramic package (F suffix, Case 607); MCBC Series in beam lead chip. Temperature −55° C to +125° C. Fan out = 10 each output; $V_{CC} = 5.0$ V; $T_A = 25°$ C.

Function	Typical t_{pd} ns	Typical P_D mW	Motorola Type	Net Ea., Multiples of 5: 5-24	25-99	100-999	Motorola Type	Net Ea., Multiples of 5: 5-24	25-99	100-999
Quad 2-input NAND gate	10	40	MCBC5400	$3.30	$2.75	$2.20	MCB5400F	$ 5.40	$ 4.50	$ 3.60
Quad 2-input NAND gate (open collector)	35	40	MCBC5401	3.30	2.75	2.20	MCB5401F	5.40	4.50	3.60
Quad 2-input NOR gate	10	48	MCBC5402	3.90	3.25	2.60	MCB5402F	6.00	5.00	4.00
Hex inverter	13	60	MCBC5404	3.90	3.25	2.60	MCB5404F	6.75	5.65	4.50
Hex inverter (open collector)	35	60	MCBC5405	3.90	3.25	2.60	MCB5405F	6.75	5.65	4.50
Triple 3-input NAND gate	10	30	MCBC5410	3.30	2.75	2.20	MCB5410F	5.40	4.50	3.60
Dual 4-input NAND gate	10	20	MCBC5420	2.70	2.25	1.80	MCB5420F	4.60	3.80	3.05
8-input NAND gate	10	10	MCBC5430	2.70	2.25	1.80	MCB5430F	4.60	3.80	3.05
Dual 4-input NAND buffer	13*	50	MCBC5440	3.30	2.75	2.20	MCB5440F	6.25	5.20	4.15
Expandable dual 2-wide 2-input A-O-I gate	13	28	MCBC5450	3.30	2.75	2.20	MCB5450F	5.40	4.50	3.60
Dual 2-wide 2-input AND-OR-INVERT gate	13	28	MCBC5451	3.30	2.75	2.20	MCB5451F	5.40	4.50	3.60
Expandable 4-wide 2-input A-O-I gate	13	22	MCBC5453	3.30	2.75	2.20	MCB5453F	5.40	4.50	3.60
4-wide 2-input AND-OR-INVERT gate	13	22	MCBC5454	3.30	2.75	2.20	MCB5454F	5.40	4.50	3.60
Dual 4-input expander for A-O-I gate	5	8	MCBC5460	3.30	2.75	2.20	MCBC5460F	4.05	3.40	2.70
J-K flip-flop	30	40	MCBC5472	3.90	3.25	2.60	MCB5472F	7.60	6.30	5.05
Dual J-K flip-flop	30	80	MCBC5473	8.10	6.75	5.40	MCB5473F	12.45	10.40	8.30
Dual type D flip-flop	16	84	MCBC5479	8.10	6.75	5.40	MCB5479F	12.45	10.40	8.30
4-input AND driver with NOR strobe	70	20	....	....	....	....	MCB54140F	22.20	18.50	14.80

*Fan out = 30 each output.

MTTL™ DIELECTRICALLY ISOLATED INTEGRATED CIRCUITS (CASE 607)

Utilize nichrome resistors, post metallization, monometallic interconnections and very small HF transistor structures to enhance the radiation resistant qualities. Temperature range −55° C to +125° C. $V_{CC} = 5.0$ V; $T_A = 25°$ C.

Function	Typical t_{pd} nsec	Typical P_D mW	Fan Out	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Quad 2-input NAND gate	6.0	80	10	MCE54H00F	$32.25	$26.90	$21.50
Quad 2-input NAND gate (open collector output)	8.0	80	10	MCE54H01F	32.25	26.90	21.50
Hex inverter	6.0	120	10	MCE54H04F	38.70	32.25	25.80
Triple 3-input NAND gate	6.0	60	10	MCE54H10F	32.25	26.90	21.50
Dual 4-input NAND gate	6.0	40	10	MCE54H20F	29.25	24.40	19.50
11-input NAND gate	9.0	20	10	MCE54H31F	30.40	25.30	20.25
Dual 4-input NAND power gate	6.0	80	30	MCE54H40F	30.10	25.05	20.05
Dual 2-wide 2-input AND-OR-INVERT gate	6.0	58	10	MCE54H51F	29.25	24.40	19.50
4-wide 2-input AND-OR-INVERT gate	6.0	40	10	MCE54H54F	28.65	23.90	19.10
Dual 2-wide 2-3-input AND-OR-INVERT gate	6.0	58	10	MCE54H56F	32.25	26.90	21.50
4-wide 3-3-2-3-input AND-OR-INVERT gate	6.0	40	10	MCE54H57F	32.25	26.90	21.50
Dual type D flip-flop	16	140	10	MCE54H79F	43.85	36.55	29.25
Binary to one-of-eight line decoder	....	130	10	MCE54H146F	46.90	39.05	31.25
Dual J-K flip-flop	8	100	10	MCE54103F	44.25	36.90	29.50

MTTL™ DIELECTRICALLY ISOLATED INTEGRATED CIRCUIT NETWORKS

Each component isolated by a high resistance (10^{10} ohms) layer or SiO^2. Temperature 0° C to +100° C. **F** suffix denotes flat ceramic package, Case 607 (TO-86) and Case 606 (TO-91).

Seven-diode array (Case 607)	....	....	....	MCE7003F	$21.00	$17.50	$14.00
Diode-resistor network (Case 606)	....	20*	....	MCE7005F	16.50	13.75	11.00
Sixteen-diode array (Case 606)	....	....	....	MCE7006F	24.00	20.00	16.00
Twelve-resistor network (Case 607)	....	97	....	MCE7007F	12.00	10.00	8.00

*100-ohm resistor.

MDTL™ DIELECTRICALLY ISOLATED INTEGRATED CIRCUITS (CASE 607)

Dielectrically isolated MDTL has the same electrical specifications as the MC930 family and may be used interchangeably with it. Temperature −55° C to +125° C. $V_{CC} = 5.0$ VDC; $T_A = 25°$ C. **F** suffix denotes flat ceramic pkg. Case 607 (TO-86).

Expandable dual 4-input NAND gate	....	22	8	MCE930F	$15.00	$12.50	$10.00
Expandable dual 4-input buffer	....	85	25	MCE932F	16.40	13.65	10.95
Dual 4-input expander	....	....	....	MCE933F	10.95	9.15	7.30
Hex inverter	....	66	8	MCE936F	16.40	13.65	10.95
Expandable dual 4-input NAND power gate	....	65	27	MCE944F	16.40	13.65	10.95
Clocked flip-flop	....	60	10	MCE945F	27.00	22.50	18.00
Quad 2-input NAND gate	....	44	8	MCE946F	15.00	12.50	10.00
Clocked flip-flop	....	70	9	MCE948F	27.00	22.50	18.00
Triple 3-input NAND gate	....	33	8	MCE962F	15.00	12.50	10.00

MDTL™ MC930 AND MC830 SERIES

MC930 Series −55° C to +125° C; MC830 Series 0° C to +75° C. $V_{CC} = 5.0$ VDC, $T_A = 25°$ C.
NOTE: Most circuits also available in flat pack (0° to +75° C), TO-100 and ceramic dual inline packages.

Function	Typical t_{pd} nsec	Typical P_D mW	Fan Out	Case 607 (−55° to +125° C) Motorola Type	Case 607 Net Each, Lots of 1-24	25-99	100-999	Case 646 (0° to +75° C) Motorola Type	Case 646 Net Each, Lots of 1-99	100-999	1000-4999
Expandable dual 4-input NAND gate	30	22	8	MC930F	$ 3.10	$ 2.55	$2.05	MC830P	$0.98	$0.48	$0.28
Expandable dual 4-input buffer	35	85	25	MC932F	3.10	2.55	2.05	MC832P	.98	.48	.28
Dual 4-input expander	....	....	....	MC933F	3.10	2.55	2.05	MC833P	.98	.48	.28
Hex inverter	30	66	8	MC934F	3.40	2.80	2.25	MC834P	1.10	.53	.31
Hex inverter (w/o output resistors)	30	42	8	MC935F	3.40	2.80	2.25	MC835P	1.10	.53	.31
Hex inverter	30	66	8	MC936F	3.40	2.80	2.25	MC836P	1.10	.53	.31
Hex inverter	25	90	7	MC937F	3.40	2.80	2.25	MC837P	1.10	.53	.31
Decade counter	*	150	8	MC938F	12.40	10.20	8.20	MC838P	3.95	1.95	1.15
Divide-by-sixteen counter	*	150	8	MC939F	12.40	10.20	8.20	MC839P	3.95	1.95	1.15
Hex inverter (w/o input diodes)	30	66	8	MC940F	3.40	2.80	2.25	MC840P	1.10	.53	.31
Hex inverter w/o output resistors and input diodes	30	42	8	MC941F	3.40	2.80	2.25	MC841P	1.10	.53	.31
Expandable dual 4-input power gate	30	65	27	MC944F	3.10	2.55	2.05	MC844P	.98	.48	.28
Clocked flip-flop	40	60	12/10†	MC945F	4.05	3.30	2.65	MC845P	1.25	.62	.36
Quad 2-input NAND gate	30	44	8	MC946F	3.10	2.55	2.05	MC846P	.98	.48	.28
Quad 2-input gate expander	....	....	....	MC947F	3.10	2.55	2.05	MC847P	.98	.48	.28
Clocked flip-flop	40	70	11/9†	MC948F	4.05	3.30	2.65	MC848P	1.25	.62	.36
Quad 2-input NAND gate (2K pull-up resistor)	25	66	7	MC949F	3.10	2.55	2.05	MC849P	.98	.48	.28

*Counting frequency = 30 MHz (typical). †Fan out for MC830/MC930 Series. CONTINUED ON FOLLOWING PAGE.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MDTL™ MC930 AND MC830 SERIES (CONTINUED)

	Typical			Case 607 (−55° to +125° C)				Case 646 (0° to +75° C)			
					Net Each, Lots of				Net Each, Lots of		
Function	t_{pd} nsec	P_D mW	Fan Out	Motorola Type	1-24	25-99	100-999	Motorola Type	1-99	100-999	1000-4999
Pulsed triggered binary	15	50	10/8*	MC950F	$12.10	$9.95	$8.00	MC850P	$3.85	$1.90	$1.10
Monostable multivibrator	40	30	10	MC951F	12.10	9.95	8.00	MC851P	3.85	1.90	1.10
Dual J-K flip-flop Common clock, C_D; separate S_D	40	120	12/10*	MC952F	5.65	4.65	3.75	MC852P	1.80	.88	.51
Separate clock and S_D; no C_D	40	120	12/10*	MC953F	5.65	4.65	3.75	MC853P	1.80	.88	.51
Common clock, C_D; separate S_D†	40	140	11/9*	MC955F	5.65	4.65	3.75	MC855P	1.80	.88	.51
Separate clock and S_D, no C_D†	40	140	11/9*	MC956F	5.65	4.65	3.75	MC856P	1.80	.88	.51
Quad 2-input buffer	35	170	25	MC957F	3.40	2.80	2.25	MC857P	1.10	.53	.31
Quad 2-input NAND power gate	30	130	27	MC958F	3.40	2.80	2.25	MC858P	1.10	.53	.31
Expandable dual 4-input NAND gate (2K pull-up resistor)	25	33	7	MC961F	3.10	2.55	2.05	MC861P	.98	.48	.28
Triple 3-input NAND gate	30	33	8	MC962F	3.10	2.55	2.05	MC862P	.98	.48	.28
Triple 3-input NAND gate (2K pull-up resistor)	25	50	7	MC963F	3.10	2.55	2.05	MC863P	.98	.48	.28
Dual 6-input NAND gate	30	22	8	MC1900F	3.10	2.55	2.05	MC1800P	.98	.48	.28
Dual 5-input NAND gate (2K pull-up res.)	25	33	7	MC1901F	3.10	2.55	2.05	MC1801P	.98	.48	.28
Expandable 8-input NAND gate	30	11	8	MC1902F	3.10	2.55	2.05	MC1802P	.98	.48	.28
Exp. 8-input NAND gate (2K pull-up res.)	25	16.5	7	MC1903F	3.10	2.55	2.05	MC1803P	.98	.48	.28
10-input NAND gate	30	11	8	MC1904F	3.10	2.55	2.05	MC1804P	.98	.48	.28
10-input NAND gate (2K pull-up res.)	25	16.5	7	MC1905F	3.10	2.55	2.05	MC1805P	.98	.48	.28
Quad 2-input AND gate	35	72	8	MC1906F	3.10	2.55	2.05	MC1806P	.98	.48	.28
Quad 2-input AND gate (2K pull-up res.)	30	85	7	MC1907F	3.10	2.55	2.05	MC1807P	.98	.48	.28
Quad 2-input OR gate	35	97	8	MC1908F	3.10	2.55	2.05	MC1808P	.98	.48	.28
Quad 2-input OR gate (2K pull-up res.)	30	115	7	MC1909F	3.10	2.55	2.05	MC1809P	.98	.48	.28
Quad 2-input NOR gate	30	60	8	MC1910F	3.10	2.55	2.05	MC1810P	.98	.48	.28
Quad 2-input NOR gate (2K pull-up res.)	25	72	7	MC1911F	3.10	2.55	2.05	MC1811P	.98	.48	.28
Quad 2-input-exclusive OR gate	40	120	8	MC1912F	5.60	4.60	3.70	MC1812P	1.75	.85	.50
Quad latch	35	220	7	MC1913L§	11.50	9.45	7.60	MC1813P‡	3.65	1.80	1.05
Quad latch	35	220	7	MC1914F	11.15	9.20	7.40	MC1814P	3.55	1.75	1.00
Parallel gated clocked flip-flop	40	65	12/10*	MC1915F	4.65	3.80	3.05	MC1815P	1.45	.72	.42
Parallel gated clocked flip-flop	40	75	11/9*	MC1916F	4.65	3.80	3.05	MC1816P	1.45	.72	.42
Quad 2-input NAND gate without output resistor	30	32	8	MC1918F	3.10	2.55	2.05	MC1818P	.98	.47	.28
High voltage hex inverter	40	42	7	....	.....	.....	.....	MC1820P	1.75	.85	.50

*Fan out for MC830/MC930 Series. †2K pull-up resistor. ‡Case 648. §Case 620.

MEDIUM POWER MRTL™ MC900, MC800 AND MC700 SERIES

MC900 Series −55° C to +125° C; MC800 Series 0° C to +100° C (MC800P Series 0° C to +75° C); MC700 Series +15° C to +55° C. V_{CC}=3.0 V ±10% for MC900 Series and MC800G Series; 3.6 V ±10% for MC800P Series and MC700 Series. T_A=25° C. Fan out given is with MRTL (MC800/MC900 Series); with mW MRTL (MC700 Series). **G** suffix denotes metal can (Case 601, TO-99); **P** suffix denotes dual inline plastic pkg. (Case 646, TO-116). Other package types available on request.

		MC900 and MC800 Series		Type MC900 Series (−55° C to +125° C)			Type MC800 Series (0° C to +100° C)			Type MC700 Series (+15° C to +55° C)				
					Net Ea., Lots			Net Ea., Lots					Net Ea., Lots	
Function	t_{pd} ns	Fan Out	Typ. P_D mW	Motorola Type	1-999	1000-4999	Motorola Type	1-999	1000-4999	Fan Out	Typ. P_D mW	Motorola Type	1-999	1000-4999
Buffer	20	25	16/45#	MC900G	$1.78	$1.31	MC800G	$1.42	$1.05	80	25/50#	MC700G	$1.24	$0.92
Counter adapter	22	5	55	MC901G	2.09	1.55	MC801G	1.67	1.24	16	80	MC701G	1.50	1.11
R-S flip-flop	14	4	22	MC902G	1.78	1.31	MC802G	1.42	1.05	13	32	MC702G	1.24	.92
3-input NOR gate	12	5	19/5.0#	MC903G	1.78	1.31	MC803G	1.42	1.05	16	28/7.5#	MC703G	1.24	.92
Half adder	14	5	45	MC904G	1.91	1.41	MC804G	1.53	1.13	16	65	MC704G	1.38	1.02
Half-shift register	22	4	53	MC905G	2.09	1.55	MC805G	1.67	1.24	13	75	MC705G	1.50	1.11
Same w/o inverter	22	4	36	MC906G	2.09	1.55	MC806G	1.67	1.24	13	52	MC706G	1.50	1.11
4-input NOR gate	12	5	19/5.0#	MC907G	1.78	1.31	MC807G	1.42	1.05	16	30/7.5#	MC707G	1.24	.92
Dual 2-in. NOR gate	12	5	38/10#	MC914G	1.78	1.31	MC814G	1.42	1.05	16	50/15#	MC714G	1.24	.92
Dual 3-in. NOR gate	12	5	38/10#	MC915G†	1.91	1.41	MC815G†	1.53	1.13	16	55/15#	MC715G†	1.38	1.02
J-K flip-flop	30	3	62/54§	MC916G	2.65	1.96	MC816G	2.12	1.57	10	91/79§	MC723G	1.89	1.40
Quad 2-in. NOR gate	12	5	100/30#	....	......	......	MC824P*	1.08	.81	16	100/30#	MC724P*	1.08	.81
Dual 4-in. NOR gate	12	5	60/15#	....	......	......	MC825P	1.08	.81	16	60/15#	MC725P	1.08	.81
J-K flip-flop	35	5	130/65§	MC926G†	3.10	2.30	MC826G†	2.48	1.84	16	100/86§	MC726G†	2.21	1.64
Quad inverter	12	5	76/20#	MC927G†	1.78	1.31	MC827G†	1.42	1.05	16	87/30#	MC727G†	1.24	.92
5-input NOR gate	12	5	19/5.0#	MC929G	1.78	1.31	MC829G†	1.42	1.05	16	33/7.5#	MC729G	1.24	.92
Quad exclus. OR gate	12	5	28	....	......	......	MC871P	1.80	1.35	16	28	MC771P	1.80	1.35
J-K flip-flop	35	5	130/65§	MC974G	3.10	2.30	MC874G	2.48	1.84	16	100/86§	MC774G	2.21	1.64
Dual half-adder	20	5	120	....	......	......	MC875P	1.35	1.00	16	120	MC775P	1.35	1.00
Binary up counter	.....	3	180	....	......	......	MC877P	3.40	2.50	10	180	MC777P	3.40	2.50
1 J-K flip-flop, 1 expander, 2 buffers	.....	.....	141/124‡	....	......	......	MC879P	1.90	1.40	.....	141/124‡	MC779P	1.90	1.40
Decade up counter	.....	3	250	....	......	......	MC880P	3.40	2.50	10	250	MC780P	3.40	2.50
Dual half-shift reg.	22	4	140	....	......	......	MC883P	1.55	1.14	13	140	MC783P	1.55	1.14
Same w/o inverter	22	14	100	....	......	......	MC884P	1.46	1.08	13	100	MC784P	1.46	1.08
Quad 2-in. expander	12	.....	20/#	....	......	......	MC885P*	1.09	.81	.....	20/#	MC785P*	1.09	.81
Dual 4-in. expander	12	.....	20/#	....	......	......	MC886P	1.09	.81	.....	20/#	MC786P	1.09	.81
1 J-K flip-flop, 1 inverter, 2 buffers	.....	.....	138/132‡	....	......	......	MC887P	1.90	1.40	.....	138/132‡	MC787P	1.90	1.40
Dual 3-input buffer, non-inverting	24	25	145/56#	....	......	......	MC888P	1.35	1.00	80	145/56#	MC788P	1.35	1.00
Hex inverter	12	5	130/15#	....	......	......	MC889P*	1.08	.81	16	130/15#	MC789P*	1.08	.81
Dual J-K flip-flop	35	3	**	....	......	......	MC890P	2.00	1.50	10	182/158§	MC790P	2.00	1.50
Dual J-K flip-flop	40	5	††	....	......	......	MC891P	2.25	1.65	16	190/160§	MC791P	2.25	1.65
Triple 3-in. NOR gate	12	5	82/24#	....	......	......	MC892P	1.09	.81	16	82/24#	MC792P	1.09	.81
Ser-Par shift reg.	55	5	225	....	......	......	MC894P	3.40	2.50	16	225	MC794P	3.40	2.50
Dual full adder	60	5	225	....	......	......	MC896P	3.40	2.50	16	225	MC796P	3.40	2.50
Dual full subtractor	60	5	225	....	......	......	MC897P	3.40	2.50	16	225	MC797P	3.40	2.50
Dual buffer	15	25	32/90#	MC999G†	2.16	1.60	MC899G†	1.73	1.28	80	50/90#	MC799P	1.08	.81

*A suffix types available; have insured capability to drive at least one MTTL load or two MDTL loads. †Case 603. ‡Only clock input high on flip-flop; other element inputs high/inputs low. §Only clock input high/input low. #Input high/input low. **182/159; ††190/160 only clock inputs high/inputs low. **MEDIUM POWER MRTL™ MC800 AND MC700 SERIES CONTINUED ON FOLLOWING PAGE.**

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MEDIUM POWER MRTL™ MC800 AND MC700 SERIES (CONTINUED)

Function	t_{pd} ns	Type MC800 Series—Case 646 (0° C to +75° C)					Type MC700 Series—Case 646 (+15° C to +55° C)				
		Fan Out	Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	1000-4999	Fan Out	Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	1000-4999
Dual 4-channel selector	25	5	100	MC9801P*	$2.45	$1.80	16	100	MC9701P*	$2.45	$1.80
Dual J-K flip-flop	35	3	182/158†	MC9802P	2.15	1.60	10	182/158†	MC9702P	2.00	1.50
4-bit parallel full adder	125	2	265	MC9804P	3.40	2.50	6	265	MC9704P*	3.40	2.50
Dual 4-channel distributor	25	5	150	MC9807P	2.45	1.80	16	150	MC9707P	2.45	1.80
Quad Schmitt trigger	30	5	95	MC9809P	2.45	1.80	5	95	MC9709P	2.45	1.80
Quad 2-input AND gate	28	5	100	MC9813P	1.40	1.05	5	100	MC9713P	1.40	1.05
Quad 2-input NAND gate	14‡	5	155	MC9814P	1.55	1.15	5	145	MC9714P	1.55	1.15
Quad 2-input OR gate	14‡	5	28/100§	MC9815P	1.28	.95	5	28/100§	MC9715P	1.28	.95
Hex expander	12	.....	13/—§	MC9819P♯	1.09	.81	......	13/—§	MC9719P♯	1.09	.81

*Case 648. †Only clock inputs high/inputs low. ‡Operating frequency, MHz. §Inputs high/inputs low. ♯**A** suffix types available; have insured capability to drive at least one MTTL™ load or two MDTL™ loads.

LOW POWER mW MRTL™ MC908, MC808 AND MC708 SERIES (CASE 601)

MC908 Series −55° C to +125° C; MC808 Series 0° C to +75° C; MC708 Series +15° C to +55° C. P_D ratings at inputs high/inputs low except as otherwise noted. MC708 Series can be mixed with devices from the medium-power MC700 Series which has loading factors normalized for compatibility. V_{CC}=3.0 volts ±10% for MC908 Series; 3.6 volts ±10% for MC808 and MC708 Series. T_A=25° C. Plastic packaged devices are available in the MC708/MC808 Series only. Ceramic flat packages also available on request.

Function	Typ. t_{pd} ns	Fan Out	Type MC908 Series (−55° C to +125° C)				MC808, MC708	Type MC808 Series (0° C to +75° C)			Type MC708 Series (+15° C to +55° C)		
			Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	1000-4999	Typ. P_D mW	Motorola Type	Net Ea., Lots 1-999	1000-4999	Motorola Type	Net Ea., Lots 1-999	1000-4999
Half adder	60	4	14/8.5	MC908G	$2.09	$1.55	19/12.5	MC808G	$1.67	$1.24	MC708G	$1.50	$1.11
2-input buffer	57	30	5.5/16	MC909G	1.78	1.31	7.0/23	MC809G	1.42	1.05	MC709G	1.24	.92
Dual 2-input NOR gate	27	4	8.0/1.0	MC910G	1.78	1.31	10/2.5	MC810G	1.42	1.05	MC710G	1.24	.92
4-input OR-NOR gate	60	4	6.0/3.5	MC911G	1.78	1.31	8.0/5.5	MC811G	1.42	1.05	MC711G	1.24	.92
Half adder	66	4	11.5/5.5	MC912G	2.09	1.55	15.5/10.5	MC812G	1.67	1.24	MC712G	1.50	1.11
Type D flip-flop	75	3	17.5/13*	MC913G	2.65	1.96	24/17.5*	MC813G	2.12	1.57	MC713G	1.89	1.40
Quad 2-input NOR gate	27	4	....	....	......	......	20/5.0	MC817P†	1.08	.81	MC717P†	1.08	.81
Dual 3-input NOR gate	27	4	9.5/1.0	MC918G§	1.91	1.41	12/2.5	MC818G§ MC818P†	1.53 1.00	1.13 .75	MC718G§ MC718P†	1.38 1.00	1.02 .75
Dual 4-input NOR gate	27	4	....	....	......	......	13/2.5	MC819P†	1.08	.81	MC719P†	1.08	.81
J-K flip-flop	50	2	15.5/10‡	MC920G	2.65	1.96	20.5/14.5‡	MC820G	2.12	1.57	MC720G	1.89	1.40
Dual 2-input gate expander	27	....	3.0/–	MC921G	1.78	1.31	3.0/–	MC821G	1.42	1.05	MC721G	1.24	.92
J-K flip-flop	70	4	17.5/13‡	MC922G§	3.10	2.30	24/20‡	MC822G§ MC822P†	2.48 1.30	1.84 .95	MC722G§ MC722P†	2.21 1.30	1.64 .95
5-input NOR gate	27	4	6.5/0.5	MC928G	1.78	1.31	7.5/1.0	MC828G	1.42	1.05	MC728G	1.24	.92
Dual exclusive-OR-NOR gate	....	4	....	....	......	......	25	MC864P†	1.80	1.34	MC764P†	1.70	1.25
Quad latch	50	9	....	....	......	......	110	MC867AP*	3.26	2.42	MC767AP♯	3.26	2.42
Dual J-K flip-flop	50	2	....	....	......	......	41/29‡	MC876P†	2.00	1.50	MC776P†	2.00	1.50
Dual type D flip-flop	60	3	....	....	......	......	48/35*	MC878P†	1.90	1.40	MC778P†	1.90	1.40
Dual buffer	57	30	11/32	MC981G	2.16	1.60	14/46	MC881G	1.73	1.28	MC781G	1.54	1.14
J-K flip-flop	80	2	15/13‡	MC982G	3.10	2.30	23/21‡	MC882G	2.48	1.84	MC782G	2.21	1.64
Triple 3-input NOR gate	27	4	....	....	......	......	18/3.5	MC893P†	1.09	.81	MC793P†	1.09	.81
Dual 2-input buffer	57	30	....	....	......	......	14/46	MC898P†	1.21	.90	MC798P†	1.21	.90
Hex inverter	27	4	....	....	......	......	7.0/3.0	MC9818P†	1.09	.81	MC9718P†	1.09	.81
Hex expander	12	....	....	....	......	......	30/–	MC9820P†	1.09	.81	MC9720P†	1.09	.81
Quad 2-input expander	27	....	....	....	......	......	20/–	MC9821P†	1.09	.81	MC9721P†	1.09	.81
Dual J-K flip-flop	75	4	....	....	......	......	24/–‡	MC9822P†	2.25	1.65	MC9722P†	2.25	1.65
Quad 2-input AND gate	50	4	....	....	......	......	12●	MC9823P†	1.40	1.05	MC9723P†	1.40	1.05
Quad 2-input NAND gate	50	4	....	....	......	......	20/5.0	MC9824P†	1.55	1.15	MC9724P†	1.55	1.15
Quad 2-input OR gate	50	4	....	....	......	......	–/7.0	MC9825P†	1.28	.95	MC9725P†	1.28	.95

*Direct set and direct clear low. All other inputs high/all inputs low. †Case 646. ‡Only clock input high/all inputs low. §Case 603. ♯Case 648. **A** suffix devices have insured capability to drive at least one MTTL load or two MDTL loads. ●One input high/one input low.

MOS SERIES

Monolithic integrated circuits provide low-cost, high-complexity logic in functional blocks. Suffix **G** denotes metal package and suffix **L** denotes ceramic package.

MC1100 SERIES METAL GATE, HIGH-THRESHOLD P-CHANNEL MOS

Function	Temperature	Case	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Triple 66-bit dynamic shift register	0° C to +75° C	602A	MC1141G	$ 6·00	$5·60	$4·40
200-bit dynamic shift register	0° C to +55° C	619-02	MC1142G	5·25	4·50	3·50
8-channel multiplex switch	0° C to +75° C	638	MC1150L	10·20	8·50	6·80
Dual 1-of-4 channel multiplex switch	0° C to +75° C	638	MC1151L	10·20	8·50	6·80
General purpose logic element	0° C to +75° C	632	MC1155L	6·60	5·50	4·40
Dual 100-bit static shift register	−55° C to +85° C	602A	MC1160G	6·30	5·00	3·95
Dual 50-bit static shift register	−55° C to +85° C	602A	MC1161G	4·45	3·75	2·95
Frequency divider	0° C to +70° C	632	MC1180L	4·00	4·00	3·00
Resettable rhythm counter	0° C to +70° C	620	MC1181L	5·30	5·30	4·00

MC1100 SERIES P-CHANNEL MOS CONTINUED ON FOLLOWING PAGE

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MOS SERIES (CONTINUED)

Suffix **G** denotes metal package and suffix **L** denotes ceramic package.

MC1100 SERIES METAL GATE HIGH-THRESHOLD P-CHANNEL MOS (CONT'D)

Function	Temperature	Case	Motorola Type	Net Each, Lots of		
				1-24	25-99	100-999
Rhythm pattern generator	0° C to +70° C	684	**MC1182L***	$13.40	$13.40	$ 9.95
Frequency synthesizer	0° C to +70° C	632	**MC1183L**	9.30	9.30	7.00
Frequency synthesizer	0° C to +70° C	632	**MC1184L**	9.30	9.30	7.00
2048-bit read only memory; mask-programmable static ROM; may be organized as 512 words of 4 bits or 256 words of 8 bits. Open drain (for use with TTL devices) or with pull down resistors (for use with MOS devices)	−25° C to +85° C	684	**MCM1110L***	18.00	15.00	12.00
Preprogrammed MCM1110L: 256 words of 8 bits, pull-down resistors in output buffer	−25° C to +85° C	684	**MCM1111L**	18.00	15.00	12.00
MCM1111L except open-drain output buffers	−25° C to +85° C	684	**MCM1112L**	18.00	15.00	12.00
2240-bit read only memory; mask-programmable static character generator ROM; 64 characters of 35 bits (5 x 7), 7 address inputs; 3 row select inputs; chip enable input—open drain or push-pull output buffers	−25° C to +85° C	684†	**MCM1120L***	18.00	15.00	12.00
Preprogrammed MCM1120L; push-pull output buffers	−25° C to +85° C	695	**MCM1121L**	18.00	15.00	12.00
MCM121L except open-drain output buffers	−25° C to +85° C	695	**MCM1122L**	18.00	15.00	12.00
2240-bit read only memory; mask-programmable static character generator ROM; 64 characters of 35 bits (5 x 7) or 32 characters of 70 bits (5 x 14); 7 address inputs, 5 column select inputs, chip enable input. Open drain buffers for TTL devices	−25° C to +85° C	684†	**MCM1130L***	18.00	15.00	12.00
Preprogrammed MCM1130L; 64 characters of 35 bits (5 x 7)	−25° C to +85° C	684	**MCM1131L**	18.00	15.00	12.00
Same as MCM1131L except 6 address inputs	−25° C to +85° C	695	**MCM1132L**	18.00	15.00	12.00
4096-bit read only memory; mask programmable static ROM; 512 words of 8 bits or 1024 words of 4 bits. Output buffers open-drain or with pull down resistors	−25° C to +85° C	684	**MCM1140L***	24.00	20.00	16.00
Preprogrammed MCM1140L: 512 words of 8 bits; open drain output buffers	−25° C to +85° C	684	**MCM1141L**	24.00	20.00	16.00
2560-bit read only memory; mask-programmable static ROM; 512 words of 5 bits or 256 words of 10 bits. Output buffers open drain or with pull down resistors	−25° C to +85° C	684	**MCM1150L***	20.25	16.90	13.50
Preprogrammed MCM1150L: 256 words of 10 bits; open drain output buffers, programmed for ASCII-to-Selectric‡ and Selectric-to-ASCII code conversion	−25° C to +85° C	684	**MCM1151L**	20.25	16.90	13.50
1024-bit dynamic random access memory; 1024 one bit words; power dissipation = 75 μW/bit	0° C to +70° C	694 684	**MCM1172L** **MCM1173L**	19.80 19.80	16.50 16.50	11.00 11.00
1024-bit dynamic random access memory; 1024 one-bit access time = 150 ns typ.; read/write cycle time = 250 ns	0° C to +70° C	677	**MCM1175L**	21.80	18.15	12.10

MC2200 SERIES METAL GATE LOW-THRESHOLD P-CHANNEL MOS

General purpose logic element	0° C to +75° C	632	**MC2255L**	$ 6.60	$ 5.50	$ 4.40
Terminal transmitter	0° C to +75° C	684	**MC2257L**	13.50	11.25	9.00
Terminal receiver	0° C to +75° C	695	**MC2259L**	20.20	13.45	10.75

*Mask Charge: 10 piece min. for all devices requiring mask charges; charges on request. †Or Case 695. ‡Reg. IBM trademark.

McMOS™ MC1400 SERIES COMPLEMENTARY MOS

Output logic excursion is independent of fan out; diode protection on all inputs. Temperature −40° C to +85° C. V_{DD} = 16 VDC. **L** suffix denotes dual inline ceramic pkg. (Case 620); **P** suffix denotes dual inline plastic pkg. (Case 648). Power dissipation value given is quiescent, typ./pkg. The following devices also available in chip form.

Function	t_{pd} ns	P_D nW	Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
				1-99	100-999	1000-4900		1-99	100-999	1000-4999
Dual 3-input NOR gate inverter	25	50	**MC14000CL***	$ 0.94	$ 0.78	$ 0.65	**MC14000CP†**	$ 0.85	$0.70	$0.59
Quad 2-input NOR gate	25	50	**MC14001CL***	.94	.78	.65	**MC14001CP†**	.85	.70	.59
Dual 4-input NOR gate	25	50	**MC14002CL***	.94	.78	.65	**MC14002CP†**	.85	.70	.59
18-bit static shift register	80	200	**MC14006CL***	4.70	3.89	3.24	**MC14006CP†**	4.23	3.48	2.92
Dual pair and inverter	15	50	**MC14007CL***	.94	.78	.65	**MC14007CP†**	.85	.70	.59
4-bit full adder	170	1000	**MC14008CL**	4.86	4.02	3.35	**MC14008CP**	4.38	3.62	3.02
Hex inverter buffer	9	500	**MC14009CL**	2.04	1.69	1.41	**MC14009CP**	1.84	1.52	1.27
Hex noninverting buffer	20	500	**MC14010CL**	2.04	1.69	1.41	**MC14010CP**	1.84	1.52	1.27
Quad 2-input NAND gate	25	50	**MC14011CL***	.94	.78	.65	**MC14011CP†**	.85	.70	.59
Dual 4-input NAND gate	25	50	**MC14012CL***	.94	.78	.65	**MC14012CP†**	.85	.70	.59
Dual type D flip-flop	80	200	**MC14013CL***	1.96	1.62	1.35	**MC14013CP†**	1.76	1.46	1.22
Dual 4-bit static shift register	125	10 μW	**MC14015CL**	5.12	4.24	3.53	**MC14015CP**	4.61	3.82	3.18
Quad analog switch/multiplexer	7	200	**MC14016CL***	1.96	1.62	1.35	**MC14016CP†**	1.76	1.46	1.22
Decade counter/divider	200	10 mW	**MC14017CL**	5.12	4.24	3.53	**MC14017CP**	4.61	3.82	3.18
8-bit static shift register	100	3000	**MC14021CL**	5.12	4.24	3.53	**MC14021CP**	4.61	3.82	3.18
Triple 3-input NAND gate	25	50	**MC14023CL***	.94	.78	.65	**MC14023CP†**	.85	.70	.59
Triple 3-input NOR gate	25	50	**MC14025CL***	.94	.78	.65	**MC14025CP†**	.85	.70	.59
Dual J-K flip-flop	75	200	**MC14027CL**	3.03	2.50	2.09	**MC14027CP**	2.04	1.69	1.41
BCD-to-decimal decoder/binary-to-octal decoder	57	75	**MC14028CL**	4.44	3.67	3.06	**MC14028CP**	4.00	3.30	2.75
Triple serial adder (positive)	90	1000	**MC14032CL**	5.12	4.24	3.53	**MC14032CP**	4.61	3.82	3.22
8-bit static bus register	175	5000	**MC14034CL‡**	10.90	9.00	7.50	....	.....	.....	.....
Triple serial adder (negative)	90	1000	**MC14038CL**	5.12	4.24	3.53	**MC14038CP**	4.61	3.82	3.22
12-bit binary counter	85	7500	**MC14040CL**	6.54	5.40	4.50	**MC14040CP**	5.89	4.86	4.05
Triple gate—dual 4-input NAND gate 2-input NOR-OR gate or 8-input AND-NAND gate	25	50	**MC14501CL**	2.04	1.69	1.41	**MC14501CP**	1.84	1.52	1.27
Strobed hex inverter/buffer	20	50	**MC14502CL**	4.00	3.30	2.75	**MC14502CP**	3.60	2.97	2.48
Dual expandable A-O-I gate	80	100	**MC14506CL**	2.72	2.24	1.87	**MC14506CP**	1.96	1.62	1.35
Quad exclusive-OR gate	35	50	**MC14507CL**	1.97	1.63	1.36	**MC14507CP**	1.77	1.47	1.23
Dual 4-bit latch	75	1000	**MC14508CL‡**	16.55	13.75	11.45	....	.....	.....	.....
BCD up-down counter	100	1000	**MC14510CL**	7.68	6.35	5.30	**MC14510CP**	6.91	5.72	4.77

*Case 632. †Case 646. ‡Case 684. **MC1400 SERIES COMPLEMENTARY MOS CONT'D ON NEXT PAGE.**

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

McMOS™ MC1400 SERIES

COMPLEMENTARY MOS (CONTINUED)

Case 620, **L** suffix; Case 648, **P** suffix.

Function	t_{pd} ns	P_D nW	Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
				1-99	100-999	1000-4999		1-99	100-999	1000-4999
BCD-to-seven segment latch/decoder/driver	250	100	**MC14511CL**	**$ 8.65**	**$ 7.15**	**$ 5.95**	**MC14511CP**	**$7.79**	**$6.44**	**$5.36**
8-channel data selector	75	500	**MC14512CL**	**4.83**	**4.00**	**3.33**	**MC14512CP**	**4.35**	**3.60**	**3.00**
4-bit latch/4-to-16 line decoder (high)	300	200	**MC14514CL***	**16.55**	**13.75**	**11.45**	....	....	....	....
(low)	300	200	**MC14515CL***	**16.55**	**13.75**	**11.45**	....	....	....	....
Binary up-down counter	40	1000	**MC14516CL**	**7.68**	**6.35**	**5.30**	**MC14516CP**	**6.91**	**5.72**	**4.77**
Dual 64-bit static shift register	180	1000	**MC14517CL**	**17.30**	**14.35**	**11.95**	....	....	....	....
Dual BCD up counter	100	4000	**MC14518CL**	**8.70**	**7.20**	**6.00**	**MC14518CP**	**6.91**	**5.72**	**4.77**
4-bit AND-OR selector (quad 2-channel data selector or quad exclusive-NOR gate	85	100	**MC14519CL**	**2.31**	**1.91**	**1.59**	**MC14519CP**	**2.08**	**1.72**	**1.44**
Dual binary up counter	100	4000	**MC14520CL**	**7.68**	**6.35**	**5.30**	**MC14520CP**	**6.91**	**5.72**	**4.77**
Programmable divide-by-N 4-bit counter (BCD)	100	1000	**MC14522CL**	**7.95**	**6.60**	**5.50**	....	....	....	....
(binary)	100	1000	**MC14526CL**	**7.95**	**6.60**	**5.50**	....	....	....	....
BCD rate multiplier	70	1000	**MC14527CL**	**7.95**	**6.60**	**5.50**	**MC14527CP**	**6.44**	**5.36**	**4.46**
Dual retriggerable/resettable monostable multivibrator	80	50	**MC14528CL**	**4.23**	**3.48**	**2.92**	**MC14528CP**	**3.77**	**3.10**	**2.60**
Dual 4-channel analog data selector	....	250	**MC14529CL**	**4.83**	**4.00**	**3.33**	**MC14529CP**	**4.35**	**3.48**	**3.00**
Dual 5-input majority logic gate	180	100	**MC14530CL**	**2.31**	**1.91**	**1.59**	**MC14530CP**	**1.96**	**1.62**	**1.35**
12-bit parity tree	140	100	**MC14531CL**	**4.23**	**3.48**	**2.92**	**MC14531CP**	**3.77**	**3.10**	**2.60**
4-bit arithmetic logic unit	225	100	**MC14581CL***	**16.55**	**13.75**	**11.45**	....	....	....	....
Look-ahead carry block	115	100	**MC14582CL**	**4.00**	**3.30**	**2.75**	**MC14582CP**	**4.00**	**3.30**	**2.75**
64-bit read/write RAM	150‡	300	**MCM14505CL†**	**21.20**	**17.50**	**14.60**	....	....	....	....
1024-bit read only memory	180	31	**MCM14524CL**	**	**	**	....	....	....	....

*Case 684. †Case 632. ‡Read cycle/200 write cycle. **Net Each, Lots of: 10–24, **$16.55**; 25–99, **$15.20**; 100–999, **$13.75**; min. of 10 pieces; mask charges available on request.

Same as above, and MC14000 Series on preceding page, except: $V_{DD}=18$ VDC; temperature −55° C to +125° C. Quiescent power dissipation, typ./pkg. and Case 620 except as otherwise noted.

Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of			Motorola Type	Net Each, Lots of		
	1-99	100-999	1000-4999		1-99	100-999	1000-4999		1-99	100-999	1000-4999
MC14000AL*	**$ 3.77**	**$ 3.10**	**$ 2.60**	**MC14027AL•**	**$ 6.38**	**$ 5.25**	**$ 4.40**	**MC14517AL♦**	**$28.90**	**$24.00**	**$19.95**
MC14001AL*	**3.99**	**3.40**	**2.75**	**MC14028AL**	**9.56**	**7.92**	**6.60**	**MC14518AL**	**15.60**	**12.90**	**10.75**
MC14002AL*	**3.99**	**3.40**	**2.75**	**MC14032AL**	**8.35**	**6.91**	**5.76**	**MC14519AL**	**5.75**	**4.75**	**3.95**
MC14006AL†	**11.02**	**9.10**	**7.60**	**MC14034AL▲**	**14.50**	**12.00**	**10.00**	**MC14520AL**	**13.85**	**11.47**	**9.55**
MC14007AL*	**3.19**	**2.65**	**2.20**	**MC14038AL**	**8.35**	**6.91**	**5.76**	**MC14522AL**	**14.35**	**11.85**	**9.90**
MC14008AL	**12.25**	**10.15**	**8.45**	**MC14040AL**	**12.32**	**10.20**	**8.50**	**MC14526AL**	**14.35**	**11.85**	**9.90**
MC14009AL‡	**6.38**	**5.25**	**4.40**	**MC14501AL■**	**5.22**	**4.30**	**3.60**	**MC14527AL**	**14.35**	**11.85**	**9.90**
MC14010AL‡	**6.38**	**5.25**	**4.40**	**MC14502AL■**	**8.62**	**7.15**	**5.95**	**MC14528AL**	**7.85**	**6.50**	**5.40**
MC14011AL*	**3.99**	**3.40**	**2.75**	**MC14506AL**	**5.60**	**4.64**	**3.86**	**MC14529AL**	**8.70**	**7.20**	**6.00**
MC14012AL*	**3.99**	**3.40**	**2.75**	**MC14507AL***	**4.58**	**3.79**	**3.16**	**MC14530AL**	**5.75**	**4.75**	**3.95**
MC14013AL†	**5.73**	**4.75**	**3.95**	**MC14508AL▲**	**29.85**	**24.70**	**20.60**	**MC14531AL**	**7.85**	**6.50**	**5.40**
MC14015AL	**12.25**	**10.15**	**8.45**	**MC14510AL**	**13.85**	**11.47**	**9.55**	**MC14581AL▲**	**29.85**	**24.70**	**20.60**
MC14016AL§	**6.24**	**5.15**	**4.30**	**MC14511AL**	**18.10**	**15.00**	**12.50**	**MC14582AL**	**8.65**	**7.15**	**5.95**
MC14017AL#	**12.76**	**10.60**	**8.80**	**MC14512AL**	**8.70**	**7.20**	**6.00**	**MCM14505AL§**	**37.90**	**31.30**	**26.10**
MC14021AL	**11.82**	**9.75**	**8.15**	**MC14514AL▲**	**29.85**	**24.70**	**20.60**	**MCM14524AL**	**	**	**
MC14023AL*	**3.99**	**3.40**	**2.75**	**MC14515AL▲**	**29.85**	**24.70**	**20.60**				
MC14025AL*	**3.99**	**3.40**	**2.75**	**MC14516AL**	**13.85**	**11.47**	**9.55**				

*Case 632; $P_D=10$ nW. †Case 632; $P_D=50$ nW. ‡$P_D=100$ nW. §Case 632. #$P_D=5.0$ mW. •$P_D=50$ nW. ▲Case 684. ■$P_D=10$ nW. ♦$P_D=500$ nW. **Net Each, Lots of: 10–24, **$29.95**; 25–99, **$27.25**; 100–999, **$24.70**; min. of 10 pieces; masking charges available on request.

BIPOLAR LOGIC PRODUCTS

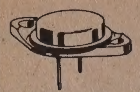
Function	Temperature	Case	Motorola Type	Net Each, Lots of		
				1-24	25-99	100-999
128-bit ROM—16 eight-bit words; compatible with MDTL/MTTL lines. Open collectors or 2.0K pull up resistors at buffered output bit lines. Truth table and output option specified by user	0° C to +75° C 0° C to +75° C −55° C to +125° C	620 648 620	**MCM4000L*** **MCM4000P*** **MCM4300L***	....	**$ 7.30** **5.50** **10.95**	**$ 5.85** **3.65** **8.75**
Same as above except 256-bit ROM—32 eight-bit words	0° C to +75° C 0° C to +75° C	620 648	**MCM4002L*** **MCM4002P***	....	**11.00** **8.15**	**8.80** **5.40**
1024-bit ROM—256 four-bit words; input loading of −0.25 mA max.; typ. address time of 50 ns; typ. chip select time of 25 ns; open collectors or 2.0K pull up resistors at output bit lines. Truth table and output option specified by user	0° C to +75° C	690	**MCM4004AL***	....	**18.50**	**15.00**
Same as above except input loading of −1.6 mA max.; typ. address time of 40 ns; typ. chip select time of 20 ns	0° C to +75° C	690	**MCM4006AL***	....	**20.80**	**16.65**
512-bit PROM—64 eight-bit words; field programmable by "blowing" appropriate nichrome resistors to break metalization links; ninth bit available for circuit testing. Open collector outputs	0° C to +75° C −55° C to +125° C	684 684	**MCM5003AL** **MCM5303AL**	**$32.00** **40.50**	**24.50** **31.90**	**18.00** **23.50**
Same as above except 2.0K pull up resistors on the collector outputs	0° C to +75° C −55° C to +75° C	684 684	**MCM5004AL** **MCM5304AL**	**32.00** **40.50**	**24.50** **31.90**	**18.00** **23.50**

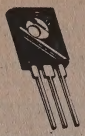
*Plus additional one time mask charge; available on request.

SEE FIRST TWO MOTOROLA IC PAGES FOR CASE ILLUSTRATIONS

MOTOROLA Semiconductors

LINEAR INTEGRATED CIRCUITS


Case 11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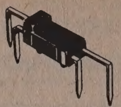
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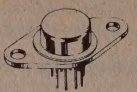
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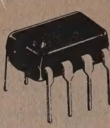
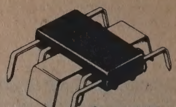
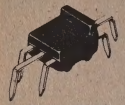
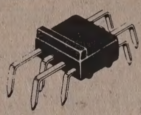

Case 626


Case 641


Case 643A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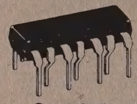
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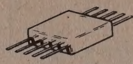
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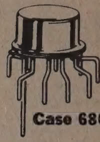

Case 686

OPERATIONAL AMPLIFIERS

Nonencapsulated chip, flip-chip and beam-lead devices; flat ceramic beam-lead devices are also available. Types, data and pricing on request. Listed in order of increasing input bias current (I_{IB}) within temperature range.

INTERNALLY COMPENSATED

Temperature −55° C to +125° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1556G	601	0.015	100,000	±15	$18.00	$15.00	$12.00
MC1536G	601	0.02	100,000	±28	27.00	22.50	18.00
MLM107G	601	0.075	50,000	±15	11.92	9.93	7.95
MC1741G	601	0.5	50,000	±15	5.85	4.90	3.90

Temperature −25° C to +85° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MLM210G	601	0.003	Unity	±15	$9.00	$7.50	$6.00
MLM207G	601	0.075	50,000	±15	7.42	6.18	4.95

Temperature 0° C to +70° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MLM310G	601	0.007	Unity	±15	$4.90	$4.05	$3.25
MC1456G	601	0.03	70,000	±15	3.37	2.80	2.25
MC1436G	601	0.04	70,000	±28	6.75	5.60	4.50
MC1456CG	601	0.09	25,000	±15	2.85	2.37	1.90
MC1436G	601	0.09	50,000	±28	3.75	3.10	2.50
MLM307G	601	0.25	25,000	±15	.97	.81	.65
MC1741CG	601	0.5	20,000	±15	.87	.87	.68

NONCOMPENSATED

Temperature −55° C to +125° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MLM101AG	601	0.075	50,000	±15	$11.92	$ 9.93	$7.95
MC1531G	602B	0.15	2,500	±6.0	12.75	10.60	8.50
MC1539G	601	0.5	50,000	±15	3.75	3.10	2.50
MC1748G	601	0.5	50,000	±15	3.75	3.10	2.50
MC1709G	601	0.5	25,000	±15	2.62	2.10	1.75
MC1533G	602B	1.0	40,000	±15	5.25	4.40	3.50
MC1520G	602A	2.0	1,000	±6.0	9.75	8.10	6.50
MC1712G	601	5.0	2,500	*	7.90	6.30	5.25
MC1530G	602B	10	4,500	±6.0	12.75	10.60	8.50

Temperature −25° C to +75° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MLM201AG	601	2.0	50,000	±15	$7.42	$6.18	$4.95

Temperature 0° C to +75° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MLM301AG	601	0.25	25,000	±15	$0.97	$0.81	$0.65
MC1431G	602B	0.3	1,500	±6.0	5.25	4.35	3.50
MC1748CG	601	0.5	20,000	±15	1.87	1.56	1.25
MC1439G	601	1.0	15,000	±15	2.20	1.80	1.45
MC1709CG	601	1.5	15,000	±15	.73	.73	.61
MC1433G	602B	2.0	30,000	±15	3.90	2.65	1.95
MC1420G	602A	4.0	750	±6.0	2.70	2.25	1.80
MC1712CG	601	7.5	2,000	*	2.80	2.20	1.85
MC1430G	602B	15	3,000	±6.0	5.25	4.35	3.50

*+12, −6.0.

Same as above, except additional case types that are available.

Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999
MC1430F	606	$6.75	$5.60	$4.50	MC1520F	606	$12.00	$10.00	$ 8.00	MC1709CP2	646	$0.75	$0.75	$0.58
MC1430P2	646	5.25	4.35	3.50	MC1530F	606	15.00	12.50	10.00	MC1709F	606	4.87	3.90	3.25
MC1431F	606	5.76	5.60	4.50	MC1531F	606	15.00	12.50	10.00	MC1709L	632	2.62	2.10	1.75
MC1431P2	646	5.25	4.35	3.50	MC1533F	606	12.00	10.00	8.00	MC1712CF	606	2.80	2.20	1.85
MC1433F	606	8.85	7.35	5.90	MC1533L	632	5.25	4.40	3.50	MC1712CL	632	3.38	2.70	2.25
MC1433L	632	2.90	2.45	1.95	MC1709CF	606	2.25	1.80	1.50	MC1712F	606	8.55	6.85	5.70
MC1439L	632	2.40	2.00	1.60	MC1709CL	632	.78	.78	.61	MC1712L	632	7.90	6.30	5.25
MC1439P2	646	2.25	1.90	1.50	MC1709CP1	626	.65	.65	.50	MLM301AP1	626	.90	.75	.60

DUAL OPERATIONAL AMPLIFIERS

Listed in increasing order of input bias current (I_{IB}) within temperature range.

INTERNALLY COMPENSATED AND NONCOMPENSATED

Temperature −55° C to +125° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1558G*	601	0.5	50,000	±15	$ 7.50	$ 6.25	$ 5.00
MC1747L	632	0.5	50,000	±15	18.75	15.60	12.50
MC1537L†	632	0.5	25,000	±15	4.90	4.05	3.25
MC1535G†	602B	3.0	4,000	±6.0	12.75	10.60	8.50

Temperature 0° C to +75° C.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1458G*	601	0.5	20,000	±15	$1.73	$1.73	$1.35
MC1747CL	632	0.5	25,000	±15	6.75	5.60	4.50
MC1458CG	601	0.7	20,000	±15	1.58	1.58	1.23
MC1437L†	632	1.5	15,000	±15	2.65	2.20	1.75
MC1435G†	602B	5.0	3,500	±6.0	2.25	1.90	1.50

*Also available as nonencapsulated chip or flip-chip. †Noncompensated; all other types are internally compensated.

Same as above, except additional case types that are available.

Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999	Motorola Type	Case	Net Each, Lots of 1-24	25-99	100-999
MC1435F	607	$8.25	$6.85	$5.50	MC1458CL	632	$1.58	$1.58	$1.23	MC1458P2	646	$ 1.58	$ 1.58	$ 1.23
MC1435L	632	2.25	1.90	1.50	MC1458CP1	626	1.35	1.35	1.05	MC1535F	607	15.00	12.50	10.00
MC1437P2	646	2.25	1.87	1.50	MC1458CP2	646	1.43	1.43	1.11	MC1535L	632	12.75	10.60	8.50
MC1458CL	632	1.58	1.58	1.23	MC1458L	632	1.73	1.73	1.35	MC1558L	632	7.50	6.25	5.00

QUAD OPERATIONAL AMPLIFIERS

Internally compensated: MC3301P2 for automotive applications; MC3401P2 for industrial applications.

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC3301P2	646	0.3	1,000	±15	$1.05	$1.05	$0.80
MC3401P2	646	0.3	1,000	±15	1.10	.94	.75

POWER DRIVERS

High current gain (70 dB); $I_O = 300$ mA max. Internally compensated; temperature −55° C to +125° C (MC1538R); −55° C to +125° C (MC1438R).

Motorola Type	Case	Max. I_{IB} μA	Minimum A_{vol} V/V	Minimum V_O V_{pk}	Net Each, Lots of 1-24	25-99	100-999
MC1538R	614	200	900	±15	$21.00	$17.50	$14.00
MC1438R	614	300	850	±15	9.75	8.10	6.50

SEE FIRST TWO MOTOROLA IC PAGES FOR ADDITIONAL CASE ILLUSTRATIONS

INTERFACE CIRCUITS

Interface circuits fit in the gray area between the linear and digital realms. Usually these ICs perform the necessary translation between an analog signal input and the required digital logic levels or vice versa.

SENSE AMPLIFIERS—CORE AND PLATED-WIRE MEMORY

Provide the necessary translation from outputs of core or plated-wire to MTTL (unless otherwise noted) logic levels. Temperature −55° C to +125° C, MC5500/1500 Series; 0° C to +70° C, MC7500/1400 Series. Power supply, ±5.0 V except as otherwise noted.

Function	Threshold Voltage at V_{ref} mV	mV	Max. t_p ns	Case	Motorola Type	Net Each, Lots of 1-24	25-99	100-999
Dual channel with independent gating, complementary outputs, memory data register	11–19 36–44	15 40	55 55	620	**MC7520L**	**$ 4.85**	**$ 4.05**	**$ 3.25**
	8–22 33–47	15 40	55	620	**MC7521L**	**4.50**	**3.75**	**3.00**
Dual channel with open collector outputs, high sink current capability	11–19 36–44	15 40	45	620	**MC7522L**	**4.25**	**3.55**	**2.85**
	8–22 33–47	15 40	45	620	**MC7523L**	**3.75**	**3.10**	**2.50**
Dual with independent strobing	11–19 36–44	15 40	40	620	**MC7524L**	**4.25**	**3.55**	**2.85**
	8–22 33–47	15 40	40	620	**MC7525L**	**3.90**	**3.25**	**2.60**
Same as MC7524, MC7525 except amplifier test points included	11–19 36–44	15 40	40	620 648	**MC7528L** **MC7528P**	**4.88** **4.43**	**4.06** **3.69**	**3.25** **2.95**
	10–20 35–45	15 40	40	620	**MC5528L**	**22.50**	**18.75**	**15.00**
	8–22 33–47	15 40	40	620 620	**MC5529L** **MC7529L†**	**18.00** **2.93**	**15.00** **2.44**	**12.00** **1.95**
Same as MC7524, MC7525 except NAND outputs	11–19 36–44	15 40	40	620 648	**MC7534L** **MC7534P**	**4.88** **4.43**	**4.06** **3.69**	**3.25** **2.95**
	10–20 35–45	15 40	40	620	**MC5534L**	**22.50**	**18.75**	**15.00**
	8–22 33–47	15 40	40	620 620	**MC5535L** **MC7535L†**	**18.00** **2.93**	**15.00** **2.44**	**12.00** **1.95**
Same as MC7528, MC7529 except NAND outputs	11–19 36–34	15 40	40	620 648	**MC7538L** **MC7538P**	**4.88** **4.43**	**5.06** **3.69**	**3.25** **2.95**
	10–20 35–45	15 40	40	620	**MC5538L**	**22.50**	**18.75**	**15.00**
	8–22 33–47	15 40	40	620 620	**MC5539L** **MC7539L**	**18.00** **2.93**	**15.00** **2.44**	**12.00** **1.95**
0.5 µs cycle time, 20 ns typ. response time, —6.0 V power supply	14–20	−6	30	632 632	**MC1540L‡** **MC1440L‡**	**5.95** **1.50**	**4.95** **1.25**	**3.95** **.98**
0.4 µs cycle time, 1.5 V common-mode inputs, 1.0 mV typ. input-offset	14–20	20	30	632 632	**MC1541L§** **MC1441L♯**	**12.00** **5.25**	**10.00** **4.40**	**8.00** **3.50**
MECL compatible, +5.0, −5.2 V power supply, threshold insensitive to supply variations, comp. outputs	17–23	540	35	632	**MC1543L**	**12.00**	**10.00**	**8.00**
AC coupled, decoded input chan. selection, wired-OR output/output strobe capability, +5.0, −6.0 V power supply	1.0 typ.	....	25	620 620	**MC1544L*** **MC1444L***	**13.50** **12.00**	**11.25** **10.00**	**9.00** **8.00**

*Plated-wire memory; all other types are core memory. †Case 648 also available. ‡Case 602B available at same price; Case 606 also available, price on request. §Case 607 also available. ♯Case 607 also available at same price.

DRIVERS

Temperature 0° C to +70° C. MDTL, MTTL compatible except as otherwise noted.

Motorola Type	Case	Function	Net Each, Lots 1-24	25-99	100-999
MC75109L **MC75109P** **MC75110L** **MC75109P**	632 646 632 646	Dual line driver with inhibit inputs for party line driver applications, MTTL compatible	**$5.02** **4.20** **5.02** **4.20**	**$4.18** **3.50** **4.18** **3.50**	**$3.35** **2.80** **3.35** **2.80**
MC75113L*	632	Differential party line driver, p-p outputs	**4.65**	**3.87**	**3.10**
MC1488L† **MHP401P‡**	632 646	Quad line driver Hi-speed MOS clock driver	**8.25** **5.85**	**6.90** **4.90**	**5.50** **3.90**
MC75325L **MC75325P**	620 648	Dual memory driver with logic inputs	**4.80** **3.60**	**4.00** **3.00**	**3.20** **2.40**
MC75450L **MC75450P**	632 646	Dual peripheral positive-AND driver, 2 NPN output transistors	**2.40** **2.10**	**2.00** **1.75**	**1.60** **1.40**
MC75451P	626	MC75450 w/logic gate outputs internally connected to NPN output transistors	**1.57**	**1.31**	**1.05**
MC75452P	626	Dual pos.-NAND driver with logic gate outputs internally connected to NPN output transistors	**1.57**	**1.31**	**1.05**
MC75453P	626	MC75452P1 except positive-OR driver	**1.57**	**1.31**	**1.05**
MC75454P	626	MC75452P except positive-NOR driver	**1.57**	**1.31**	**1.05**

*MDTL compatible. †0° C to +75° C. ‡MTTL compatible.

COMPARATORS

Temperature 0° C to +75° C. A_{vol} = 1,000 V/V min. except MC1711, 700V/V min. Temperature −55° C to +125° C. avail.

MC1710CF **MC1710CG†** **MC1710CP**	606 601 646	Differential comparator, output impedance = 200 ohms	**$2.25** **.78** **.72**	**$1.90** **.78** **.72**	**$1.50** **.61** **.56**
MC1414L	632	Dual MC1710 diff. comp.	**1.50**	**1.50**	**1.17**
MC1711CF **MC1711CG†**	606 603-2	Dual w/outputs wired-OR, strobe capability	**2.25** **.90**	**1.90** **.90**	**1.50** **.70**

†Case 632 available at same price.

Temperature −40° C to +85° C. V_{IO} = 20 mVDC max.

MC3302P	646	Quad comparator	**$2.25**	**$1.90**	**$1.50**

HIGH FREQUENCY AMPLIFIERS

Temperature −55° C to +75° C.

Motorola Type	Case	Bandwidth at A_V MHz	dB	V_{OS} p-p V	Net Each, Lots of 1-24	25-99	100-999
MC1510G **MC1410G‡**	601 601	DC to 40*		4.5	**$12.00** **2.25**	**$10.00** **1.90**	**$8.00** **1.50**
MC1545F **MC1545G†** **MC1445F‡** **MC1445G†‡**	607 602A 607 602A	DC to 75*		2.5	**9.75** **8.25** **6.95** **2.25**	**8.10** **6.85** **5.80** **1.90**	**6.50** **5.50** **4.65** **1.50**
MC1550F **MC1550G**	606 602B	22 min.*		6.0	**7.25** **1.50**	**6.05** **1.00**	**4.85** **.75**
MC1552G	602B	40 35	34 40	4.2	**9.00**	**7.50**	**6.00**
MC1553G	602B	35 15	46 52	4.2	**9.00**	**7.50**	**6.00**
MC1590G	601	100 60	4 25	7.0	**5.60**	**4.70**	**3.75**
MC1733G **MC1733L** **MC1733CG‡** **MC1733CL‡**	603-02 632 603-02 632	40 90 120	52 40 20	4.0	**8.60** **8.60** **1.88** **1.88**	**7.20** **7.20** **1.88** **1.88**	**5.75** **5.75** **1.47** **1.47**

*Bandwidth value only. †Case 632 (suffix L) available at same price. ‡Temperature, 0° C to +75° C.

DIGITAL-TO-ANALOG CONVERTERS

Temperature 0° C to +70° C. MDTL, MTTL compatible. Temperature −55° C to +125° C. available.

Motorola Type	Case	Function	Net Each, Lots 1-24	25-99	100-999
MC1406L	632	6-bit D/A converter	**$5.90**	**$4.95**	**$3.95**
MC1408L6 **MC1408L7** **MC1408L8**	620 620 620	8-bit D/A converter	**5.95** **7.45** **8.95**	**4.95** **6.20** **7.45**	**3.95** **4.95** **5.95**

RECEIVERS

Temperature 0° C to +70° C; MTTL compatible.

MC75107L* **MC75107P*** **MC75108L†** **MC75108P†**	632 646 632 646	Dual line receiver with strobe inputs	**$4.80** **3.97** **4.80** **3.97**	**$4.00** **3.32** **4.00** **3.32**	**$3.20** **2.65** **3.20** **2.65**

Temperature 0° C to +75° C. MDTL, MTTL compatible.

MC1489L **MC1489AL**	632 632	Quad line receiver	**$6.00** **6.75**	**$5.00** **5.65**	**$4.00** **4.50**

*Active pullup. †Open collector output.

SEE FIRST TWO MOTOROLA IC PAGES AND FIRST LINEAR IC PAGE FOR CASE ILLUSTRATIONS

REGULATORS

P_D at $T_A = 25°$ C.

POSITIVE VOLTAGE REGULATORS

Temperature $-10°$ C to $+75°$ C.

Motorola Type	Case	V_O VDC	Maximum		Net Each, Lots of		
			I_O mADC	P_D W	1-24	25-99	100-999
MFC4060A	206A	4.6–32	200	1.0	$1.17	$1.17	$0.90
MFC6030A	643A				1.15	1.15	.88
MFC4062A	206A				1.11	1.11	.86
MFC6032A	643A				1.09	1.09	.84
MFC4063A	206A	4.6–17	200	1.0	1.05	1.05	.82
MFC6033A	643A				1.03	1.03	.80
MFC4064A	206A				1.00	1.00	.77
MFC6034A	643A				.98	.98	.75

Temperature 0° C to $+70°$ C.

Motorola Type	Case	V_O VDC	I_O mADC	P_D W	1-24	25-99	100-999
MLM305G	601	4.5–30	20	0.68	$3.00	$2.50	$2.00
MC1469G	602A	2.5–32	200	0.68	3.00	2.50	2.00
MC1469R	614		500	3.0	3.75	3.10	2.50
MC1461G	602A	2.5–32	200	0.68	5.25	4.35	3.50
MC1461R	614		500	3.0	6.75	5.60	4.50
MC1460G	602A	2.5–17	200	0.68	3.75	3.10	2.50
MC1460R	614		500	3.0	5.25	4.35	3.50
MC1723CG	603-03	2.0–37	150	0.8	1.19	1.19	.92
MC1723CL	632				1.19	1.19	.92

FIXED OUTPUT POSITIVE VOLTAGE REGULATORS

$T_J = -55°$ C to $+125°$ C.

Motorola Type	Case	V_O VDC	Maximum		Net Each, Lots of		
			I_O mADC	P_D W	1-24	25-99	100-999
MLM109K	11	4.7–5.3	1000	3.5	$28.40	$23.60	$19.00

$T_J = -25°$ C to $+125°$ C.

Motorola Type	Case	V_O VDC	I_O mADC	P_D W	1-24	25-99	100-999
MLM209K	11	4.7–5.3	1000	3.5	$11.90	$9.90	$7.95

$T_J = 0°$ C to $+125°$ C.

Motorola Type	Case	V_O VDC	Maximum		Net Each, Lots of		
			I_O mADC	P_D W	1-24	25-99	100-999
MLM309K	11	4.8–5.2	1000	3.5	$3.75	$3.15	$2.50
MC7805CP	199-04	4.8–5.2	1500	2.0	2.20	2.00	1.75
MC7806CP	199-04	5.75–6.25	1500	2.0	2.20	2.00	1.75
MC7808CP	199-04	7.7–8.3	1500	2.0	2.20	2.00	1.75
MC7812CP	199-04	11.5–12.5	1500	2.0	2.20	2.00	1.75
MC7815CP	199-04	14.4–15.6	1500	2.0	2.20	2.00	1.75
MC7818CP	199-04	17.3–18.7	1000	2.0	2.20	2.00	1.75
MC7824CP	199-04	23–35	1000	2.0	2.20	2.00	1.75

NEGATIVE AND DUAL VOLTAGE REGULATORS

Temperature $-55°$ C to $+125°$ C.

Motorola Type	Case	V_O VDC	Maximum		Net Each, Lots of		
			I_O mADC	P_D W	1-24	25-99	100-999
MC1563G	602A	−3.6–37	200	0.68	$7.90	$6.55	$5.25
MC1563R	614		500	2.4	9.75	8.15	6.50
MC1568G*	603-03	±14.8–±15.2†	100	0.8	9.37	7.80	6.25
MC1568L*	632			1.0	9.75	8.15	6.50
MC1568R*	614			2.4	10.50	8.75	7.00
MLM104G	603-02	−0.015–40	20	0.68	12.00	10.00	8.00

*Dual voltage regulator. †Preset voltage range (V_{OR}); range is adjustable by adding external resistors from ±8.0 to ±20 VDC.

Temperature $-25°$ C to $+85°$ C (MLM204); 0° C to $+75°$ C (MC1468); 0° C to $+70°$ C (MC1463, MLM304).

Motorola Type	Case	V_O VDC	Maximum		Net Each, Lots of		
			I_O mADC	P_D W	1-24	25-99	100-999
MC1463G	602A	−3.8–32	200	0.68	$4.15	$3.45	$2.75
MC1463R	614		500	2.4	5.25	4.40	3.50
MC1468G*	603-02	±14.5–±15.5†	100	0.8	4.20	3.50	2.80
MC1468L*	632			1.0	4.35	3.62	2.90
MC1468R*	614			2.4	5.62	4.68	3.75
MLM204G	603-02	−0.015–40	20	0.68	7.50	6.25	5.00
MLM304G	603-02	−0.035–30	20	0.68	3.75	3.12	2.50

SPECIAL-PURPOSE REGULATORS

Floating regulator can be used as a voltage controlled current source. Temperature $-55°$ C to $+125°$ C (MC1566); 0° C to $+75°$ C (MC1466).

MC1566L	632	0–1000‡	§	0.30	$9.75	$8.15	$6.50
MC1466L	632	0–1000‡	#	0.36	7.50	6.25	5.00

*Dual voltage regulator. †Preset voltage range (V_{OR}); range is adjustable by adding external resistors from ±8.0 to ±20 VDC. ‡Limited only by the characteristics of the external series pass transistor. §Current regulation: 0.1% +1 mA; #0.02% +1 mA.

SEE FIRST TWO MOTOROLA IC PAGES AND FIRST LINEAR IC PAGE FOR CASE ILLUSTRATIONS

CONSUMER DEVICES

TELEVISION CIRCUITS

Motorola Type	Case	Function	Net Each, Lots of		
			1-99	100-999	1000-4999
MC1326P2	646	Chroma demodulators	$1.75	$1.40	$1.25
MC1326PQ	647		1.75	1.40	1.25
MC1328P2	646*		1.70	1.35	1.20
MC1328PQ	647		1.70	1.35	1.20
MC1330P1	626	3rd IF and video detector	1.15	.90	.80
MC1345P2	646	AGC keyer, AGC amplifier, noise gate, sync separator	1.33	1.05	.95
MC1349P1	626	1st and 2nd video IF amplifier	1.15	.90	.80
MC1350P1	626		.95	.75	.68
MC1351P2	646	Sound IF, detector, limiter, audio preamplifier	1.40	1.10	1.00
MC1352P2	646	1st and 2nd video IF, AGC keyer and amplifier	1.30	1.05	.95
MC1357P2	646	Sound IF detector	1.80	1.45	1.30
MC1357PQ	647		1.80	1.45	1.30
MC1358P2	646	Sound IF detector, DC volume control, preamplifier	1.80	1.45	1.30
MC1358PQ	647		1.80	1.45	1.30
MC1364G	686	Automatic fine tuning	1.47	1.15	1.05
MC1364P2	646		1.33	1.05	.95
MC1370P	648	Chroma subcarrier system	1.80	1.45	1.30
MC1371P2	646	Chroma IF amplifier	1.80	1.45	1.30
MC1398P2	646	Chroma IF amplifier and subcarrier system	2.77	2.17	1.98

*Case 603-02 available at same price.

AUDIO CIRCUITS

Motorola Type	Case	Function	1-99	100-999	1000-4999
MC1303L	632	Dual preamplifier	$2.20	$1.75	$1.60
MC1339P2	646	Dual low-noise preamplifier	1.85	1.50	1.35
MFC4050	206A	Class A audio driver	1.00	.77	.66
MFC8020A	644A	Class B audio driver	1.62	1.12	.95
MFC8021A	644A	Class B audio driver	1.30	1.00	.85
MFC8022A	644A	Class B audio driver	1.76	1.37	1.10
MFC8040	644A	Low-noise preamplifier	1.15	.87	.74

RADIO CIRCUITS

Motorola Type	Case	Function	1-99	100-999	1000-4999
MC1304P	646	FM multiplex stereo decoder with audio muting	$1.70	$1.35	$1.20
MC1305P	646		1.70	1.35	1.20
MC1307P	646	FM multiplex stereo decoder	1.30	1.05	.95
MC1310P	646	Coilless operation MC1307P	4.10	3.30	3.00
MC1312P	646	Four-channel SQ* decoder	2.80	2.15	1.95
MC1313P	646		3.10	2.40	2.15
MC1350P	626	IF amplifier	.95	.75	.68
MC1355P	646	Limiting FM-IF amplifier	1.40	1.10	1.05
MC1355PQ	647	Limiting FM-IF amplifier	1.40	1.10	1.05
MC1357P	646	Limiting IF amplifier/quadrature detector	1.80	1.45	1.30
MC1357PQ	647		1.80	1.45	1.30
MFC4010A	206A	IF amplifier	.65	.50	.42
MFC6010	643A	IF amplifier, nonsaturating logic	.66	.52	.44

ORGAN CIRCUITS

$V_{CC} = 4.0–16$ VDC except MFC6040, 9.0–18 VDC.

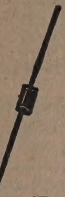
Motorola Type	Case	Function	1-99	100-999	1000-4999
MFC4040	206A	Toggle flip-flop	$0.77	$0.60	$0.50
MFC6020	643A	Dual MFC4040	1.26	.99	.83
MFC6040	643A	Electronic attenuator	1.20	.93	.79
MFC6050	643A	Dual MFC4040 w/reset	1.36	1.06	.89
MFC6060	643A	2-input AND gate	.96	.75	.63
MFC6080	643A	R-S flip-flop	1.30	1.00	.85
MFC8050	644A	J-K flip-flop	1.30	1.00	.85

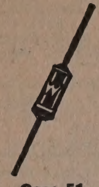
*Columbia Broadcasting Systems trademark.

DIGITAL AND LINEAR CASES

Case	Suffix	No. of Pins	Material
11	None	2	Metal
199-04	P	3	Plastic
206A	None	4	Plastic
601 (TO-99)	G	8	Metal
602A, B	G	10	Metal
603 (TO-100)	G	10	Metal
604	G	12	Metal
606 (TO-91)	F	10	Ceramic
607 (TO-86)	F	14	Ceramic
614	R	9	Metal
617	S	14	Ceramic
619-02	G	8	Metal
620	L	16	Ceramic
623	L	24	Ceramic
626	P, P1	8	Plastic
632 (TO-116)	L	14	Ceramic
637	L	14	Ceramic
638	L	16	Ceramic
641	None	10	Plastic
643A	None	6	Plastic
644A	None	8	Plastic
646 (TO-116)	P, P2	14	Plastic
647	PQ	14	Plastic
648	P	16	Plastic
649	P	24	Plastic
650	F	16	Ceramic
665	F	10	Ceramic
667	F	24	Ceramic
677	L	22	Ceramic
684	L	24	Ceramic
686	G	10	Metal
690	AL	16	Ceramic
694	L	22	Ceramic
695	L	28	Ceramic

MOTOROLA Semiconductors SILICON ZENER DIODES


Case 17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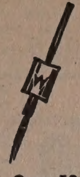
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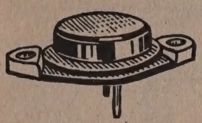
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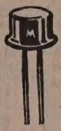
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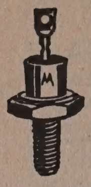
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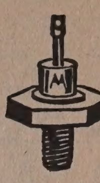
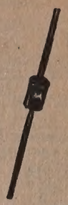

Case 58


Case 59

Extensive line of zener diodes may be employed where a nearly constant DC output voltage is required despite relatively large changes in input voltage or load resistance. The zener voltage is measured at approximately ¼ the rated power except for 1N4099 Series which is measured with an $I_{ZT}=250$ μADC, and 1N4370 and 1N746 Series which is measured with an $I_{ZT}=20$ mADC. Standard voltage tolerances of ±5%, ±10% and ±20%; low and high level zener chips; intermediate voltages and tighter tolerances; non-standard devices available to meet virtually any zener diode requirement. MIL types available as noted.

250-mW LOW NOISE (CASE 51)

Test Current (I_{ZT}): 0.250 μA. **Tol.:** ±5%. Also Available: 1N4099–1N4135 JAN, JTX to MIL-S-19500/435.

Motorola Type	Nom. V_Z at I_{ZT} V	Max. Z_{ZT} at I_{ZT} Ω	Motorola Type	Nom. V_Z at I_{ZT} V	Max. Z_{ZT} at I_{ZT} Ω
1N4099	6.8	200	1N4118	27	150
1N4100	7.5	200	1N4119	28	200
1N4101	8.2	200	1N4120	30	200
1N4102	8.7	200	1N4121	33	200
1N4103	9.1	200	1N4122	36	200
1N4104	10	200	1N4123	39	200
1N4105	11	200	1N4124	43	250
1N4106	12	200	1N4125	47	250
1N4107	13	200	1N4126	51	300
1N4108	14	200	1N4127	56	300
1N4109	15	100	1N4128	60	400
1N4110	16	100	1N4129	62	500
1N4111	17	100	1N4130	68	700
1N4112	18	100	1N4131	75	700
1N4113	19	150	1N4132	82	800
1N4114	20	150	1N4133	87	1000
1N4115	22	150	1N4134	91	1200
1N4116	24	150	1N4135	100	1500
1N4117	25	150			

Motorola Type	Net Each, Lots of 1-99	Net Each, Lots of 100-999
1N4099-1N4135	$3.85	$2.90

400-mW DIFFUSED (CASE 51)

Also Available: 1N962B–1N992B JAN, JTX to MIL-S-19500/117; S1N962B–S1N973B NASA types.

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-999
1N957	6.8	18.5	4.5		
1N958	7.5	16.5	5.5	±20% Tol. $2.15	±20% Tol. $1.60
1N959	8.2	15	6.5		
1N960	9.1	14	7.5		
1N961	10.0	12.5	8.5		
1N962	11	11.5	9.5		
1N963	12	10.5	11.5	±10%* Tol. $2.35	±10%* Tol. $1.75
1N964	13	9.5	13.0		
1N965	15	8.5	16.0		
1N966	16	7.8	17.0		
1N967	18	7.0	21		
1N968	20	6.2	25	±5%† Tol. $2.95	±5%† Tol. $2.20
1N969	22	5.6	29		
1N970	24	5.2	33		
1N971	27	4.6	41		
1N972	30	4.2	49		
1N973	33	3.8	58	±20% Tol. $2.15	±20% Tol. $1.60
1N974	36	3.4	70		
1N975	39	3.2	80		
1N976	43	3.0	93		
1N977	47	2.7	105	±10%* Tol. $2.35	±10%* Tol. $1.75
1N978	51	2.5	125		
1N979	56	2.2	150		
1N980	62	2.0	185		
1N981	68	1.8	230	±5%† Tol. $2.95	±5%† Tol. $2.20
1N982	75	1.7	270		
1N983	82	1.5	330		
1N984	91	1.4	400		
1N985	100	1.3	500	±20% $2.60	±20% $1.95
1N986	110	1.1	750		
1N987	120	1.0	900		
1N988	130	0.95	1100	±10%* $3.00	±10%* $2.25
1N989	150	0.85	1500		
1N990	160	0.80	1700		
1N991	180	0.68	2200	±5%† $3.65	±5%† $2.75
1N992	200	0.65	2500		

To Order Add Suffix: ***A** (1N957**A**); †**B** (1N957**B**).

400-mW LOW VOLTAGE (CASE 51)

Also Available: 1N746A–1N4372A JAN, JTX to MIL-S-19500/127; S1N746A–S1N759A NASA types.

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	Net Each, Lots of 100-999
1N746	3.3	20	28		
1N747	3.6	20	24		
1N748	3.9	20	23		
1N749	4.3	20	22		
1N750	4.7	20	19	±10% Tol. $2.00	±10% Tol. $1.50
1N751	5.1	20	17		
1N752	5.6	20	11		
1N753	6.2	20	7		
1N754	6.8	20	5		
1N755	7.5	20	6	±5% * Tol. $2.75	±5%* Tol. $2.05
1N756	8.2	20	8		
1N757	9.1	20	10		
1N758	10.0	20	17		
1N759	12.0	20	30		
1N4370	2.4	20	30		
1N4371	2.7	20	30		
1N4372	3.0	20	29		

1-WATT LOW VOLTAGE (CASE 52)

Also Available: 1N3821A–1N3828A JAN, JTX to MIL-S-19500/115.

1N3821	3.3	76	10		
1N3822	3.6	69	10	±10% Tol. $2.10	±10% Tol. $1.60*
1N3823	3.9	64	9		
1N3824	4.3	58	9		
1N3825	4.7	53	8		
1N3826	5.1	49	7		
1N3827	5.6	45	5	±5%* Tol. $2.65	±5%* Tol. $2.00*
1N3828	6.2	41	2		
1N3829	6.8	37	1.5		
1N3830	7.5	34	1.5		

1-WATT SURMETIC™ (CASE 59)

1N4728	3.3	76	10		
1N4729	3.6	69	10		
1N4730	3.9	64	9		
1N4731	4.3	58	9		
1N4732	4.7	53	8		
1N4733	5.1	49	7		
1N4734	5.6	45	5		
1N4735	6.2	41	2		
1N4736	6.8	37	3.5		
1N4737	7.5	34	4		
1N4738	8.2	31	4.5		
1N4739	9.1	28	5		
1N4740	10	25	7		
1N4741	11	23	8	±10% Tol. $1.26	±10% Tol. $0.95
1N4742	12	21	9		
1N4743	13	19	10		
1N4744	15	17	14		
1N4745	16	15.5	16		
1N4746	18	14	20		
1N4747	20	12.5	22		
1N4748	22	11.5	23	±5%* Tol. $1.93	±5%* Tol. $1.45
1N4749	24	10.5	25		
1N4750	27	9.5	35		
1N4751	30	8.5	40		
1N4752	33	7.5	45		
1N4753	36	7	50		
1N4754	39	6.5	60		
1N4755	43	6	70		
1N4756	47	5.5	80		
1N4757	51	5	95		
1N4758	56	4.5	110		
1N4759	62	4	125		
1N4760	68	3.7	150		
1N4761	75	3.3	175		
1N4762	82	3.0	200		
1N4763	91	2.8	250		
1N4764	100	2.5	350		

*To order add suffix **A** (1N746**A**, 1N3821**A**, 1N4728**A**). *100–299 quantity.

500-mW SURMETIC

Tolerance, ±10%; for ±5% tolerance, change suffix A to **B** (1N5221**B**, 1N5873**B**). Other standard voltages available: 2.5, 2.8, 6.0, 8.7, 14, 17, 19, 25, 28, 60, 87, 140, 170 and 190.

Motorola Type Case 51	Motorola Type Case 182	Nom. V_Z at I_{ZT} V	Max. Z_{ZT} at I_{ZT} Ohms
1N5221A	1N5837A	2.4	30
1N5223A	1N5839A	2.7	30
1N5225A	1N5841A	3.0	29
1N5226A	1N5842A	3.3	28
1N5227A	1N5843A	3.6	24
1N5228A	1N5844A	3.9	23
1N5229A	1N5845A	4.3	22
1N5230A	1N5846A	4.7	19
1N5231A	1N5847A	5.1	17
1N5232A	1N5848A	5.6	11
1N5234A	1N5850A	6.2	7
1N5235A	1N5851A	6.8	5
1N5236A	1N5852A	7.5	6
1N5237A	1N5853A	8.2	8
1N5239A	1N5855A	9.1	10
1N5240A	1N5856A	10	17
1N5241A	1N5857A	11	22
1N5242A	1N5858A	12	30
1N5243A	1N5859A	13	13
1N5245A	1N5861A	15	16
1N5246A	1N5862A	16	17
1N5248A	1N5864A	18	21
1N5250A	1N5866A	20	25
1N5251A	1N5867A	22	29
1N5252A	1N5868A	24	33
1N5254A	1N5870A	27	41
1N5256A	1N5872A	30	49
1N5257A	1N5873A	33	58
1N5258A	1N5874A	36	70
1N5259A	1N5875A	39	80
1N5260A	1N5876A	43	93
1N5261A	1N5877A	47	105
1N5262A	1N5878A	51	125
1N5263A	1N5879A	56	150
1N5265A	1N5881A	62	185
1N5266A	1N5882A	68	230
1N5267A	1N5883A	75	270
1N5268A	1N5884A	82	330
1N5270A	1N5886A	91	400
1N5271A	1N5887A	100	500
1N5272A	1N5888A	110	750
1N5273A	1N5889A	120	900
1N5274A	1N5891A	130	1100
1N5276A	1N5892A	150	1500
1N5277A	1N5893A	160	1700
1N5279A	1N5895A	180	2200
1N5281A	1N5897A	200	2500

±10% TOLERANCE

Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-249
1N5221A-1N5257A	$0.90	$0.80	$0.60
1N5258A-1N5270A	1.12	1.00	.75
1N5271A-1N5281A	1.50	1.33	1.00

Motorola Type	1-99	100-499	500-999
1N5837A-1N5873A	$0.72	$0.54	$0.49
1N5874A-1N5886A	.90	.68	.60
1N5887A-1N5897A	1.20	.90	.81

±5% TOLERANCE

Motorola Type	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-249
1N5221B-1N5257B	$1.05	$0.93	$0.70
1N5258B-1N5270B	1.27	1.13	.85
1N5271B-1N5281B	1.65	1.46	1.10

Motorola Type	1-99	100-499	500-999
1N5837B-1N5873B	$0.84	$0.63	$0.57
1N5874B-1N5886B	1.02	.77	.68
1N5887B-1N5897B	1.31	1.00	.90

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

MOTOROLA Semiconductors SILICON ZENER DIODES

1-WATT DIFFUSED (CASE 52)

Also Available: 1N3016B–1N3051B JAN, JTX, JTXV to MIL-S-19500/115; S1N3016B–S1N3051B NASA types.

Motorola Type	Nom. V_Z at I_{ZT} Volts	Test I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-299
1N3016	6.8	37	3.5		
1N3017	7.5	34	4.0		
1N3018	8.2	31	4.5		
1N3019	9.1	28	5.0		
1N3020	10	25	7		
1N3021	11	23	8	**±20% Tol. $2.85**	**±20% Tol. $2.15**
1N3022	12	21	9		
1N3023	13	19	10		
1N3024	15	17	14		
1N3025	16	15.5	16		
1N3026	18	14	20		
1N3027	20	12.5	22		
1N3028	22	11.5	23		
1N3029	24	10.5	25	**±10%* Tol. $3.20**	**±10%* Tol. $2.40**
1N3030	27	9.5	35		
1N3031	30	8.5	40		
1N3032	33	7.5	45		
1N3033	36	7.0	50		
1N3034	39	6.5	60		
1N3035	43	6.0	70		
1N3036‡	47	5.5	80		
1N3037	51	5.0	95	**±5%† Tol. $3.70**	**±5%† Tol. $2.80**
1N3038	56	4.5	110		
1N3039	62	4.0	125		
1N3040	68	3.7	150		
1N3041	75	3.3	175		
1N3042	82	3.0	200		
1N3043	91	2.8	250		
1N3044	100	2.5	350		
1N3045	110	2.3	450	**±20% $2.95**	**±20% $2.20**
1N3046	120	2.0	550		
1N3047	130	1.9	700	**±10%* $3.25**	**±10%* $2.45**
1N3048	150	1.7	1000		
1N3049	160	1.6	1100		
1N3050	180	1.4	1200	**±5%† $4.65**	**±5%† $3.50**
1N3051	200	1.2	1500		

To Order Add Suffix: ***A** (1N3016**A**); †**B** (1N3016**B**). ‡Not available in ±10% tol.

1½-WATT DIFFUSED (CASE 55)

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-299
1N3785	6.8	55	2.7		
1N3786	7.5	50	3.0		
1N3787	8.2	46	3.5		
1N3788	9.1	41	4.0		
1N3789	10	37	5		
1N3790	11	34	6	**±20% Tol. $3.75**	**±20% Tol. $2.80**
1N3791	12	31	7		
1N3792	13	29	8		
1N3793	15	25	10		
1N3794	16	23	11		
1N3795	18	21	13		
1N3796	20	19	15		
1N3797	22	17	16		
1N3798	24	16	17	**±10%* Tol. $5.30**	**±10%* Tol. $4.00**
1N3799	27	14	20		
1N3800	30	12	25		
1N3801	33	11	30		
1N3802	36	10	35		
1N3803	39	10	40		
1N3804	43	9.0	45		
1N3805	47	8.0	55		
1N3806	51	7.4	65	**±5%† Tol. $6.95**	**±5%† Tol. $5.25**
1N3807	56	6.7	75		
1N3808	62	6.0	85		
1N3809	68	5.5	95		
1N3810	75	5.0	110		
1N3811	82	4.5	130		
1N3812	91	4.1	150		
1N3813	100	3.7	200		
1N3814	110	3.4	300	**$4.75‡ 6.45§ 8.35#**	**$3.55‡ 4.85§ 6.30#**
1N3815	120	3.1	350		
1N3816	130	2.9	400		
1N3817	150	2.5	700	**$4.75‡ 7.05§ 8.80#**	**$3.55‡ 5.30§ 6.60#**
1N3818	160	2.3	750		
1N3819	180	2.1	800		
1N3820	200	1.9	1000		

To Order Add Suffix; ***A** (1N3785**A**); †**B** (1N3785**B**). ‡For ±20% tolerance. §For ±10% tolerance, add suffix **A**. #For ±5% tolerance, add suffix **B**.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SEE PREVIOUS PAGE FOR CASE ILLUSTRATIONS.

5-WATT SURMETIC™ (CASE 17)

Tolerance ±10%; for ±5%, use suffix **B** (1N5333**B**). Tolerance of ±20% available at same price as ±10% tolerance: Specify 1N5333–1N5388 (no suffix).

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-999
1N5333A	3.3	380	3.0		
1N5334A	3.6	350	2.5		
1N5335A	3.9	320	2.0		
1N5336A	4.3	290	2.0		
1N5337A	4.7	260	2.0		
1N5338A	5.1	240	1.5		
1N5339A	5.6	220	1.0		
1N5341A	6.2	200	1.0		
1N5342A	6.8	175	1.0		
1N5343A	7.5	175	1.5		
1N5344A	8.2	150	1.5		
1N5346A	9.1	150	2.0		
1N5347A	10	125	2.0		
1N5348A	11	125	2.5		
1N5349A	12	100	2.5	**±10% Tol. $2.20**	**±10% Tol. $1.65**
1N5350A	13	100	2.5		
1N5352A	15	75	2.5		
1N5353A	16	75	2.5		
1N5355A	18	65	2.5		
1N5357A	20	65	3.0		
1N5358A	22	50	3.5	**±5% Tol. $2.45**	**±5% Tol. $1.85**
1N5359A	24	50	3.5		
1N5361A	27	50	5.0		
1N5363A	30	40	8.0		
1N5364A	33	40	10		
1N5365A	36	30	11		
1N5366A	39	30	14		
1N5367A	43	30	20		
1N5368A	47	25	25		
1N5369A	51	25	27		
1N5370A	56	20	35		
1N5372A	62	20	42		
1N5373A	68	20	44		
1N5374A	75	20	45		
1N5375A	82	15	65		
1N5377A	91	15	75		
1N5378A	100	12	90		
1N5379A	110	12	125	**±10% Tol. $2.60**	**±10% Tol. $1.95**
1N5380A	120	10	170		
1N5381A	130	10	190		
1N5383A	150	8	330		
1N5384A	160	8	350	**±5% Tol. $2.85**	**±5% Tol. $2.15**
1N5386A	180	5	430		
1N5388A	200	5	480		

10-WATT DIFFUSED (CASE 56)

Also Available: 1N2970B, RB–1N3015B, RB JAN, JTX to MIL-S-19500/124; S1N2970B–S1N2985B and S1N2991B NASA types. For reverse polarity units, at prices shown, add suffix **R** (1N2970**R**).

Motorola Type	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-299
1N2970	6.8	370	1.2		
1N2971	7.5	335	1.3		
1N2972	8.2	305	1.5		
1N2973	9.1	275	2.0		
1N2974	10	250	3		
1N2975	11	230	3		
1N2976	12	210	3		
1N2977	13	190	3		
1N2979	15	170	3		
1N2980	16	155	4		
1N2982	18	140	4		
1N2984	20	125	4		
1N2985	22	115	5	**±20% Tol.**	**±20% Tol.**
1N2986	24	105	5		
1N2988	27	95	7		
1N2989	30	85	8	**±10%* Tol. $5.85**	**±10%* Tol. $4.40**
1N2990	33	75	9		
1N2991	36	70	10		
1N2992	39	65	11		
1N2993	43	60	12	**±5%† $7.30**	**±5%† $5.50**
1N2995	47	55	14		
1N2997	51	50	15		
1N2999	56	45	16		
1N3000	62	40	17		
1N3001	68	37	18		
1N3002	75	33	22		
1N3003	82	30	25		
1N3004	91	28	35		
1N3005	100	25	40		
1N3007	110	23	55		
1N3008	120	20	75		
1N3009	130	19	100		
1N3011	150	17	175		
1N3012	160	16	200	**$ 6.00‡ 9.00§ 13.75#**	**$ 4.50‡ 6.75§ 10.35#**
1N3014	180	14	260		
1N3015	200	12	300		

To Order Add Suffix: ***A** (1N2970**A**); †**B** (1N2970**B**). ‡For ±20% tolerance. §For ±10% tolerance, add suffix **A**. #For ±5% tol., add suffix **B**.

10-WATT LOW VOLTAGE (CASE 56)

Also Available: 1N3993A, RA–1N4000A, RA JAN, JTX to MIL-S-19500/272. For reverse polarity units, at prices shown, add suffix **R** (1N3993**R**). Vz value given is nominal.

Motorola Type	V_Z at I_{ZT} Volts	I_{ZT} mA	Max. Z_{ZT} at I_{ZT} Ω	Net Each, Lots of 1-99	100-299
1N3993	3.9	640	2		
1N3994	4.3	580	1.5	**±10% Tol. $5.65**	**±10% Tol. $4.25**
1N3995	4.7	530	1.2		
1N3996	5.1	490	1.1		
1N3997	5.6	445	1.0		
1N3998	6.2	405	1.1	**±5%* Tol. $7.70**	**±5%* Tol. $5.80**
1N3999	6.8	370	1.2		
1N4000	7.5	335	1.3		

*To order add suffix **A** (1N3993**A**).

50-WATT DIFFUSED (CASES 54, 58)

Also Available: Case 54, 1N2804B, RB–1N2846B, RB JAN, JTX to MIL-S-19500/114. Case 58, 1N3305B, RB–1N4554B, RB JAN, JTX to MIL-S-19500/358. For reverse polarity units, at prices shown, add suffix **R** (1N2804**R**, 1N3305**R**, 1N3305**R**B).

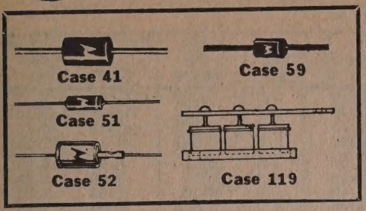
Motorola Type (Case 54)	(Case 58)	Nom. V_Z at I_{ZT} Volts	I_{ZT} mA	Max Z_{ZT} at I_{ZT} Ohms
1N2804	**1N3305**	6.8	1850	0.2
1N2805	**1N3306**	7.5	1700	0.3
1N2806	**1N3307**	8.2	1500	0.4
1N2807	**1N3308**	9.1	1370	0.5
1N2808	**1N3309**	10	1200	0.6
1N2809	**1N3310**	11	1100	0.8
1N2810	**1N3311**	12	1000	1.0
1N2811	**1N3312**	13	960	1.1
1N2812*	**1N3313***	14	890	1.2
1N2813	**1N3314**	15	830	1.4
1N2814	**1N3315**	16	780	1.6
1N2815*	**1N3316***	17	740	1.8
1N2816	**1N3317**	18	700	2.0
1N2817*	**1N3318***	19	660	2.2
1N2818	**1N3319**	20	630	2.4
1N2819	**1N3320**	22	570	2.5
1N2820	**1N3321**	24	520	2.6
1N2821*	**1N3322***	25	500	2.7
1N2822	**1N3323**	27	460	2.8
1N2823	**1N3324**	30	420	3.0
1N2824	**1N3325**	33	380	3.2
1N2825	**1N3326**	36	350	3.5
1N2826	**1N3327**	39	320	4.0
1N2827	**1N3328**	43	290	4.5
1N2828*	**1N3329***	45	280	4.5
1N2829	**1N3330**	47	270	5.0
1N2830*	**1N3331***	50	250	5.0
1N2831	**1N3332**	51	245	5.2
....	**1N3333***	52	240	5.5
1N2832	**1N3334**	56	220	6
1N2833	**1N3335**	62	200	7
1N2834	**1N3336**	68	180	8
1N2835	**1N3337**	75	170	9
1N2836	**1N3338**	82	150	11
1N2837	**1N3339**	91	140	15
1N2838	**1N3340**	100	120	20
1N2839*	**1N3341***	105	120	25
1N2840	**1N3342**	110	110	30
1N2841	**1N3343**	120	100	40
1N2842	**1N3344**	130	95	50
....	**1N3345***	140	90	60
1N2843	**1N3346**	150	85	75
1N2844	**1N3347**	160	80	80
....	**1N3348***	175	70	85
1N2845	**1N3349**	180	68	90
1N2846	**1N3350**	200	65	100
1N4557	**1N4549**	3.9	3200	0.16
1N4558	**1N4550**	4.3	2900	0.16
1N4559	**1N4551**	4.7	2650	0.12
1N4560	**1N4552**	5.1	2450	0.12
1N4561	**1N4553**	5.6	2250	0.12
1N4562	**1N4554**	6.2	2000	0.14
1N4563	**1N4555**	6.8	1850	0.16
1N4564	**1N4556**	7.5	1650	0.24

*MIL types not available.

Motorola Type	Tol.	Net Ea., Lots 1-99	100-999
1N2804–1N2838	±20%	**$5.65**	**$ 4.25**
1N2804A–1N2838A	±10%	**7.65**	**5.75**
1N2804B–1N2838B	± 5%	**10.65**	**8.00**
1N2839–1N2846	±20%	**6.80**	**5.10**
1N2839A–1N2846A	±10%	**11.30**	**8.50**
1N2839B–1N2846B	± 5%	**17.95**	**13.50**
1N3305–1N3340	±20%	**5.65**	**4.25**
1N3305A–1N3340A	±10%	**7.65**	**5.75**
1N3305B–1N3340B	± 5%	**10.65**	**8.00**
1N3341–1N3350	±20%	**6.80**	**5.10**
1N3341A–1N3350A	±10%	**11.30**	**8.50**
1N3341B–1N3350B	± 5%	**17.95**	**13.50**
1N4549–1N4564	±20%	**6.05**	**4.55**
1N4549A–1N4564A	±10%	**8.00**	**6.00**
1N4549B–1N4564B	± 5%	**11.50**	**8.65**

MOTOROLA Semiconductors

SILICON ZENER REFERENCE DIODES



Extremely stable voltage reference sources. Diffused junction units combine smallest size with tight stability.

400-MW SUBMINIATURE

6.2 VOLT (CASE 51)

Temperature Range: −55° C to +100° C. **Voltage Range:** 5.9–6.5 volts at 7.5 mA. **Dynamic Impedance:** 15 ohms max.; 10 ohms suffix **A**.

Motorola Type	Avg. TC %/° C	Net Each, Lots of		
		1-24	25-99	100-299
1N821*	.01	$ 2.75	$ 2.35	$ 1.90
1N821A	.01	3.05	2.60	2.10
1N823*	.005	3.60	3.10	2.50
1N823A	.005	3.90	3.35	2.70
1N825*	.002	5.80	5.00	4.00
1N825A	.002	6.50	5.60	4.50
1N827*	.001	10.85	9.35	7.50
1N827A	.001	13.05	11.25	9.00
1N829*	.0005	16.30	14.05	11.25
1N829A	.0005	19.55	16.85	13.50

*JAN, JTX, JTXV available to MIL-S-19500/159.

8.4 VOLT (CASE 51)

Temperature Range: −55° C to +100° C; −55° C to +150° C (suffix **A**). **Voltage Range:** 7.98–8.8 volts at 10 mA. **Dynamic Impedance:** 15 ohms maximum.

1N3154*	.01	$ 2.60	$2.25	$1.80
1N3154A	.01	3.60	3.10	2.50
1N3155*	.005	3.55	3.05	2.45
1N3155A	.005	4.35	3.75	3.00
1N3156*	.002	6.15	5.30	4.25
1N3156A	.002	7.10	6.10	4.90
1N3157*	.001	7.60	6.55	5.25
1N3157A	.001	11.10	9.55	7.65

*JAN, JTX available to MIL-S-19500/158.

500-MW SUBMINIATURE

9.0 VOLT (CASE 51)

Temperature Range: 0° C to +75° C; −55° C to +100° C (suffix **A**); −55° C to +150° C (suffix **B**). **Voltage Range:** 8.55–9.45 volts at 7.5 mA, 25° C ambient. **Dynamic Impedance:** 20 ohms max.

Motorola Type	Avg. TC %/° C	Net Each, Lots of		
		1-24	25-99	100-299
1N935	.01	$ 2.30	$ 2.00	$ 1.60
1N935A	.01	2.60	2.25	1.80
1N935B*	.01	3.55	3.05	2.45
1N936	.005	2.75	2.35	1.90
1N936A	.005	3.55	3.05	2.45
1N936B	.005	4.20	3.60	2.90
1N937	.002	5.35	4.60	3.70
1N937A	.002	6.15	5.30	4.25
1N937B*	.002	7.10	6.10	4.90
1N938	.001	6.95	6.00	4.80
1N938A	.001	7.55	6.50	5.20
1N938B*	.001	10.00	8.60	6.90
1N939	.0005	18.00	15.50	12.40
1N939A	.0005	25.35	21.85	17.50
1N939B*	.0005	27.35	23.55	18.85

*JAN, JTX, JTXV available to MIL-S-19500/156.

11.7 VOLT (CASE 51)

Temperature Range: 0° C to +75° C; −55° C to +100° C (suffix **A**); −55° C to +150° C (suffix **B**). **Voltage Range:** 11.12–12.29 volts at 7.5 mA. **Dynamic Impedance:** 30 ohms max.

1N941	.01	$ 3.20	$ 2.75	$ 2.20
1N941A	.01	3.40	2.90	2.34
1N941B*	.01	3.60	3.10	2.50
1N942	.005	3.50	3.00	2.40
1N942A	.005	4.35	3.75	3.00
1N942B	.005	4.95	4.25	3.40
1N943	.002	6.90	5.95	4.75
1N943A	.002	6.95	6.00	4.80
1N943B*	.002	7.15	6.20	4.95
1N944	.001	10.15	8.75	7.00
1N944A	.001	13.05	11.25	9.00
1N944B*	.001	17.30	14.95	11.95
1N945	.0005	26.70	23.00	18.40
1N945A	.0005	36.40	31.35	25.10
1N945B*	.0005	40.90	35.25	28.20

*JAN, JTX available to MIL-S-19500/157.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

250-MW LOW LEVEL SUBMINIATURE

Temperature Range: 0° C to +75° C; −55° C to +100° C (suffix **A**).

6.4 VOLT (CASE 51)

Test Current: 0.5 mA. **Dynamic Impedance:** 200 ohms maximum.

Motorola Type	Avg. TC %/° C	Net Each, Lots of	
		1-99	100-299
1N4565	.01	$ 8.65	$ 6.50
1N4565A	.01	9.70	7.30
1N4566	.005	11.70	8.80
1N4566A	.005	13.05	9.80
1N4567	.002	23.80	17.90
1N4567A	.002	26.45	19.90
1N4568	.001	41.10	30.90
1N4568A	.001	45.75	34.40
1N4569	.0005	89.50	67.30
1N4569A	.0005	99.50	74.80

Test Current: 1.0 mA. **Dynamic Impedance:** 100 ohms maximum.

1N4570	.01	$ 5.85	$ 4.40
1N4570A	.01	6.50	4.90
1N4571	.005	7.30	5.50
1N4571A	.005	8.10	6.10
1N4572	.002	13.25	9.95
1N4572A	.002	14.75	11.10
1N4573	.001	24.25	18.25
1N4573A	.001	27.00	20.30
1N4574	.0005	56.50	42.50
1N4574A	.0005	63.15	47.50

Test Current: 2.0 mA. **Dynamic Impedance:** 50 ohms maximum.

1N4575	.01	$ 3.00	$ 2.25
1N4575A	.01	3.30	2.50
1N4576	.005	3.65	2.75
1N4576A	.005	4.05	3.05
1N4577	.002	6.60	4.95
1N4577A	.002	7.30	5.50
1N4578	.001	12.15	9.15
1N4578A	.001	13.50	10.15
1N4579	.0005	28.25	21.25
1N4579A	.0005	31.40	23.60

Test Current: 4.0 mA. **Dynamic Impedance:** 25 ohms maximum.

1N4580	.01	$ 3.00	$ 2.25
1N4580A	.01	3.30	2.50
1N4581	.005	3.65	2.75
1N4581A	.005	4.05	3.05
1N4582	.002	6.60	4.95
1N4582A	.002	7.30	5.50
1N4583	.001	12.15	9.15
1N4583A	.001	13.50	10.15
1N4584	.0005	28.25	21.25
1N4584A	.0005	31.40	23.60

8.5 VOLT (CASE 51)

Test Current: 0.5 mA. **Dynamic Impedance:** 200 ohms maximum.

Motorola Type	Avg. TC %/° C	Net Each, Lots of	
		1-99	100-299
1N4775	.01	$ 8.65	$ 6.50
1N4775A	.01	9.70	7.30
1N4776	.005	11.70	8.80
1N4776A	.005	13.05	9.80
1N4777	.002	23.80	17.90
1N4777A	.002	26.46	19.90
1N4778	.001	41.10	30.90
1N4778A	.001	45.75	34.40
1N4779	.0005	89.50	67.30
1N4779A	.0005	99.50	74.80

Test Current: 1.0 mA. **Dynamic Impedance:** 100 ohms maximum.

1N4780	.01	$ 5.85	$ 4.40
1N4780A	.01	6.50	4.90
1N4781	.005	7.30	5.50
1N4781A	.005	8.10	6.10
1N4782	.002	13.25	9.95
1N4782A	.002	14.75	11.10
1N4783	.001	24.25	18.25
1N4783A	.001	27.00	20.30
1N4784	.0005	56.50	42.50
1N4784A	.0005	63.15	47.50

9.1 VOLT (CASE 51)

Test Current: 0.5 mA. **Dynamic Impedance:** 350 ohms maximum.

1N4765	.01	$ 8.65	$ 6.50
1N4765A	.01	9.70	7.30
1N4766	.005	11.70	8.80
1N4766A	.005	13.05	9.80
1N4767	.002	23.80	17.90
1N4767A	.002	26.45	19.90
1N4768	.001	41.10	30.90
1N4768A	.001	45.75	34.40
1N4769	.0005	89.50	67.30
1N4769A	.0005	99.50	74.80

Test Current: 0.5 mA. **Dynamic Impedance:** 200 ohms maximum.

1N4770	.01	$ 5.85	$ 4.40
1N4770A	.01	6.50	4.90
1N4771	.005	7.30	5.50
1N4771A	.005	8.10	6.10
1N4772	.002	13.25	9.95
1N4772A	.002	14.75	11.10
1N4773	.001	24.25	18.25
1N4773A	.001	27.00	20.30
1N4774	.0005	56.50	42.50
1N4774A	.0005	63.15	47.50

750-MW MINIATURE

9.3 VOLT (CASE 52)

Temperature Range: 0° C to +75° C; −55° C to +100° C (suffix **A**); −55° C to +150° C (suffix **B**). **Voltage Range:** 8.9–9.7 volts at 10 mA. **Dynamic Impedance:** 15 ohms maximum.

Motorola Type	Avg. TC %/° C	Net Each, Lots of	
		1-99	100-299
1N2620	.01	$ 4.10	$ 3.05
1N2620A	.01	4.35	3.25
1N2620B	.01	4.90	3.65
1N2621	.005	4.60	3.45
1N2621A	.005	5.55	4.15
1N2621B	.005	6.75	5.05
1N2622	.002	7.60	5.70
1N2622A	.002	8.15	6.10
1N2622B	.002	9.35	7.00
1N2623	.001	8.80	6.60
1N2623A	.001	10.05	7.55
1N2623B	.001	13.50	10.15
1N2624	.0005	22.00	16.05
1N2624A	.0005	28.80	21.65
1N2624B	.0005	38.50	28.95

11.7 VOLT (CASE 52)

Temperature Range: 0° C to +75° C; −55° C to +100° C (suffix **A**); −55° C to +150° C (suffix **B**). **Voltage Range:** 11.12–12.28 volts at 7.5 mA. **Dynamic Impedance:** 25 ohms maximum.

1N3580	.01	$ 4.90	$ 3.65
1N3580A	.01	5.20	3.90
1N3580B	.01	6.00	4.50
1N3581	.005	5.55	4.15
1N3581A	.005	6.45	4.85
1N3581B	.005	7.75	5.80
1N3582	.002	8.95	6.70
1N3582A	.002	9.80	7.35
1N3582B	.002	10.90	8.20
1N3583	.001	10.90	8.20
1N3583A	.001	11.80	8.85
1N3583B	.001	15.65	11.75

9.4 VOLT (CASE 52)

Temperature Range: 1N2163–1N2169A, 0° C to +70° C; 1N2164–1N2170A, −55° C to +125° C; 1N2165–1N2171A, −55° C to +185° C. **Voltage:** $V_Z = 9.4$ volts ±0.4 V; ±0.2 V (suffix **A**). **Dynamic Impedance:** 15 ohms maximum.

Motorola Type	Avg. TC %/° C	Net Each, Lots of	
		1-99	100-299
1N2163	.005	$ 3.30	$ 2.50
1N2163A	.005	3.45	2.60
1N2166	.001	6.80	5.10
1N2166A	.001	8.10	6.10
1N2169	.0005	16.95	12.75
1N2169A	.0005	25.00	18.80
1N2164	.005	4.50	3.40
1N2164A	.005	5.50	4.15
1N2167	.001	8.65	6.50
1N2167A	.001	11.05	8.30
1N2170	.0005	23.95	18.00
1N2170A	.0005	36.95	27.80
1N2165	.005	5.65	4.25
1N2165A	.005	7.30	5.50
1N2168	.001	11.90	8.95
1N2168A	.001	15.95	12.00
1N2171	.0005	34.85	26.20
1N2171A	.0005	44.50	33.50

SURMETIC™ FORWARD REFERENCE DIODES (CASE 51)

$I_R = 10\ \mu A$ max. at $V_R = 5.0$ V. MZ2360 in Case 59.

Motorola Type	V_F at I_F		Net Ea., Lots	
	V	mA	1-99	100-999
MZ2360	0.63–0.71	10	$0.28	$0.19
MZ2361	1.24–1.38	10	.57	.38
MZ2362	1.90–2.10	10	.84	.57

MOTOROLA Semiconductors

SILICON REFERENCE DIODES, MICROCIRCUIT COMPONENTS

ZENER REFERENCE DIODES (CASE 41, 51)

Temperature Range: +25° C to +100° C except **1N4896A** thru 1N4932A −55° C to +100° C. Series 1N4000 molded assemblies (Case 41); 1N4896 thru 1N4932A low noise reference diodes (Case 51).

Motorola Type	V_Z V	ΔV_Z V	I_{ZT} DC mA	Avg. TC %/°C	Net Each, Lots of	
					1-99	100-299
1N4057	12.4	0.047	10	0.005	**$ 5.90**	**$ 4.45**
1N4057A	12.4	0.019	10	0.002	**7.10**	**5.35**
1N4058	14.6	0.055	10	0.005	**6.40**	**4.80**
1N4058A	14.6	0.022	10	0.002	**10.75**	**8.10**
1N4059	16.8	0.063	10	0.005	**7.20**	**5.40**
1N4059A	16.8	0.025	10	0.002	**8.55**	**6.45**
1N4060	18.5	0.069	10	0.005	**7.70**	**5.80**
1N4060A	18.5	0.028	10	0.002	**9.25**	**6.95**
1N4061	21.0	0.079	10	0.005	**8.95**	**6.75**
1N4061A	21.0	0.032	10	0.002	**10.75**	**8.10**
1N4062	23.0	0.086	10	0.005	**9.70**	**7.30**
1N4062A	23.0	0.035	10	0.002	**11.70**	**8.80**
1N4063	27.0	0.101	10	0.005	**10.75**	**8.10**
1N4063A	27.0	0.041	10	0.002	**12.90**	**9.70**
1N4064	30.0	0.113	10	0.005	**12.05**	**9.05**
1N4064A	30.0	0.045	10	0.002	**14.45**	**10.85**
1N4065	33.0	0.124	10	0.005	**12.75**	**9.60**
1N4065A	33.0	0.050	10	0.002	**15.35**	**11.55**
1N4066	37.0	0.139	7.5	0.005	**13.55**	**10.20**
1N4066A	37.0	0.056	7.5	0.002	**16.30**	**12.25**
1N4067	43.0	0.161	7.5	0.005	**14.80**	**11.15**
1N4067A	43.0	0.065	7.5	0.002	**17.80**	**13.40**
1N4068	47.0	0.176	7.5	0.005	**15.90**	**11.95**
1N4068A	47.0	0.071	7.5	0.002	**19.00**	**14.30**
1N4069	51.0	0.191	7.5	0.005	**17.95**	**13.50**
1N4069A	51.0	0.077	7.5	0.002	**21.55**	**16.20**
1N4070	56.0	0.210	7.5	0.005	**19.70**	**14.80**
1N4070A	56.0	0.084	7.5	0.002	**23.60**	**17.75**
1N4071	62.0	0.232	7.5	0.005	**22.35**	**16.80**
1N4071A	62.0	0.093	7.5	0.002	**26.80**	**20.15**
1N4072	68.0	0.255	5.0	0.005	**23.15**	**17.40**
1N4072A	68.0	0.102	5.0	0.002	**27.65**	**20.80**
1N4073	75.0	0.281	5.0	0.005	**25.25**	**19.00**
1N4073A	75.0	0.113	5.0	0.002	**30.30**	**22.80**
1N4074	82.0	0.307	5.0	0.005	**27.25**	**20.50**
1N4074A	82.0	0.123	5.0	0.002	**32.70**	**24.60**
1N4075	87.0	0.326	5.0	0.005	**28.85**	**21.70**
1N4075A	87.0	0.131	5.0	0.002	**34.60**	**26.00**
1N4076	91.0	0.341	5.0	0.005	**30.30**	**22.80**
1N4076A	91.0	0.137	5.0	0.002	**36.35**	**27.35**
1N4077	100	0.375	5.0	0.005	**33.25**	**25.00**
1N4077A	100	0.150	5.0	0.002	**39.90**	**30.00**
1N4078	105	0.394	2.5	0.005	**34.90**	**26.25**
1N4078A	105	0.158	2.5	0.002	**41.90**	**31.50**
1N4079	110	0.413	2.5	0.005	**36.85**	**27.70**
1N4079A	110	0.165	2.5	0.002	**44.15**	**33.20**
1N4080	120	0.450	2.5	0.005	**39.90**	**30.00**
1N4080A	120	0.180	2.5	0.002	**47.90**	**36.00**
1N4081	130	0.488	2.5	0.005	**42.40**	**31.90**
1N4081A	130	0.195	2.5	0.002	**50.85**	**38.25**
1N4082	140	0.525	2.5	0.005	**45.75**	**34.40**
1N4082A	140	0.210	2.5	0.002	**54.85**	**41.25**
1N4083	150	0.563	2.5	0.005	**49.85**	**37.50**
1N4083A	150	0.225	2.5	0.002	**59.85**	**45.00**
1N4084	175	0.656	2.5	0.005	**57.05**	**42.90**
1N4084A	175	0.263	2.5	0.002	**68.40**	**51.45**
1N4085	200	0.750	2.5	0.005	**63.95**	**48.10**
1N4085A	200	0.300	2.5	0.002	**76.75**	**57.70**
1N4896	12.8	0.096	0.5	0.01	**18.20**	**13.70**
1N4896A	12.8	0.198	0.5	0.01	**20.10**	**15.10**
1N4897	12.8	0.048	0.5	0.005	**20.90**	**15.70**
1N4897A	12.8	0.099	0.5	0.005	**23.40**	**17.60**
1N4898	12.8	0.019	0.5	0.002	**42.80**	**32.20**
1N4898A	12.8	0.040	0.5	0.002	**47.60**	**35.80**
1N4899	12.8	0.010	0.5	0.001	**74.10**	**55.70**
1N4899A	12.8	0.020	0.5	0.001	**82.45**	**62.00**
1N4900	12.8	0.096	1.0	0.01	**10.50**	**7.90**
1N4901	12.8	0.048	1.0	0.005	**13.15**	**9.90**
1N4901A	12.8	0.099	1.0	0.005	**14.65**	**11.00**
1N4902	12.8	0.019	1.0	0.002	**23.80**	**17.90**
1N4902A	12.8	0.040	1.0	0.002	**26.60**	**20.00**
1N4903	12.8	0.010	1.0	0.001	**43.75**	**32.90**
1N4903A	12.8	0.020	1.0	0.001	**48.65**	**36.60**
1N4904	12.8	0.096	2.0	0.01	**5.40**	**4.05**
1N4904A	12.8	0.198	2.0	0.01	**6.00**	**4.50**
1N4905	12.8	0.048	2.0	0.005	**6.60**	**4.95**
1N4905A	12.8	0.099	2.0	0.005	**7.20**	**5.41**
1N4906	12.8	0.019	2.0	0.002	**$11.85**	**$ 8.92**
1N4906A	12.8	0.040	2.0	0.002	**13.15**	**9.90**
1N4907	12.8	0.010	2.0	0.001	**21.85**	**16.45**
1N4907A	12.8	0.020	2.0	0.001	**24.35**	**18.30**
1N4908	12.8	0.096	4.0	0.01	**5.40**	**4.05**
1N4908A	12.8	0.198	4.0	0.01	**6.00**	**4.50**
1N4909	12.8	0.048	4.0	0.005	**6.60**	**4.95**
1N4909A	12.8	0.099	4.0	0.005	**7.20**	**5.40**
1N4910	12.8	0.019	4.0	0.002	**11.85**	**8.90**
1N4910A	12.8	0.040	4.0	0.002	**13.15**	**9.90**
1N4911	12.8	0.010	4.0	0.001	**19.75**	**14.85**
1N4911A	12.8	0.020	4.0	0.001	**22.00**	**16.55**
1N4912	12.8	0.096	7.5	0.01	**6.00**	**4.50**
1N4912A	12.8	0.198	7.5	0.01	**10.15**	**7.65**
1N4913	12.8	0.048	7.5	0.005	**7.20**	**5.40**
1N4913A	12.8	0.099	7.5	0.005	**13.15**	**9.90**
1N4914	12.8	0.019	7.5	0.002	**13.15**	**9.90**
1N4914A	12.8	0.040	7.5	0.002	**20.20**	**15.20**
1N4915	12.8	0.010	7.5	0.001	**21.95**	**16.50**
1N4915A	12.8	0.020	7.5	0.001	**29.40**	**22.10**
1N4916	19.2	0.144	0.5	0.01	**20.75**	**15.60**
1N4916A	19.2	0.298	0.5	0.01	**23.25**	**17.50**
1N4917	19.2	0.072	0.5	0.005	**28.05**	**21.10**
1N4917A	19.2	0.149	0.5	0.005	**31.25**	**23.50**
1N4918	19.2	0.029	0.5	0.002	**57.20**	**43.00**
1N4918A	19.2	0.060	0.5	0.002	**63.45**	**47.70**
1N4919	19.2	0.144	1.0	0.01	**14.05**	**10.55**
1N4919A	19.2	0.298	1.0	0.01	**15.60**	**11.75**
1N4920	19.2	0.072	1.0	0.005	**17.55**	**13.20**
1N4920A	19.2	0.149	1.0	0.005	**19.40**	**14.60**
1N4921	19.2	0.029	1.0	0.002	**31.80**	**23.90**
1N4921A	19.2	0.060	1.0	0.002	**35.35**	**26.60**
1N4922	19.2	0.144	2.0	0.01	**7.20**	**5.40**
1N4922A	19.2	0.298	2.0	0.01	**8.00**	**6.00**
1N4923	19.2	0.072	2.0	0.005	**8.75**	**6.60**
1N4923A	19.2	0.149	2.0	0.005	**9.55**	**7.20**
1N4924	19.2	0.029	2.0	0.002	**15.80**	**11.90**
1N4924A	19.2	0.060	2.0	0.002	**17.55**	**13.20**
1N4925	19.2	0.144	4.0	0.01	**7.20**	**5.40**
1N4925A	19.2	0.298	4.0	0.01	**8.00**	**6.00**
1N4926	19.2	0.072	4.0	0.005	**8.75**	**6.60**
1N4926A	19.2	0.149	4.0	0.005	**9.55**	**7.20**
1N4927	19.2	0.029	4.0	0.002	**15.80**	**11.90**
1N4927A	19.2	0.060	4.0	0.002	**17.55**	**13.20**
1N4928	19.2	0.014	4.0	0.001	**26.35**	**19.80**
1N4928A	19.2	0.030	4.0	0.001	**29.40**	**22.10**
1N4929	19.2	0.144	7.5	0.01	**8.10**	**6.10**
1N4929A	19.2	0.298	7.5	0.01	**13.75**	**10.35**
1N4930	19.2	0.072	7.5	0.005	**9.70**	**7.30**
1N4930A	19.2	0.149	7.5	0.005	**17.80**	**13.40**
1N4931	19.2	0.029	7.5	0.002	**17.80**	**13.40**
1N4931A	19.2	0.060	7.5	0.002	**26.85**	**20.20**
1N4932	19.2	0.014	7.5	0.001	**29.40**	**22.10**
1N4932A	19.2	0.030	7.5	0.001	**39.10**	**29.40**

POWER TRANSIENT SUPPRESSORS (CASE 119)

$P_D = 350$ W max. at $T_C = 25°$ C, $T_J = 175°$ C. $I_{R(max.)}$ at $V_R = 50$ μADC. MPZ Series is an array of six basic cells, special configurations are available with various power and/or voltage ratings.

Motorola Type	Nom. $V_{OP(PK)}$ VDC	Max. C_F V	$V_{Z(max.)}$ at I_Z*		Typ. C μF	Net Ea., Lots of	
			VDC	ADC		1-99	100-999
MPZ5-16A	14	1.25	24	200	0.025	**$24.75**	**$18.60**
MPZ5-16B	14	1.25	20	200	0.025	**44.30**	**33.30**
MPZ5-32A	28	1.25	50	100	0.011	**17.70**	**13.30**
MPZ5-32B	28	1.25	45	100	0.011	**26.45**	**19.90**
MPZ5-32C	28	1.25	40	100	0.011	**44.30**	**33.30**
MPZ5-180A	165	1.14	250	20	0.0012	**26.45**	**19.90**
MPZ5-180B	165	1.14	225	20	0.0012	**44.30**	**33.30**
MPZ5-180C	165	1.14	205	20	0.0012	**61.85**	**46.50**

*Pulse width = 1.0 msec.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.
SEE PREVIOUS PAGE FOR CASE ILLUSTRATIONS.

MOTOROLA MICROCIRCUIT COMPONENTS

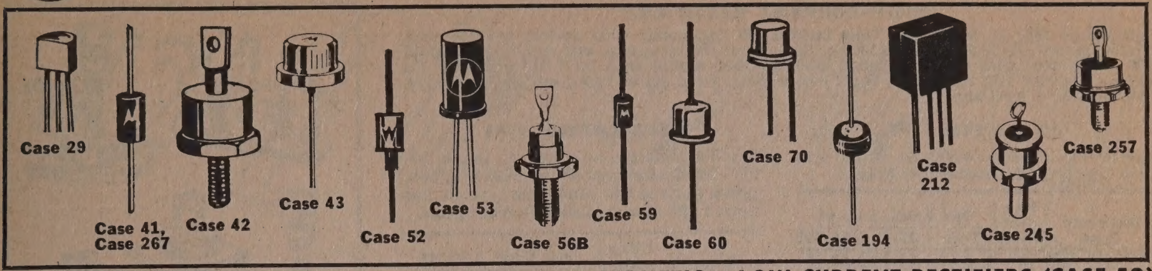
OVER 500 "STANDARD" DISCRETE ACTIVE AND PASSIVE UNENCAPSULATED CHIPS ARE NOW AVAILABLE.

INCLUDED ARE SILICON TRANSISTORS (AMPLIFIERS, SWITCHING, GENERAL PURPOSE, RF, FET, POWER AND SWITCHING DIODE TYPES), THIN-FILM RESISTORS AND CAPACITORS, AND SOME 122 ZENER DIODE TYPES.

SEND US YOUR REQUIREMENTS—OUR STOCKS ARE COMPLETE AND UP-TO-DATE FOR PROMPT DELIVERY.

MOTOROLA Semiconductors

SILICON REFERENCE DIODES AND RECTIFIERS



SILICON MOLDED ASSEMBLY REFERENCE DIODES (CASE 41)

V_Z at I_{ZT}=7.5 mA. ΔV_Z at −55° C, +25° C, +100° C. P_D at T_A=25° C.

Motorola Type	V_Z Volts	Z_{ZT} Ohms	TC for Refer. %/° C	ΔV_Z at I_{ZT} Volts	P_D mW	Net Ea., Lots of 1-99	100-299
1N429*†	6.2	20	0.01	0.050	200	**$ 5.45**	**$ 4.10**
1N1530‡	8.4	15	0.002	0.014§	250	**16.55**	**12.45**
1N1530A*‡	8.4	15	0.001	0.007§	250	**24.85**	**18.70**
1N1735	6.2	20	0.01	0.050	200	**5.40**	**4.05**
1N1736	12.4	40	0.01	0.100	400	**8.75**	**6.60**
1N1736A	12.4	40	0.005	0.050	400	**10.70**	**8.05**
1N1737	18.6	60	0.01	0.150	600	**10.50**	**7.90**
1N1737A	18.6	60	0.005	0.075	600	**12.30**	**9.25**
1N1738	24.8	80	0.01	0.200	800	**14.15**	**10.65**
1N1738A	24.8	80	0.005	0.100	800	**16.20**	**12.20**
1N1739	31.0	100	0.01	0.250	1000	**17.50**	**13.15**
1N1739A	31.0	100	0.005	0.125	1000	**20.60**	**15.50**
1N1740	37.2	120	0.01	0.300	1200	**20.30**	**15.25**
1N1740A	37.2	120	0.005	0.150	1200	**24.60**	**18.50**
1N1741	43.4	140	0.01	0.350	1400	**24.35**	**18.30**
1N1741A	43.4	140	0.005	0.175	1400	**28.60**	**21.50**
1N1742	49.6	180	0.01	0.400	1600	**27.65**	**20.80**
1N1742A*	49.6	180	0.005	0.200	1600	**32.20**	**24.20**

*JAN type also available. †Case 53. ‡Case 57. §I_{ZT}=10 mA.

REFERENCE AMPLIFIERS (CASE 212)

Designed for use in regulated power supplies as a combination voltage reference element and error voltage amplifier. Add suffix **N** to basic type number for NPN polarity; suffix **P** for PNP polarity.

0° C TO +75° C—±10% TOLERANCE

V_{REF} V	ΔV_{REF} V	Motorola Type	V_{REF} V	ΔV_{REF} V	Motorola Type	Net Ea., Lots 1-99	100-999
6.8	0.051	**MCA1911**	8.6	0.060	**MCA2011**	**$ 4.50**	**$ 3.00**
	0.025	**MCA1912**		0.030	**MCA2012**	**7.95**	**5.30**
	0.010	**MCA1913**		0.012	**MCA2013**	**14.10**	**9.40**
	0.005	**MCA1914**		0.006	**MCA2014**	**23.40**	**15.60**
9.5	0.071	**MCA2111**	11.0	0.082	**MCA2211**	**5.25**	**3.95**
	0.035	**MCA2112**		0.041	**MCA2212**	**7.95**	**5.30**
	0.014	**MCA2113**		0.016	**MCA2213**	**14.10**	**9.40**
	0.007	**MCA2114**		0.008	**MCA2214**	**23.40**	**15.60**

−55° C TO +100° C—±5% TOLERANCE

6.8	0.105	**MCA1921**	8.6	0.124	**MCA2021**	**$ 7.95**	**$ 5.30**
	0.052	**MCA1922**		0.062	**MCA2022**	**14.10**	**9.40**
	0.020	**MCA1923**		0.024	**MCA2023**	**22.50**	**15.00**
	0.010	**MCA1924**		0.012	**MCA2024**	**45.00**	**29.00**
9.5	0.147	**MCA2121**	11.0	0.170	**MCA2221**	**7.95**	**5.30**
	0.073	**MCA2122**		0.085	**MCA2222**	**14.10**	**9.40**
	0.028	**MCA2123**		0.034	**MCA2223**	**22.50**	**15.00**
	0.014	**MCA2124**		0.017	**MCA2224**	**45.00**	**29.00**

−55° C TO +150° C—±5% TOLERANCE

V_{REF} V	ΔV_{REF} V	Motorola Type	V_{REF} V	ΔV_{REF} V	Motorola Type	Net Ea., Lots 1-99	100-999
6.8	0.139	**MCA1931**	8.6	0.164	**MCA2031**	**$ 8.25**	**$ 5.50**
	0.069	**MCA1932**		0.082	**MCA2032**	**14.10**	**9.40**
	0.026	**MCA1933**		0.032	**MCA2033**	**23.40**	**15.60**
	0.013	**MCA1934**		0.016	**MCA2034**	**49.50**	**33.00**
9.5	0.194	**MCA2131**	11.0	0.225	**MCA2231**	**8.25**	**5.50**
	0.097	**MCA2132**		0.112	**MCA2232**	**14.10**	**9.40**
	0.038	**MCA2133**		0.044	**MCA2233**	**23.40**	**15.60**
	0.019	**MCA2134**		0.022	**MCA2234**	**49.50**	**33.00**

ECONOMY DUAL DIODES (CASE 29)

T_J=135° C, I_F=200 mA. $V_{(BR)}$ at I_{BR}=100 μA; C at V_R=zero; t_{rr} at I_R=10 mA. Common cathode except MSD6150, common anode; MSD7000, series.

Motorola Type	Min. $V_{(BR)}$ Volts	Maximum C pF	Maximum t_{rr} nsec	Net Each, Lots of 1-99	100-999
MSD6100	100	1.5	4.0	**$0.36**	**$0.24**
MSD6101	50	2.0	10	**.40**	**.27**
MSD6102	70	3.0	100	**.30**	**.20**
MSD6150	70	8.0	100	**.37**	**.25**
MSD7000	100	1.5	15	**.38**	**.25**

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SURMETIC™ LOW-CURRENT RECTIFIERS (CASE 59)

$I_{FM(surge)}$ at 25° C except as noted.

Motorola Type	V_{RM} (rep) Volts	Forward Current I_O at Amps	Temp °C	$I_{FM(surge)}$ Amps	I_R (AV) Amps	Net Ea., Lots 1-99	100-999
1N4001	50	1.0	75	30	0.03	**$0.38**	**$0.25**
1N4002	100	1.0	75	30	0.03	**.41**	**.27**
1N4003	200	1.0	75	30	0.03	**.45**	**.30**
1N4004	400	1.0	75	30	0.03	**.53**	**.35**
1N4005	600	1.0	75	30	0.03	**.60**	**.40**
1N4006	800	1.0	75	30	0.03	**.75**	**.50**
1N4007	1000	1.0	75	30	0.03	**.83**	**.55**
MR990A	1000	0.250	25	15†	0.1	**.75**	**.50**
MR991A	1500	0.250	25	15†	0.1	**.82**	**.55**
MR992A	2000	0.250	25	15†	0.1	**.90**	**.60**
MR993A	2500	0.250	25	15†	0.1	**.97**	**.65**
MR994A	3000	0.250	25	15†	0.1	**1.05**	**.70**
MR995A	4000	0.250	25	15†	0.1	**1.20**	**.80**
MR996A	5000	0.250	25	15†	0.1	**1.35**	**.90**
MR2266	800	1.0	75	30†	0.01*	**1.08**	**.72**
MR2272	400	1.0	75	30†	0.01*	**.57**	**.38**
MR2273	200	1.0	75	30†	0.01*	**.48**	**.32**

*I_R. †At 75° C.

SILICON RECTIFIERS

The following types represent the latest rectifier products that are recommended for new designs. Not all of Motorolas' devices are listed; write for information and prices on types you need. Reverse polarity available on all types except as noted. Add suffix **R** to number (1N4720**R**, MR1031B**R**).

Motorola Type	Case	I_O A	$V_{RM(REF)}$ V	Net Ea., Lots 1-99	100-999
1N4720	60	3.0	100	**$ 0.73**	**$0.49**
1N4721	60	3.0	200	**.82**	**.55**
1N4722	60	3.0	400	**1.12**	**.75**
1N4723	60	3.0	600	**1.50**	**1.00**
1N4724	60	3.0	800	**2.25**	**1.50**
1N4725	60	3.0	1000	**3.35**	**2.25**
1N4998/MR1031B	70	3.0	100	**.73**	**.49**
1N4999/MR1032B	70	3.0	200	**.82**	**.55**
1N5000/MR1034B	70	3.0	400	**1.12**	**.75**
1N5001/MR1036B	70	3.0	600	**1.50**	**1.00**
1N5002/MR1038B	70	3.0	800	**2.25**	**1.50**
1N5003/MR1040B	70	3.0	1000	**3.35**	**2.25**
MR501	267	3.0	100	**.45**	**.30**
MR502	267	3.0	200	**.49**	**.33**
MR504	267	3.0	400	**.58**	**.39**
MR506	267	3.0	600	**.70**	**.47**
MR508	267	3.0	800	**.90**	**.60**
MR510	267	3.0	1000	**1.25**	**.83**
MR751*	194	6.0	100	**.68**	**.45**
MR752*	194	6.0	200	**.74**	**.49**
MR754*	194	6.0	400	**.93**	**.62**
MR756*	194	6.0	600	**1.35**	**.90**
1N1200, A	245	12.0	100	**1.42**	**.95**
1N1202, A	245	12.0	200	**2.55**	**1.70**
1N1204, A	245	12.0	400	**4.50**	**3.00**
1N1206, A	245	12.0	600	**6.30**	**4.20**
1N3988	245	12.0	800	**9.20**	**6.15**
1N3990	245	12.0	1000	**12.15**	**8.10**
MR1121	245	12.0	100	**1.23**	**.82**
MR1122	245	12.0	200	**1.32**	**.88**
MR1124	245	12.0	400	**1.65**	**1.10**
MR1126	245	12.0	600	**2.45**	**1.65**
MR1128	245	12.0	800	**5.60**	**3.75**
MR1130	245	12.0	1000	**7.85**	**5.25**
1N3209	42	15.0	100	**1.42**	**.95**
1N3210	42	15.0	200	**1.87**	**1.25**
1N3212	42	15.0	400	**2.55**	**1.70**
1N3214	42	15.0	600	**3.90**	**2.60**
1N249B	42	20.0	100	**1.65**	**1.10**
1N250B	42	20.0	200	**2.40**	**1.60**
1N1196	42	20.0	400	**4.35**	**2.90**
1N1198	42	20.0	600	**6.75**	**4.50**
1N3492/MR323	43	25.0	100	**.76**	**.51**
1N3493/MR324	43	25.0	200	**1.11**	**.74**
1N3495/MR326	43	25.0	400	**1.48**	**.99**
MR328	43	25.0	600	**3.35**	**2.25**
MR330	43	25.0	800	**6.75**	**4.50**
MR331	43	25.0	1000	**9.75**	**6.50**
1N3360	43	30.0	100	**.99**	**.66**
1N3661	43	30.0	200	**1.33**	**.89**
1N3663	43	30.0	400	**1.70**	**1.14**
1N1184	42	35.0	100	**2.10**	**1.40**
1N1186	42	35.0	200	**3.15**	**2.10**
1N1188	42	35.0	400	**5.25**	**3.50**
1N1190	42	35.0	600	**6.75**	**4.50**

*Reverse polarity not available.

MOTOROLA Semiconductors Silicon Rectifiers

HIGH-CURRENT RECTIFIERS

Ratings at 150° C. **Mounting Type Suffix: FB** flat-mount with flexible braided lead; **FL** flat-mount (A) MR1200–MR1209 or flat-mount (B) all others, with solid lug terminal; **SB** stud-mount with flexible braided lead; **SL** stud mount with solid lug terminal. For reverse polarity add final suffix **R** (MR1211**SBR**); same price. $V_{RM(REP)}$ of 50, 150, 250, 300 and 350 V available.

50 AMPERES TYPE

$I_O = 50$ A; $I_{FM(surge)} = 800$ A; $I_{R(AV)} = 10$ mA. Available flat-mount (A) only.

Motorola Type	V_{RM} (REP) Volts	Net Each, Lots of 1-24	25-99	100-199
MR1201 FL	100	**$ 4.10**	**$3.70**	**$3.10**
MR1203 FL	200	**5.60**	**5.05**	**4.20**
MR1207 FL	400	**7.30**	**6.60**	**5.50**
MR1208 FL	500	**8.65**	**7.80**	**6.50**
MR1209 FL	600	**10.30**	**9.30**	**7.75**
MR5010*	100	**1.65**	**1.65**	**1.10**
MR5020*	200	**2.20**	**2.20**	**1.45**
MR5040*	400	**3.30**	**3.30**	**2.20**

*In Case 43.

100 AMPERES TYPE

$I_O = 100$ amps; $I_{FM(surge)} = 2000$ amps; $I_{R(AV)} = 15$ mA. Mounting type **SL** also available at lower price.

MR1211 SB	100	**$ 5.65**	**$ 5.10**	**$ 4.25**
MR1213 SB	200	**7.00**	**6.30**	**5.25**
MR1217 SB	400	**10.35**	**9.35**	**7.80**
MR1218 SB	500	**11.30**	**10.20**	**8.50**
MR1219 SB	600	**13.55**	**12.25**	**10.20**

200 AMPERES TYPE

$I_O = 200$ A; $I_{FM(surge)} = 3600$ A; $I_{R(AV)} = 20$ mA. Mounting types **FB, FL** (B) and **SB** available; prices same as type **SL.**

MR1221 SL	100	**$11.95**	**$10.80**	**$ 9.00**
MR1223 SL	200	**12.65**	**11.40**	**9.50**
MR1227 SL	400	**17.95**	**16.20**	**13.50**
MR1228 SL	500	**19.95**	**18.00**	**15.00**
MR1229 SL	600	**23.95**	**21.60**	**18.00**

300 AMPERES TYPE

$I_O = 300$ A; $I_{FM(surge)} = 5000$ A; $I_{R(AV)} = 35$ mA. Mounting type **SB** and **SL** available; prices same as **FB.** Mounting type **FL** flat-mount (B) also available at lower price.

Motorola Type	V_{RM} (REP) Volts	Net Each, Lots of 1-24	25-99	100-199
MR1231 FB	100	**$16.30**	**$14.70**	**$12.25**
MR1233 FB	200	**17.30**	**15.60**	**13.00**
MR1237 FB	400	**24.25**	**21.90**	**18.25**
MR1238 FB	500	**27.95**	**25.20**	**21.00**
MR1239 FB	600	**34.60**	**31.20**	**26.00**

450 AMPERES TYPE

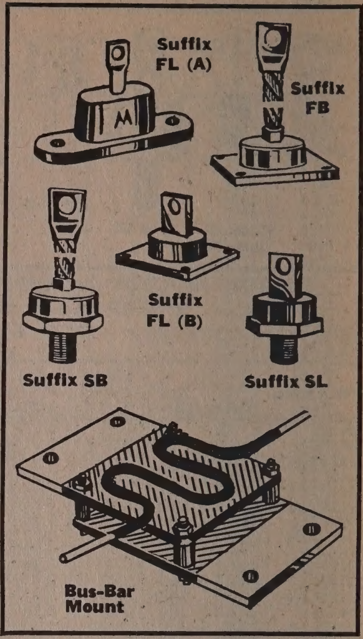
$I_O = 450$ A; $I_{FM(surge)} = 8000$ A; $I_{R(AV)} = 50$ mA. Mounting type **FB** and **SL** available; prices same as **SB.** Mounting type **FL** flat-mount (B) also available at lower price.

MR1241 SB	100	**$23.95**	**$21.60**	**$18.00**
MR1243 SB	200	**25.25**	**22.80**	**19.00**
MR1247 SB	400	**31.40**	**28.30**	**23.60**
MR1248 SB	500	**45.20**	**40.80**	**34.00**
MR1249 SB	600	**66.50**	**60.00**	**50.00**

700 AMPERES TYPE

$I_O = 700$ A; $I_{FM(surge)} = 12{,}000$ A; $I_{R(AV)} = 100$ mA. Available flat-mount (B) only.

MR1261 FL	100	**$46.55**	**$42.00**	**$35.00**
MR1263 FL	200	**55.20**	**49.80**	**41.50**
MR1267 FL	400	**67.85**	**61.20**	**51.00**
MR1268 FL	500	**82.45**	**74.40**	**62.00**
MR1269 FL	600	**99.75**	**90.00**	**75.00**



1000 AMP WATER COOLED

Bus-bar mount; water cooled. $I_O = 1000$ A; $I_{FM(surge)} = 18{,}000$ A; $I_{R(AV)} = 200$ mA.

Motorola Type	V_{RM} (REP) Volts	Net Each, Lots of 1-24	25-99
MR1291	100	**$ 66.50**	**$ 60.00**
MR1293	200	**76.50**	**69.00**
MR1297	400	**98.50**	**88.75**
MR1299	600	**199.50**	**180.00**

FAST RECOVERY POWER RECTIFIERS

Reverse polarity available as noted.

PLASTIC AXIAL LEAD

Motorola Type	Case	V_{RRM} V	I_O A	t_{rr} µs	f kHz	Net Ea., Lots 1-99	100-999
1N4933	59	50	1.0	0.2	250	**$0.60**	**$0.40**
1N4934	59	100	1.0	0.2	250	**.68**	**.45**
1N4935	59	200	1.0	0.2	250	**.75**	**.50**
MR2271	59	300	1.0	0.2	250	**.87**	**.58**
1N4936	59	400	1.0	0.2	250	**1.04**	**.69**
1N4937	59	600	1.0	0.2	250	**1.18**	**.79**
MR810	59	50	1.0	750 ns	50	**.45**	**.30**
MR811	59	100	1.0	750 ns	50	**.53**	**.35**
MR812	59	200	1.0	750 ns	50	**.60**	**.40**
MR813	59	300	1.0	750 ns	50	**.72**	**.48**
MR814	59	400	1.0	750 ns	50	**.89**	**.59**
MR816	59	600	1.0	750 ns	50	**1.04**	**.69**
MR817	59	800	1.0	750 ns	50	**1.21**	**.81**
MR818	59	1000	1.0	750 ns	50	**1.41**	**.94**
MR850	267	50	3.0	0.2	250	**.93**	**.62**
MR851	267	100	3.0	0.2	250	**1.08**	**.72**
MR852	267	200	3.0	0.2	250	**1.23**	**.82**
MR854	267	400	3.0	0.2	250	**1.47**	**.98**
MR856	267	600	3.0	0.2	250	**1.74**	**1.16**
MR820	194	50	5.0	0.2	250	**1.80**	**1.20**
MR821	194	100	5.0	0.2	250	**2.16**	**1.44**
MR822	194	200	5.0	0.2	250	**2.60**	**1.73**
MR824	194	400	5.0	0.2	250	**3.63**	**2.42**
MR826	194	600	5.0	0.2	250	**4.65**	**3.10**

METAL AXIAL LEAD

MR1337-1	52	50	1.0	200 ns	250	**$ 3.35**	**$2.25**
MR1337-2	52	100	1.0	200 ns	250	**4.95**	**3.30**
MR1337-3	52	200	1.0	200 ns	250	**6.75**	**4.50**
MR1337-4	52	300	1.0	200 ns	250	**9.00**	**6.00**
MR1337-5	52	400	1.0	200 ns	250	**12.00**	**8.00**
MR1337-7	52	600	1.0	200 ns	250	**	**
MR830	60	50	3.0	0.2	250	**1.50**	**.99**
MR831	60	100	3.0	0.2	250	**1.80**	**1.20**
MR832	60	200	3.0	0.2	250	**1.97**	**1.44**
MR834	60	400	3.0	0.2	250	**3.09**	**2.06**
MR836	60	600	3.0	0.2	250	**3.87**	**2.58**
MR840	60	50	3.0	1.0	50	**1.27**	**.85**
MR841	60	100	3.0	1.0	50	**1.42**	**.95**
MR842	60	200	3.0	1.0	50	**1.80**	**1.20**
MR844	60	400	3.0	1.0	50	**2.55**	**1.70**
MR846	60	600	3.0	1.0	50	**3.47**	**2.31**

**Prices on request.

METAL STUD MOUNTED

Motorola Type	Case	V_{RRM} V	I_O A	t_{rr} µs	f kHz	Net Ea., Lots 1-99	100-999
1N3879, R	56B	50	6.0	0.2	250	**$ 2.25**	**$ 1.50**
1N3880, R	56B	100	6.0	0.2	250	**2.70**	**1.80**
1N3881, R	56B	200	6.0	0.2	250	**3.23**	**2.15**
1N3882, R	56B	300	6.0	0.2	250	**3.83**	**2.55**
1N3883, R	56B	400	6.0	0.2	250	**4.50**	**3.00**
MR1366, R	56B	600	6.0	0.2	250	**5.63**	**3.75**
1N3889, R	56B	50	12.0	0.2	250	**3.00**	**2.00**
1N3890*, R	56B	100	12.0	0.2	250	**3.60**	**2.40**
1N3891*, R	56B	200	12.0	0.2	250	**4.35**	**2.90**
1N3892, R	56B	300	12.0	0.2	250	**5.25**	**3.50**
1N3893*, R	56B	400	12.0	0.2	250	**6.30**	**4.20**
MR1376, R	56B	600	12.0	0.2	250	**7.88**	**5.25**
1N3899, R	257	50	20.0	0.2	250	**4.20**	**2.80**
1N3900, R	257	100	20.0	0.2	250	**5.02**	**3.35**
1N3901, R	257	200	20.0	0.2	250	**6.00**	**4.00**
1N3902, R	257	300	20.0	0.2	250	**7.20**	**4.80**
1N3903, R	257	400	20.0	0.2	250	**8.63**	**5.75**
MR1386, R	257	600	20.0	0.2	250	**10.80**	**7.20**
1N3909, R	257	50	30.0	0.2	250	**4.88**	**3.25**
1N3910, R	257	100	30.0	0.2	250	**5.85**	**3.90**
1N3911, R	257	200	30.0	0.2	250	**6.98**	**4.65**
1N3912, R	257	300	30.0	0.2	250	**8.40**	**5.60**
1N3913, R	257	400	30.0	0.2	250	**10.13**	**6.75**
MR1396, R	257	600	30.0	0.2	250	**12.68**	**8.45**
MR860, R	257	50	40.0	0.2	250	**5.85**	**3.90**
MR861, R	257	100	40.0	0.2	250	**6.98**	**4.65**
MR862, R	257	200	40.0	0.2	250	**8.40**	**5.60**
MR864, R	257	400	40.0	0.2	250	**12.15**	**8.10**
MR866, R	257	600	40.0	0.2	250	**15.15**	**10.10**
MR870, R	257	50	50.0	0.2	250	**6.45**	**4.30**
MR871, R	257	100	50.0	0.2	250	**7.73**	**5.15**
MR872, R	257	200	50.0	0.2	250	**9.30**	**6.20**
MR874, R	257	400	50.0	0.2	250	**13.43**	**8.95**
MR876, R	257	600	50.0	0.2	250	**16.80**	**11.20**

*JAN, JTX, JTXV types available.

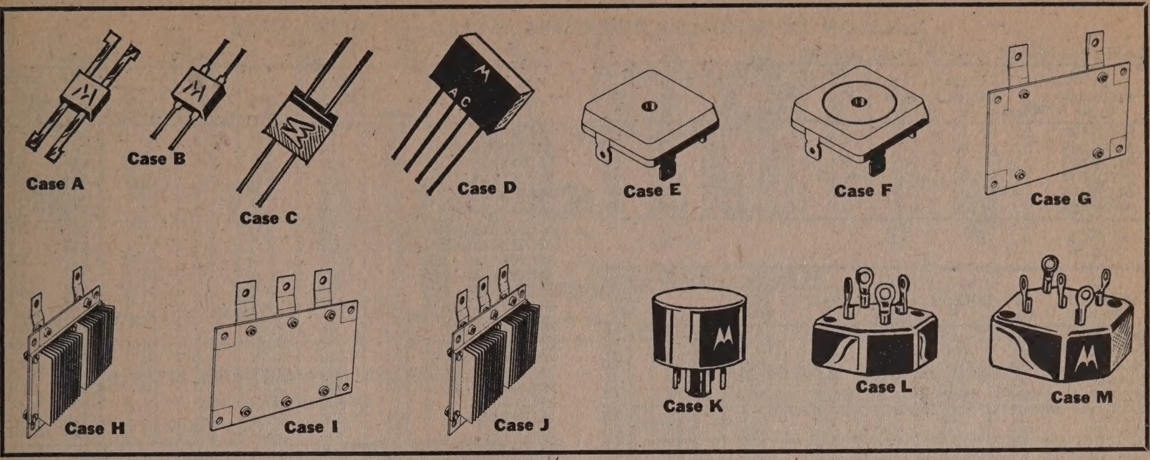
LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

SEE PREVIOUS PAGE

FOR ADDITIONAL CASE ILLUSTRATIONS.

MOTOROLA Semiconductors

SILICON POWER RECTIFIER ASSEMBLIES



MIDA™ RECTIFIER ASSEMBLIES

Single-phase rectifier circuits in small, integral packages.

1 AMP FULL WAVE BRIDGE

Suffix **A** (MDA920**A-1**) indicates round leads.

Motorola Type		V_{RRM} Volts	Net Each, Lots of		
Case A	**Case B**		**1-24**	**25-99**	**100-999**
MDA920-1	MDA920A-1	25	$1.42	$1.26	$0.95
MDA920-2	MDA920A-2	50	1.69	1.50	1.13
MDA920-3	MDA920A-3	100	1.95	1.73	1.30
MDA920-4	MDA920A-4	200	2.30	2.05	1.55
MDA920-5	MDA920A-5	300	2.40	2.10	1.60
MDA920-6	MDA920A-6	400	2.45	2.20	1.65
MDA920-7	MDA920A-7	600	3.20	2.85	2.15

FULL WAVE BRIDGES

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	**25-99**	**100-999**
MDA922-1	C	2.0	25	$1.87	$1.66	$1.25
MDA922-2	C	2.0	50	2.00	1.79	1.35
MDA922-3	C	2.0	100	2.30	2.05	1.55
MDA922-4	C	2.0	200	2.75	2.45	1.85
MDA922-5	C	2.0	300	2.90	2.60	1.95
MDA922-6	C	2.0	400	3.20	2.85	2.15
MDA922-7	C	2.0	600	3.75	3.30	2.50
MDA922-8	C	2.0	800	4.50	4.00	3.00
MDA922-9	C	2.0	1000	5.60	5.00	3.75
MDA970-1	D	4.0	50	3.20	2.90	2.15
MDA970-2	D	4.0	100	3.65	3.30	2.45
MDA970-3	D	4.0	200	4.10	3.70	2.75
Type	**Case**	**Amps**	**Volts**	**1-24**	**25-99**	**100-249**
MDA980-1	E	12.0	50	$3.20	$2.90	$2.40
MDA980-2	E	12.0	100	3.45	3.10	2.60
MDA980-3	E	12.0	200	4.05	3.65	3.05
MDA980-4	E	12.0	300	4.50	4.10	3.40
MDA980-5	E	12.0	400	5.05	4.55	3.80
MDA980-6	E	12.0	600	6.90	6.25	5.20
MDA990-1	F	27.0	50	4.00	3.60	3.00
MDA990-2	F	27.0	100	4.25	3.85	3.20
MDA990-3	F	27.0	200	4.80	4.30	3.60
MDA990-4	F	27.0	300	5.30	4.80	4.00
MDA990-5	F	27.0	400	5.80	5.20	4.35
MDA990-6	F	27.0	600	7.85	7.10	5.90

HIGH CURRENT RECTIFIER CIRCUITS

Single-phase and three-phase full wave bridge assemblies also available. I_O value given is at 1500 LFM; reverse polarity (suffix **R**).

SINGLE-PHASE HALF WAVE

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	**25-99**	**100-999**
MRA130, R	G	300	50	$19.30	$17.40	$14.50
MRA131, R	G	300	100	21.95	19.80	16.50
MRA132, R	G	300	200	27.25	24.60	20.50
MRA133, R	G	300	300	31.25	28.20	23.50
MRA134, R	G	300	400	36.55	33.00	27.50
MRA160, R	H	600	50	35.25	31.80	26.50
MRA161, R	H	600	100	37.90	34.20	28.50
MRA162, R	H	600	200	44.55	40.20	33.50
MRA163, R	H	600	300	48.55	43.80	36.50
MRA164, R	H	600	400	56.50	51.00	42.50

THREE-PHASE HALF WAVE

MRA330, R	I	300	50	$20.60	$18.60	$15.50
MRA331, R	I	300	100	22.95	20.70	17.25
MRA332, R	I	300	200	28.25	25.50	21.25
MRA333, R	I	300	300	32.60	29.40	24.50
MRA334, R	I	300	400	37.55	33.90	28.25
MRA360, R	J	650	50	36.55	33.00	27.50
MRA361, R	J	650	100	39.25	35.40	29.50
MRA362, R	J	650	200	45.90	41.40	34.50
MRA363, R	J	650	300	49.85	45.00	37.50
MRA354, R	J	650	400	57.85	52.20	43.50

MOLDED RECTIFIER BRIDGE ASSEMBLIES

Individual hermetically sealed rectifiers interconnected and encapsulated in molded assemblies for use as single-phase and three-phase full wave bridge configurations.

SINGLE-PHASE FULL WAVE

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	**25-99**	**100-999**
MDA942-1	C	1.5	50	$2.50	$2.20	$1.85
MDA942-2	C	1.5	100	2.80	2.50	2.10
MDA942-3	C	1.5	200	3.25	2.95	2.45
MDA942-4	C	1.5	300	3.70	3.35	2.80
MDA942-5	C	1.5	400	4.20	3.80	3.15
MDA942-6	C	1.5	600	4.65	4.20	3.50
MDA942A-1	D	1.5	50	2.60	2.35	1.95
MDA942A-2	D	1.5	100	2.90	2.65	2.20
MDA942A-3	D	1.5	200	3.40	3.05	2.55
MDA942A-4	D	1.5	300	3.85	3.50	2.90
MDA942A-5	D	1.5	400	4.30	3.90	3.25
MDA942A-6	D	1.5	600	4.80	4.30	3.60
MDA1491-1	K	1.5	50	3.75	3.30	2.50
MDA1491-2	K	1.5	100	4.15	3.70	2.75
MDA1491-3	K	1.5	200	5.00	4.40	3.30
MDA1491-4	K	1.5	300	5.55	4.90	3.70
MDA1491-5	K	1.5	400	6.40	5.65	4.25
MDA1491-6	K	1.5	600	8.00	7.05	5.30
MDA1591-1	K	4.0	50	3.35	3.00	2.50
MDA1591-2	K	4.0	100	3.50	3.30	2.75
MDA1591-3	K	4.0	200	4.55	4.00	3.30
MDA1591-4	K	4.0	300	4.90	4.45	3.70
MDA1591-5	K	4.0	400	5.65	5.10	4.25
MDA1591-6	K	4.0	600	7.05	6.40	5.30

For PC insertion (without solder lugs) specify MDA952**A**; prices on request.

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	**25-99**	**100-999**
MDA952-1	L	6.0	50	$3.25	$2.95	$2.45
MDA952-2	L	6.0	100	3.50	3.20	2.65
MDA952-3	L	6.0	200	4.45	4.00	3.35
MDA952-4	L	6.0	300	4.90	4.45	3.70
MDA952-5	L	6.0	400	6.00	5.40	4.50
MDA952-6	L	6.0	600	7.30	6.60	5.50

Fast recovery bridges. $t_{rr} = 200$ nsec max.

MDA952FR1	L	6.0	50	$ 7.10	$6.35	$4.85
MDA952FR2	L	6.0	100	7.50	6.75	5.00
MDA952FR3	L	6.0	200	8.25	7.40	5.50
MDA952FR4	L	6.0	300	9.00	8.10	6.00
MDA952FR5	L	6.0	400	10.85	9.75	7.25

For PC insertion (without solder lugs) specify MDA962**A**; prices on request.

MDA962-1	L	10.0	50	$3.65	$3.30	$2.75
MDA962-2	L	10.0	100	3.90	3.55	2.95
MDA962-3	L	10.0	200	4.85	4.40	3.65
MDA962-4	L	10.0	300	5.30	4.80	4.00
MDA962-5	L	10.0	400	6.40	5.75	4.80
MDA962-6	L	10.0	600	7.85	7.10	5.90

THREE-PHASE FULL WAVE

For PC insertion (without solder lugs) specify MDA1505**A**; prices on request.

Motorola Type	Case	I_O Amps	V_{RRM} Volts	Net Each, Lots of		
				1-24	**25-99**	**100-999**
MDA1505-1	M	8.0	50	$ 5.65	$5.10	$4.25
MDA1505-2	M	8.0	100	6.05	5.45	4.55
MDA1505-3	M	8.0	200	7.32	6.60	5.50
MDA1505-4	M	8.0	300	7.91	7.15	5.95
MDA1505-5	M	8.0	400	9.30	8.40	7.00
MDA1505-6	M	8.0	600	10.45	9.42	7.85

MOTOROLA
Semiconductors

SILICON CONTROLLED RECTIFIERS (THYRISTORS)

SILICON CONTROLLED RECTIFIERS (SCRs)—IN METAL CASE

Listed in order of on-state (rms) current.

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C		Net Each, Lots of		
				V_{GT} V	I_{GT} mA	1-24	25-99	100-999
MCR201	22	15	0.5	0.8	0.2	$0.75	$0.65	$0.50
MCR202	22	30	0.5	0.8	0.2	.82	.71	.55
MCR203	22	60	0.5	0.8	0.2	.98	.84	.65
MCR204	22	100	0.5	0.8	0.2	1.05	.91	.70
MCR205	22	150	0.5	0.8	0.2	1.13	.97	.75
MCR206	22	200	0.5	0.8	0.2	1.20	1.04	.80

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C		Net Ea., Lots	
				V_{GT} V	I_{GT} mA	1-99	100-999
2N1595	31	50	1.6	3.0	10.0	$ 1.50	$1.00
2N1596	31	100	1.6	3.0	10.0	2.25	1.50
2N1597	31	200	1.6	3.0	10.0	3.90	2.60
2N1598	31	300	1.6	3.0	10.0	5.55	3.70
2N1599	31	400	1.6	3.0	10.0	10.05	6.70
2N2322	31	25	1.6	0.8	0.2	1.85	1.25
2N2323	31	50	1.6	0.8	0.2	2.45	1.65
2N2324	31	100	1.6	0.8	0.2	3.75	2.50
2N2325	31	150	1.6	0.8	0.2	4.95	3.30
2N2326	31	200	1.6	0.8	0.2	5.40	3.60
2N2327	31	250	1.6	0.8	0.2	6.15	4.10
2N2328	31	300	1.6	0.8	0.2	8.75	5.75
2N2329	31	400	1.6	0.8	0.2	11.25	9.50
2N4212	31	25	1.6	0.8	0.1	1.70	1.15
2N4213	31	50	1.6	0.8	0.1	2.30	1.40
2N4214	31	100	1.6	0.8	0.1	3.30	2.20
2N4215	31	150	1.6	0.8	0.1	4.50	3.00
2N4216	31	200	1.6	0.8	0.1	4.95	3.30
2N4217	31	250	1.6	0.8	0.1	5.95	4.00
2N4218	31	300	1.6	0.8	0.1	7.95	4.95
2N4219	31	400	1.6	0.8	0.1	11.10	6.90
MCR32-05	79	50	7.0	1.5	20.0	1.65	1.10
MCR32-20	79	200	7.0	1.5	20.0	2.92	1.95
MCR32-30	79	300	7.0	1.5	20.0	3.45	2.10
MCR32-40	79	400	7.0	1.5	20.0	3.59	2.40
MCR32-50	79	500	7.0	1.5	20.0	4.19	2.80
MCR32-60	79	600	7.0	1.5	20.0	4.87	3.25
MCR320-1	79	25	7.0	1.5	20.0	1.12	.75
MCR320-2	79	50	7.0	1.5	20.0	1.28	.85
MCR320-3	79	100	7.0	1.5	20.0	1.42	.95
MCR320-4	79	200	7.0	1.5	20.0	1.53	1.02
MCR320-5	79	300	7.0	1.5	20.0	1.68	1.12
MCR320-6	79	400	7.0	1.5	20.0	1.84	1.23
MCR320-7	79	500	7.0	1.5	20.0	1.98	1.32
MCR320-8	79	600	7.0	1.5	20.0	2.22	1.48

Motorola Type		V_{FOM} V_{ROM} V	I_T rms A	V_{GT} V	I_{GT} mA	Net Ea., Lots	
Case 85	Case 85L					1-99	100-999
2N4151	2N4159	25	8.0	1.5	30	$1.11	$0.74
2N4152	2N4160	50	8.0	1.5	30	1.26	.84
2N4153	2N4161	100	8.0	1.5	30	1.41	.94
2N4154	2N4162	200	8.0	1.5	30	1.68	1.04
2N4155	2N4163	300	8.0	1.5	30	1.93	1.29
2N4156	2N4164	400	8.0	1.5	30	2.25	1.49
2N4157	2N4165	500	8.0	1.5	30	3.43	2.29
2N4158	2N4166	500	8.0	1.5	30	4.46	2.98

Motorola Type		V_{FOM} V_{ROM} V	I_T rms A	V_{GT} V	I_{GT} mA	Net Ea., Lots	
Case 86	Case 86L					1-99	100-999
2N4167	2N4175	25	8.0	1.5	30	$1.34	$0.89
2N4168	2N4176	50	8.0	1.5	30	1.49	.99
2N4169	2N4177	100	8.0	1.5	30	1.64	1.09
2N4170	2N4178	200	8.0	1.5	30	1.79	1.19
2N4171	2N4179	300	8.0	1.5	30	2.16	1.44
2N4172	2N4180	400	8.0	1.5	30	2.46	1.64
2N4173	2N4181	500	8.0	1.5	30	3.66	2.44
2N4174	2N4182	600	8.0	1.5	30	4.69	3.13

Motorola Type		V_{FOM} V_{ROM} V	I_T rms A	V_{GT} V	I_{GT} mA	Net Ea., Lots	
Case 87L	Case 88L					1-99	100-999
2N4183	2N4191	25	8.0	1.5	30	$1.19	$0.79
2N4184	2N4192	50	8.0	1.5	30	1.34	.89
2N4185	2N4193	100	8.0	1.5	30	1.49	.99
2N4186	2N4194	200	8.0	1.5	30	1.63	1.09
2N4187	2N4195	300	8.0	1.5	30	2.01	1.34
2N4188	2N4196	400	8.0	1.5	30	2.31	1.54
2N4189	2N4197	500	8.0	1.5	30	3.51	2.34
2N4190	2N4198	600	8.0	1.6	30	4.54	3.03

LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

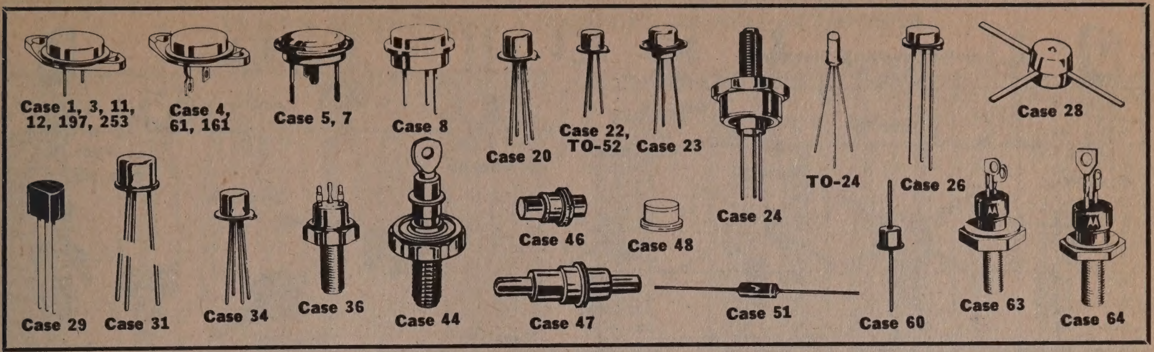
SEE FOLLOWING PAGES FOR CASE ILLUSTRATIONS.

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C		Net Ea., Lots	
				V_{GT} V	I_{GT} mA	1-99	100-999
MCR2315-1	86	25	8.0	1.5	40	$ 1.19	$ 0.79
MCR2315-2	86	50	8.0	1.5	40	1.34	.89
MCR2315-3	86	100	8.0	1.5	40	1.48	.99
MCR2315-4	86	200	8.0	1.5	40	1.64	1.09
MCR2315-5	86	300	8.0	1.5	40	2.01	1.34
MCR2315-6	86	400	8.0	1.5	40	2.31	1.54
MCR2614L-1	87L	25	8.0	1.5	40	1.03	.69
MCR2614L-2	87L	50	8.0	1.5	40	1.08	.79
MCR2614L-3	87L	100	8.0	1.5	40	1.33	.89
MCR2614L-4	87L	200	8.0	1.5	40	1.50	.99
MCR2614L-5	87L	300	8.0	1.5	40	1.86	1.24
MCR2614L-6	87L	400	8.0	1.5	40	2.16	1.44
MCR3818-1*	174	25	20.0	1.5	40	2.75	1.90
2N5164*	174	50	20.0	1.5	40	3.30	2.20
MCR3818-3*	174	100	20.0	1.5	40	3.45	2.50
2N5165*	174	200	20.0	1.5	40	4.65	3.10
MCR3818-5*	174	300	20.0	1.5	40	4.70	3.40
2N5166*	174	400	20.0	1.5	40	5.99	4.26
MCR3818-7*	174	500	20.0	1.5	40	6.35	4.60
2N5167*	174	600	20.0	1.5	40	8.10	5.90
MCR3918-1*	175	25	20.0	1.5	40	3.10	2.25
2N5168*	175	50	20.0	1.5	40	3.70	2.45
MCR3918-3*	175	100	20.0	1.5	40	3.90	2.75
2N5169*	175	200	20.0	1.5	40	5.00	3.35
MCR3918-5*	175	300	20.0	1.5	40	5.10	3.70
2N5170*	175	400	20.0	1.5	40	6.80	4.55
MCR3918-7*	175	500	20.0	1.5	40	6.90	4.95
2N5171*	175	600	20.0	1.5	40	8.69	6.32
2N6167	235	100	20.0	1.5	40	3.83	2.75
2N6168	235	200	20.0	1.5	40	3.96	2.88
2N6169	235	400	20.0	1.5	40	5.23	3.80
2N6170	235	600	20.0	1.5	40	6.44	4.68
MCR649-1	61†	25	20.0	3.5	80	2.80	2.05
MCR649-2	61†	50	20.0	3.5	80	3.45	2.30
MCR649-3	61†	100	20.0	3.5	80	3.70	2.60
MCR649-4	61†	200	20.0	3.5	80	4.60	3.50
MCR649-5	61†	300	20.0	3.5	80	5.45	4.00
MCR649-6	61†	400	20.0	3.5	80	6.45	4.50
MCR649-7	61†	500	20.0	3.5	80	7.70	5.40
2N2573	54‡	25	25.0	3.5	40	2.92	2.10
2N2574	54‡	50	25.0	3.5	40	3.56	2.50
2N2575	54‡	100	25.0	3.5	40	4.45	3.05
2N2576	54‡	200	25.0	3.5	40	4.75	3.65
2N2577	54‡	300	25.0	3.5	40	5.75	4.20
2N2578	54‡	400	25.0	3.5	40	6.77	4.88
2N2579	54‡	500	25.0	3.5	40	8.00	5.84
MCR1907-1	64	25	25.0	1.5	30	9.00	6.00
MCR1907-2	64	50	25.0	1.5	30	9.75	6.50
MCR1907-3	64	100	25.0	1.5	30	11.25	7.50
MCR1907-4	64	200	25.0	1.5	30	16.20	10.80
MCR1907-5	64	300	25.0	1.5	30	24.45	16.30
MCR1907-6	64	400	25.0	1.5	30	29.25	19.50
2N681	263	25	25.0	3.0	25	2.34	1.70
2N682	263	50	25.0	3.0	25	2.82	2.05
2N683	263	100	25.0	3.0	25	3.57	2.60
2N684	263	150	25.0	3.0	25	4.19	3.05
2N685	263	200	25.0	3.0	25	4.81	3.50
2N686	263	250	25.0	3.0	25	5.36	3.90
2N687	263	300	25.0	3.0	25	5.77	4.20
2N688	263	400	25.0	3.0	25	6.74	4.90
2N689	263	500	25.0	3.0	25	8.05	5.85
2N690	263	600	25.0	3.0	25	8.67	6.30
MCR3835-1	174	25	35.0	1.6	40	3.34	2.36
MCR3835-2	174	50	35.0	1.6	40	4.00	2.84
2N3870	174	100	35.0	1.6	40	3.88	2.82
2N3871	174	200	35.0	1.6	40	4.54	3.30
MCR3835-5	174	300	35.0	1.6	40	5.45	3.95
2N3872	174	400	35.0	1.6	40	6.11	4.44
MCR3835-7	174	500	35.0	1.6	40	7.60	5.55
2N3873	174	600	35.0	1.6	40	8.22	5.98
MCR3935-1	175	25	35.0	1.6	40	3.75	2.75
MCR3935-2	175	50	35.0	1.6	40	4.45	3.25
2N3896	175	100	35.0	1.6	40	4.37	3.18
2N3897	175	200	35.0	1.6	40	5.03	3.66
MCR3935-5	175	300	35.0	1.6	40	6.25	4.55
2N3898	175	400	35.0	1.6	40	6.60	4.80
MCR3935-7	175	500	35.0	1.6	40	8.10	6.05
2N3899	175	600	35.0	1.6	40	8.75	6.36
2N6171	235	100	35.0	1.6	40	5.65	4.15
2N6172	235	200	35.0	1.6	40	6.55	4.75
2N6173	235	400	35.0	1.6	40	8.55	6.25
2N6174	235	600	35.0	1.6	40	11.30	8.25
MCR35-05	289	50	35.0	1.6	40	6.55	4.35
MCR35-10	289	100	35.0	1.6	40	8.70	5.80
MCR35-20	289	200	35.0	1.6	40	9.60	6.40
MCR35-40	289	400	35.0	1.6	40	11.85	7.90
MCR35-60	289	600	35.0	1.6	40	14.85	9.90
MCR35-80	289	800	35.0	1.6	40	18.60	12.40
MCR36-05	290	50	35.0	1.6	40	6.30	4.20
MCR36-10	290	100	35.0	1.6	40	8.50	5.65
MCR36-20	290	200	35.0	1.6	40	9.40	6.25
MCR36-40	290	400	35.0	1.6	40	11.60	7.75
MCR36-60	290	600	35.0	1.6	40	14.60	9.75
MCR36-80	290	800	35.0	1.6	40	18.10	12.05

*Anode-to-case; cathode-to-case available; prices on request.
†Available in Case 54 (pins instead of lugs) at same price. Specify MCR649P1–649P7. ‡Case 61 with pins instead of lugs.

MOTOROLA Semiconductors

SILICON CONTROLLED RECTIFIERS (THYRISTORS)



SILICON CONTROLLED RECTIFIERS

IN PLASTIC CASE

Listed in order of on-state (rms) current.

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C		Net Each, Lots of		
				V_{GT} V	I_{GT} mA	1-24	25-99	100-999
MCR051	28	15	0.25	0.8	0.2	$3.40	$2.90	$2.25
MCR052	28	30	0.25	0.8	0.2	3.75	3.25	2.50
MCR053	28	60	0.25	0.8	0.2	4.20	3.60	2.80
MCR054	28	100	0.25	0.8	0.2	4.95	4.25	3.30

Motorola Type	Case	V_{FOM} V_{ROM} V	I_T rms A	At 25° C		Net Ea., Lots	
				V_{GT} V	I_{GT} mA	1-99	100-999
MCR101	29	15	0.8	0.8	0.2	$ 0.42	$0.28
MCR102	29	30	0.8	0.8	0.2	.49	.32
MCR103	29	60	0.8	0.8	0.2	.60	.40
MCR104	29	100	0.8	0.8	0.2	.70	.46
MCR115	29	150	0.8	0.8	0.2	.82	.55
MCR120	29	200	0.8	0.8	0.2	.90	.60
2N5060	29	30	0.8	0.8	0.2	.63	.42
2N5061	29	60	0.8	0.8	0.2	.66	.44
2N5062	29	100	0.8	0.8	0.2	.78	.52
2N5063	29	150	0.8	0.8	0.2	.87	.58
2N5064	29	200	0.8	0.8	0.2	.94	.63
2N6236	77	30	4.0	0.8	0.2	.73	.49
2N6237	77	50	4.0	0.8	0.2	.78	.52
2N6238	77	100	4.0	0.8	0.2	.81	.54
2N6239	77	200	4.0	0.8	0.2	.90	.60
2N6240	77	400	4.0	0.8	0.2	1.30	.87
2N6241	77	600	4.0	0.8	0.2	2.25	1.50
MCR106-1	77	30	4.0	1.0	0.5	.74	.49
MCR106-2	77	60	4.0	1.0	0.5	.78	.52
MCR106-3	77	100	4.0	1.0	0.5	.81	.54
MCR106-4	77	200	4.0	1.0	0.5	.90	.60
MCR106-5	77	300	4.0	1.0	0.5	1.13	.75
MCR106-6	77	400	4.0	1.0	0.5	1.31	.87
MCR106-7	77	500	4.0	1.0	0.5	2.10	1.44
MCR106-8	77	600	4.0	1.0	0.5	2.25	1.50
MCR107-1	77	30	4.0	1.5	20.0	.70	.47
MCR107-2	77	60	4.0	1.5	20.0	.75	.50
MCR107-3	77	100	4.0	1.5	20.0	.76	.51
MCR107-4	77	200	4.0	1.5	20.0	.85	.57
MCR107-5	77	300	4.0	1.5	20.0	1.03	.71
MCR107-6	77	400	4.0	1.5	20.0	1.23	.82
MCR107-7	77	500	4.0	1.5	20.0	2.06	1.37
MCR107-8	77	600	4.0	1.5	20.0	2.19	1.46
MCR406-1	90	30	4.0	0.8	0.2	.90	.60
MCR406-2	90	60	4.0	0.8	0.2	1.05	.70
MCR406-3	90	100	4.0	0.8	0.2	1.12	.75
MCR406-4	90	200	4.0	0.8	0.2	1.27	.85
MCR407-1	90	30	4.0	1.0	0.5	.82	.55
MCR407-2	90	60	4.0	1.0	0.5	.97	.65
MCR407-3	90	100	4.0	1.0	0.5	1.05	.70
MCR407-4	90	200	4.0	1.0	0.5	1.20	.80
MCR3000-1	90	25	8.0	1.5	30.0	1.10	.75
2N4441	90	50	8.0	1.5	30.0	1.20	.80
MCR3000-3	90	100	8.0	1.5	30.0	1.35	.90
2N4442	90	200	8.0	1.5	30.0	1.50	1.00
MCR3000-5	90	300	8.0	1.5	30.0	1.65	1.10
2N4443	90	400	8.0	1.5	30.0	2.00	1.35
MCR3000-7	90	500	8.0	1.5	30.0	2.60	1.70
2N4444	90	600	8.0	1.5	30.0	3.25	2.15
2N6394	221	50	12.0	1.5	30.0	1.32	.88
2N6395	221	100	12.0	1.5	30.0	1.49	.99
2N6396	221	200	12.0	1.5	30.0	1.65	1.10
2N6397	221	400	12.0	1.5	30.0	2.24	1.49
2N6398	221	600	12.0	1.5	30.0	3.55	2.37
2N6399	221	800	12.0	1.5	30.0	4.60	3.05
2N6400	221	50	16.0	1.5	30.0	1.68	1.12
2N6401	221	100	16.0	1.5	30.0	1.78	1.18
2N6402	221	200	16.0	1.5	30.0	1.98	1.32
2N6403	221	400	16.0	1.5	30.0	2.57	1.72
2N6404	221	600	16.0	1.5	30.0	3.96	2.64
2N6405	221	800	16.0	1.5	30.0	5.94	3.96

HOT-CARRIER POWER RECTIFIERS

Utilize Schottky barrier principle in a large area metal-to-silicon diode. Multi-Cell combinations providing increased capability available on request.

Motorola Type	Case	V_{RRM} V	I_O at T_C		V_F at I_F		Net Ea., Lots	
			A	°C	V	A	1-99	100-999
1N5823	60	20	5	80*	0.36	5	$ 5.40	$ 3.60
1N5824	60	30	5	80*	0.37	5	6.45	4.30
1N5825	60	40	5	80*	0.38	5	8.10	5.40
1N5826	245	20	15	85	0.44	15	7.20	4.80
1N5827	245	30	15	85	0.47	15	8.60	5.75
1N5828	245	40	15	85	0.50	15	10.80	7.20
1N5829	245	20	25	85	0.44	25	9.00	6.00
1N5830	245	30	25	85	0.46	25	10.80	7.20
1N5831	245	40	25	85	0.48	25	13.50	9.00
1N5832	257	20	40	75	0.52	40	13.50	9.00
1N5833	257	30	40	75	0.55	40	16.20	10.80
1N5834	257	40	40	75	0.59	40	20.25	13.50

*At T_L.

POWER THYRISTORS

HIGH CURRENT SCRs

Rated 110 A rms. Choice of flexible lead or flag terminals.

Motorola Type	Case	V_{DRM} V_{RRM} V	V_{RSM} V	Net Each, Lots of		
				1-5	6-9	10-24
2N4361	219	100	200	$ 25.50	$ 20.25	$ 15.25
2N4362	219	200	300	28.75	22.75	17.25
2N4363	219	400	500	40.00	31.75	24.00
2N4364	219	600	700	54.00	42.75	32.00
2N4365	219	800	900	80.00	63.75	47.50
2N4366	219	1000	1100	112.00	88.75	67.50
2N4367	219	1200	1300	152.00	120.75	90.50
2N4368	219	1400	1500	251.00	200.75	150.50
2N4371	246	100	200	24.50	19.50	14.75
2N4372	246	200	300	27.75	22.00	16.75
2N4373	246	400	500	39.00	31.00	23.50
2N4374	246	600	700	53.00	42.00	31.50
2N4375	246	800	900	79.00	63.00	47.00
2N4376	246	1000	1100	111.00	88.00	67.50
2N4377	246	1200	1300	151.00	120.00	90.00
2N4378	246	1400	1500	250.00	200.00	150.00

Following types are in **Case 220.**

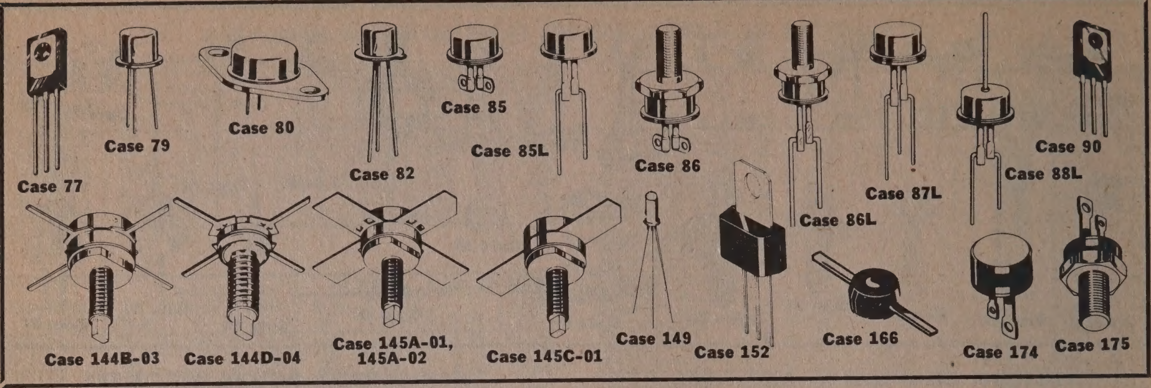
V_{DRM} V_{RRM} V	235 AMP rms			380 AMP rms		
	Motorola Type	Net Ea., Lots		Motorola Type	Net Ea., Lots	
		1-4	5-9		1-4	5-9
100	MCR235-10	$19.00	$14.00	MCR380-10	$42.00	$32.25
200	MCR235-20	22.50	16.50	MCR380-20	50.50	38.50
300	MCR235-30	25.50	18.75	MCR380-30	57.00	43.50
400	MCR235-40	30.50	22.75	MCR380-40	66.50	50.50
500	MCR235-50	35.00	25.50	MCR380-50	77.00	61.75
600	MCR235-60	42.00	31.25	MCR380-60	89.00	72.75
700	MCR235-70	52.50	41.50	MCR380-70	105.00	84.00
800	MCR235-80	63.00	49.00	MCR380-80	119.00	94.50
900	MCR235-90	72.50	56.00	MCR380-90	134.00	105.00
1000	MCR235-100	88.50	67.00	MCR380-100	150.00	113.00
1100	MCR235-110	105.00	80.00	MCR380-110	175.00	130.50
1200	MCR235-120	121.00	94.00	MCR380-120	200.00	148.00
1300	MCR235-130	137.00	106.00	MCR380-130	227.00	167.00
1400	MCR235-140	155.00	120.00	MCR380-140	255.00	185.00
1500	MCR235-150	192.00	142.00	MCR380-150	285.00	205.00

470 AMP rms							
V_{DRM} V_{RRM} V	Motorola Type MCR-	Net Each, Lots of		V_{DRM} V_{RRM} V	Motorola Type MCR-	Net Each, Lots of	
		1-4	5-9			1-4	5-9
100	470-10	$ 46.20	$ 35.50	900	470-90	$176.00	$124.50
200	470-20	55.50	42.50	1000	470-100	197.00	140.00
300	470-30	63.00	47.50	1100	470-110	216.00	157.00
400	470-40	75.50	55.00	1200	470-120	236.00	174.00
500	470-50	92.50	67.00	1300	470-130	252.00	192.00
600	470-60	108.00	79.50	1400	470-140	273.00	210.00
700	470-70	130.00	93.00	1500	470-150	295.00	225.00
800	470-80	151.00	109.00				

LARGER QUANTITY PRICES AVAILABLE ON REQUEST. SEE FOLLOWING PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

MOTOROLA Semiconductors

SILICON THYRISTORS



POWER THYRISTORS—FAST SWITCHING SILICON RECTIFIERS

110 A rms—CASE 219

Available in Case 246 (flag terminals). Specify prefix **MCR156-** for $t_{off}=10$ μs; **MCR157-** for $t_{off}=20$ μs; **MCR159-** for $t_{off}=30$ μs. Prices are the same as for Case 219.

Motorola Type	V_{DRM} V_{RRM} V	t_{off} μs	Net Each, Lots of 1-4	Net Each, Lots of 5-9
MCR154-10	100	10	$ 36.00	$ 21.75
MCR154-20	200	10	41.00	24.75
MCR154-30	300	10	46.50	28.00
MCR154-40	400	10	55.00	33.00
MCR154-50	500	10	65.50	39.50
MCR154-60	600	10	76.00	45.75
MCR155-10	100	20	31.50	19.00
MCR155-20	200	20	36.00	21.75
MCR155-30	300	20	40.00	24.00
MCR155-40	400	20	46.50	28.00
MCR155-50	500	20	54.00	32.50
MCR155-60	600	20	61.00	36.75
MCR158-10	100	30	36.00	21.75
MCR158-20	200	30	41.00	24.75
MCR158-30	300	30	46.50	28.00
MCR158-40	400	30	55.00	33.00
MCR158-50	500	30	65.50	39.50
MCR158-60	600	30	76.00	47.75
MCR158-70	700	30	90.50	54.50
MCR158-80	800	30	105.00	63.00
MCR158-90	900	30	124.00	74.50
MCR158-100	1000	30	145.00	87.00
MCR158-110	1100	30	166.00	99.75
MCR158-120	1200	30	189.00	114.00

235 A rms—CASE 220

Motorola Type	V_{DRM} V_{RRM} V	t_{off} μs	Net Each, Lots of 1-4	Net Each, Lots of 5-9
MCR235A-10	100	10	$33.00	$25.00
MCR235A-20	200	10	38.00	29.00
MCR235A-30	300	10	43.50	33.00
MCR235A-40	400	10	48.50	37.25
MCR235A-50	500	10	55.00	43.00
MCR235A-60	600	10	61.00	48.00
MCR235B-10	100	15	$30.50	$21.25
MCR235B-20	200	15	33.50	22.75
MCR235B-30	300	15	38.50	26.00
MCR235B-40	400	15	43.50	30.50
MCR235B-50	500	15	49.00	36.00
MCR235B-60	600	15	55.00	41.00
MCR235B-70	700	15	61.50	46.00
MCR235B-80	800	15	69.00	51.00
MCR235C-10	100	20	28.50	20.00
MCR235C-20	200	20	30.50	21.50
MCR235C-30	300	20	35.00	24.50
MCR235C-40	400	20	39.00	28.50
MCR235C-50	500	20	43.50	33.00
MCR235C-60	600	20	48.50	38.00
MCR235C-70	700	20	54.00	43.00
MCR235C-80	800	20	59.50	47.75
MCR235C-90	900	20	66.00	52.50
MCR235C-100	1000	20	74.00	59.00

380 A rms—CASE 220

Motorola Type	V_{DRM} V_{RRM} V	t_{off} μs	Net Each, Lots of 1-4	Net Each, Lots of 5-9
MCR380B-10	100	15	$ 62.50	$ 48.50
MCR380B-20	200	15	67.00	53.50
MCR380B-30	300	15	74.00	56.50
MCR380B-40	400	15	86.00	64.00
MCR380B-50	500	15	100.00	73.75
MCR380B-60	600	15	113.50	87.50
MCR380B-70	700	15	127.00	99.00
MCR380B-80	800	15	145.00	108.00
MCR380C-10	100	20	57.00	44.00
MCR380C-20	200	20	61.00	48.50
MCR380C-30	300	20	67.50	51.50
MCR380C-40	400	20	78.00	58.00
MCR380C-50	500	20	90.50	67.00
MCR380C-60	600	20	103.00	79.50
MCR380C-70	700	20	116.00	90.00
MCR380C-80	800	20	131.00	98.00
MCR380C-90	900	20	148.00	108.00
MCR380C-100	1000	20	168.00	125.00
MCR380D-10	100	30	50.50	39.50
MCR380D-20	200	30	56.00	44.50
MCR380D-30	300	30	63.00	48.75
MCR380D-40	400	30	$ 71.00	$ 55.75
MCR380D-50	500	30	83.00	65.00
MCR380D-60	600	30	95.00	78.25
MCR380D-70	700	30	109.00	88.00
MCR380D-80	800	30	125.00	96.50
MCR380D-90	900	30	141.00	107.00
MCR380D-100	1000	30	159.00	121.00
MCR380D-110	1100	30	186.00	138.00
MCR380D-120	1200	30	215.00	159.00

470 A rms—CASE 220

Motorola Type	V_{DRM} V_{RRM} V	t_{off} μs	Net Each, Lots of 1-4	Net Each, Lots of 5-9
MCR470C-10	100	20	$ 61.75	$ 47.50
MCR470C-20	200	20	73.00	55.50
MCR470C-30	300	20	83.50	62.25
MCR470C-40	400	20	102.00	76.00
MCR470C-50	500	20	130.00	95.00
MCR470C-60	600	20	158.00	115.00
MCR470C-70	700	20	186.00	133.00
MCR470C-80	800	20	217.00	155.00
MCR470D-10	100	30	56.25	44.00
MCR470D-20	200	30	66.50	51.75
MCR470D-30	300	30	76.00	58.50
MCR470D-40	400	30	91.00	68.25
MCR470D-50	500	30	110.00	81.50
MCR470D-60	600	30	130.00	95.00
MCR470D-70	700	30	155.00	110.00
MCR470D-80	800	30	182.50	128.00
MCR470D-90	900	30	211.75	147.50
MCR470D-100	1000	30	244.00	167.00
MCR470E-10	100	40	51.25	40.00
MCR470E-20	200	40	60.50	47.00
MCR470E-30	300	40	69.00	53.25
MCR470E-40	400	40	83.00	62.00
MCR470E-50	500	40	100.00	74.00
MCR470E-60	600	40	118.00	86.50
MCR470E-70	700	40	141.00	100.00
MCR470E-80	800	40	166.00	116.50
MCR470E-90	900	40	192.00	134.00
MCR470E-100	1000	40	222.00	152.00
MCR470E-110	1100	40	255.00	172.00
MCR470E-120	1200	40	290.00	205.00

SILICON BIDIRECTIONAL THYRISTORS (TRIACS)—METAL CASE

Following types are 2-mode triggering.

Motorola Type	Case	V_{BOM} V	I_T A rms	I_{GT} mA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MAC4-1	85	25	10	50	$0.95	$0.65
MAC4-2	85	50	10	50	1.15	.77
MAC4-3	85	100	10	50	1.45	.97
MAC4-4	85	200	10	50	1.65	1.10
MAC4-5	85	300	10	50	1.85	1.23
MAC4-6	85	400	10	50	2.05	1.36
MAC4-7	85	500	10	50	2.35	1.57
MAC4-8	85	600	10	50	2.55	1.70
MAC5-1	86	25	10	50	1.05	.70
MAC5-2	86	50	10	50	1.25	.84
MAC5-3	86	100	10	50	1.55	1.04
MAC5-4	86	200	10	50	1.90	1.27
MAC5-5	86	300	10	50	2.05	1.37
MAC5-6	86	400	10	50	2.25	1.50
MAC5-7	86	500	10	50	2.50	1.67
MAC5-8	86	600	10	50	2.80	1.87
MAC6-1	87L	25	15	50	1.00	.67
MAC6-2	87L	50	15	50	1.20	.80
MAC6-3	87L	100	15	50	1.50	1.00
MAC6-4	87L	200	15	50	1.70	1.13
MAC6-5	87L	300	15	50	1.90	1.40
MAC6-6	87L	400	15	50	2.10	1.50
MAC6-7	87L	500	15	50	2.40	1.60
MAC6-8	87L	600	15	50	2.60	1.73
MAC37-1	174	25	25	75	$ 2.20	$1.53
MAC37-2	174	50	25	75	2.50	1.89
MAC37-3	174	100	25	75	2.80	2.30
MAC37-4	174	200	25	75	3.20	2.65
MAC37-5	174	300	25	75	3.60	2.85
MAC37-6	174	400	25	75	3.80	3.10
MAC37-7	174	500	25	75	4.40	3.50
MAC38-1	175	25	25	75	2.40	1.71
MAC38-2	175	50	25	75	2.70	2.07
MAC38-3	175	100	25	75	3.00	2.45
MAC38-4	175	200	25	75	3.48	2.75
MAC38-5	175	300	25	75	3.80	2.95
MAC38-6	175	400	25	75	4.15	3.20
MAC38-7	175	500	25	75	4.70	3.60
MAC30-05	289	50	30	50	4.43	2.95
MAC30-10	289	100	30	50	5.48	3.65
MAC30-20	289	200	30	50	7.72	5.15
MAC30-40	289	400	30	50	8.93	5.95
MAC30-60	289	600	30	50	10.35	6.90
MAC30-80	289	800	30	50	12.65	8.50
MAC31-05	290	50	30	50	4.28	2.85
MAC31-10	290	100	30	50	5.33	3.55
MAC31-20	290	200	30	50	7.56	5.05
MAC31-40	290	400	30	50	8.78	5.85
MAC31-60	290	600	30	50	10.05	6.75
MAC31-80	290	800	30	50	12.42	8.35

LARGER QUANTITY PRICES AVAILABLE ON REQUEST. SEE PRECEDING PAGE FOR ADDITIONAL CASE ILLUSTRATIONS.

SILICON BIDIRECTIONAL THYRISTORS (TRIACS)—CONTINUED

METAL CASE

Motorola Type	Case	V_{BOM} V	I_T rms A	At 25° C		Net Ea., Lots	
				I_{GT} mA	V_{GT} V	1-99	100-999
MAC1-1	85	25	10.0	40	2.0	$ 1.00	$0.67
MAC1-2	85	50	10.0	40	2.0	1.20	.80
MAC1-3	85	100	10.0	40	2.0	1.50	1.00
MAC1-4	85	200	10.0	40	2.0	1.70	1.13
MAC1-5	85	300	10.0	40	2.0	1.90	1.27
MAC1-6	85	400	10.0	40	2.0	2.10	1.40
MAC1-7	85	500	10.0	40	2.0	2.40	1.60
MAC1-8	85	600	10.0	40	2.0	2.60	1.73
2N6139	86	200	10.0	50*	2.0*	1.97	1.64
2N6140	86	400	10.0	50*	2.0*	2.32	1.94
2N6141	86	600	10.0	50*	2.0*	2.86	2.38
MAC2-1	86	25	10.0	40	2.0	1.15	.77
MAC2-2	86	50	10.0	40	2.0	1.35	.90
MAC2-3	86	100	10.0	40	2.0	1.65	1.10
2N6142	250	200	10.0	50*	2.0*	2.64	2.20
2N6143	250	400	10.0	50*	2.0*	2.99	2.50
2N6144	250	600	10.0	50*	2.0*	3.54	2.95
2N6148	87L	200	15.0	50*	2.0*	1.78	1.48
2N6149	87L	400	15.0	50*	2.0*	2.13	1.78
2N6150	87L	600	15.0	50*	2.0*	2.67	2.22
MAC3-1	87L	25	15.0	40	2.0	1.10	.74
MAC3-2	87L	50	15.0	40	2.0	1.30	.87
MAC3-3	87L	100	15.0	40	2.0	1.60	1.07
2N5571	174	200	15.0	50†	2.5†	2.36	1.97
2N5572	174	400	15.0	50†	2.5†	2.83	2.36
MAC40797	174	600	15.0	50†	2.5†	3.54	2.95
2N5573	175	200	15.0	50†	2.5†	2.60	2.17
2N5574	175	400	15.0	50†	2.5†	3.07	2.56
MAC40798	175	600	15.0	50†	2.5†	5.78	3.15
2N6145	235	200	15.0	50†	2.5†	3.44	2.87
2N6146	235	400	15.0	50†	2.5†	3.91	3.26
2N6147	235	600	15.0	50†	2.5†	4.62	3.85
MAC35-1	174	25	25.0	75‡	3.0‡	2.30	1.70
MAC35-2	174	50	25.0	75‡	3.0‡	2.60	2.10
MAC35-3	174	100	25.0	75‡	3.0‡	2.90	2.40
MAC36-1	175	25	25.0	75‡	3.0‡	2.50	1.90
MAC36-2	175	50	25.0	75‡	3.0‡	2.80	2.20
MAC36-3	175	100	25.0	75‡	3.0‡	3.10	2.55
2N6157	174	200	25.0	60§	2.0§	3.29	2.74
2N6158	174	400	25.0	60§	2.0§	3.94	3.28
2N6159	174	600	25.0	60§	2.0§	4.92	4.10
2N6160	175	200	25.0	60§	2.0§	3.53	2.94
2N6161	175	400	25.0	60§	2.0§	4.18	3.48
2N6162	175	600	25.0	60§	2.0§	5.16	4.30
2N6163	235	200	25.0	60§	2.0§	4.37	3.64
2N6164	235	400	25.0	60§	2.0§	5.02	4.18
2N6165	235	600	25.0	60§	2.0§	6.00	5.00
MAC30A-05	289	50	30.0	50#	2.0#	4.55	3.05
MAC30A-10	289	100	30.0	50#	2.0#	5.65	3.75
MAC30A-20	289	200	30.0	50#	2.0#	7.90	5.25
MAC30A-40	289	400	30.0	50#	2.0#	9.10	6.05
MAC30A-60	289	600	30.0	50#	2.0#	10.50	7.00
MAC30A-80	289	800	30.0	50#	2.0#	12.90	8.60
MAC31A-05	290	50	30.0	50#	2.0#	4.45	2.95
MAC31A-10	290	100	30.0	50#	2.0#	5.50	3.65
MAC31A-20	290	200	30.0	50#	2.0#	7.70	5.15
MAC31A-40	290	400	30.0	50#	2.0#	8.95	5.95
MAC31A-60	290	600	30.0	50#	2.0#	10.25	6.85
MAC31A-80	290	800	30.0	50#	2.0#	12.60	8.45
2N5441	237	200	40.0	70•	2.0•	5.64	4.10
2N5442	237	400	40.0	70•	2.0•	6.77	4.92
2N5443	237	600	40.0	70•	2.0•	8.46	6.16
2N5444	238	200	40.0	70•	2.0•	5.97	4.34
2N5445	238	400	40.0	70•	2.0•	7.10	5.16
2N5446	238	600	40.0	70•	2.0•	8.79	6.40
MAC40688	239	200	40.0	70•	2.0•	7.13	5.18
MAC40689	239	400	40.0	70•	2.0•	8.25	6.00
MAC40690	239	600	40.0	70•	2.0•	9.95	7.24

*I_{GT} = 75 mA, V_{GT} = 2.5 V. †I_{GT} = 80 mA, V_{GT} = 2.5 V. ‡I_{GT} = 100 mA, V_{GT} = 3.0 V. §I_{GT} = 70 mA, V_{GT} = 2.1 V; I_{GT} = 100 mA, V_{GT} = 2.5 V. #I_{GT} = 70 mA, V_{GT} = 2.5 V. •I_{GT} = 100 mA, V_{GT} = 2.5 V.

PLASTIC CASE

Series MAC92, MAC93 and MCA94 also available: Same ratings as **A** version except I_{GT} = 5.0 mA; prices on request.

Motorola Type	Case	V_{BOM} V	I_T rms A	At 25° C		Net Ea., Lots	
				I_{GT} mA	V_{GT} V	1-99	100-999
MAC92A1	29	30	0.45	15	2.0	$0.78	$0.60
MAC92A2	29	60	0.45	15	2.0	.81	.62
MAC92A3	29	100	0.45	15	2.0	.85	.65
MAC92A4	29	200	0.45	15	2.0	.91	.70
MAC92A5	29	300	0.45	15	2.0	1.05	.80
MAC92A6	29	400	0.45	15	2.0	1.25	.95
MAC93A1	29	30	0.65	12	2.0	.82	.63
MAC93A2	29	60	0.65	12	2.0	.91	.70
MAC93A3	29	100	0.65	12	2.0	1.08	.83
MAC93A4	29	200	0.65	12	2.0	1.28	.98
MAC94A1	29	30	0.8	10	2.0	.90	.70
MAC94A2	29	60	0.8	10	2.0	1.00	.77
MAC94A3	29	100	0.8	10	2.0	1.17	.90
MAC94A4	29	200	0.8	10	2.0	1.37	1.05

PLASTIC CASE (CONT'D)

Series 2N6000 also available in **A** and **B** version; prices on request.

Motorola Type	Case	V_{BOM} V	I_T rms A	At 25° C		Net Ea., Lots	
				I_{GT} mA	V_{GT} V	1-99	100-999
2N6068	77	25	4.0	60	2.5*	$0.84	$0.56
2N6069	77	50	4.0	60	2.5*	.95	.63
2N6070	77	100	4.0	60	2.5*	1.07	.71
2N6071	77	200	4.0	60	2.5*	1.17	.78
2N6072	77	300	4.0	60	2.5*	1.23	.82
2N6073	77	400	4.0	60	2.5*	1.28	.85
2N6074	77	500	4.0	60	2.5*	1.65	1.30
2N6075	77	600	4.0	60	2.5*	1.85	1.55
2N6342	221	200	8.0	50	2.0	1.10	.95
2N6343	221	400	8.0	50	2.0	1.45	1.15
2N6344	221	600	8.0	50	2.0	2.00	1.60
2N6345	221	800	8.0	50	2.0	3.80	3.05
2N6346	221	200	8.0	75	2.5	1.30	1.05
2N6347	221	400	8.0	75	2.5	1.55	1.25
2N6348	221	600	8.0	75	2.5	2.10	1.75
2N6349	221	800	8.0	75	2.5	4.00	3.25
MAC10-1	90	25	10.0	50†	2.0†	1.10	.78
MAC10-2	90	50	10.0	50†	2.0†	1.20	.88
MAC10-3	90	100	10.0	50†	2.0†	1.30	.99
2N6151	90	200	10.0	50†	2.0†	1.40	1.15
MAC10-5	90	300	10.0	50†	2.0†	1.60	1.32
2N6152	90	400	10.0	50†	2.0†	1.70	1.40
MAC10-7	90	500	10.0	50†	2.0†	1.95	1.70
2N6153	90	600	10.0	50†	2.0†	2.10	1.85
MAC11-1	90	25	10.0	50	2.0	1.00	.70
MAC11-2	90	50	10.0	50	2.0	1.10	.79
MAC11-3	90	100	10.0	50	2.0	1.20	.89
2N6154	90	200	10.0	50	2.0	1.30	1.00
MAC11-5	90	300	10.0	50	2.0	1.50	1.19
2N6155	90	400	10.0	50	2.0	1.60	1.30
MAC11-7	90	500	10.0	50	2.0	1.85	1.60
2N6156	90	600	10.0	50	2.0	2.00	1.75
2N6342A	221	200	12.0	50	2.0	1.40	1.10
2N6343A	221	400	12.0	50	2.0	1.70	1.35
2N6344A	221	600	12.0	50	2.0	2.30	1.85
2N6345A	221	800	12.0	50	2.0	4.25	3.40
2N6346A	221	200	12.0	75	2.5	1.50	1.20
2N6347A	221	400	12.0	75	2.5	1.80	1.45
2N6348A	221	600	12.0	75	2.5	2.50	2.00
2N6349A	221	800	12.0	75	2.5	4.50	3.60

*At 40° C. †I_{GT} = 75 mA, V_{GT} = 2.5 V.

PULSE MODULATOR SCRs

100 A (PULSE)—CASE 63

t_{gt} = 0.4 μsec; dv/dt = 250 V/μsec.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C			Net Each, Lots of		
		I_{GT} mA	V_{GT} V	I_H mA	1-24	25-99	100-999
2N4199*	300	50	1.5	3.0†	$21.25	$19.10	$15.00
2N4200*	400	50	1.5	3.0†	28.75	25.80	20.00
2N4201*	500	50	1.5	3.0†	32.50	29.10	22.50
2N4202*	600	50	1.5	3.0†	44.25	38.40	29.50
2N4203*	700	50	1.5	3.0†	51.75	45.05	34.50
2N4204*	800	50	1.5	3.0†	63.75	55.70	42.50

*JAN type available. †Minimum.

t_{gt} = 0.5 μsec; dv/dt = 50 V/μsec; I^2t = 35 A^2s.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C			Net Ea., Lots of	
		I_{GT} mA	V_{GT} V	I_H mA	1-99	100-999
MCR846-1	25	50	1.5	25	$ 5.15	$3.45
MCR846-2	50	50	1.5	25	5.75	3.85
MCR846-3	100	50	1.5	25	7.35	4.90
MCR846-4	200	50	1.5	25	14.60	9.75

300 A (PULSE)—CASE 63

t_{gt} = 0.15 μsec; dv/dt = 250 V/μsec.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C			Net Each, Lots of		
		I_{GT} mA	V_{GT} V	I_H mA	1-24	25-99	100-999
MCR1336-5	300	40	1.25	50	$20.60	$18.30	$13.75
MCR1336-6	400	40	1.25	50	28.85	25.60	19.25
MCR1336-7	500	40	1.25	50	33.75	29.90	22.50
MCR1336-8	600	40	1.25	50	44.55	39.50	29.70
MCR1336-9	700	40	1.25	50	52.85	46.90	35.25
MCR1336-10	800	40	1.25	50	66.75	59.20	44.50

1000 A (PULSE)—CASE 64

dv/dt = 100 V/μsec.

Motorola Type	V_{FOM} V_{ROM} V	At 25° C			Net Each, Lots of		
		I_{GT} mA	V_{GT} V	I_H mA	1-24	25-99	100-999
MCR1718-5	300	50	1.5	15*	$25.50	$22.60	$17.00
MCR1718-6	400	50	1.5	15*	30.00	26.60	20.00
MCR1718-7	500	50	1.5	15*	37.50	33.25	25.00
MCR1718-8	600	50	1.5	15*	45.00	39.90	30.00

*Typical.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

SEE PRECEDING PAGES FOR CASE ILLUSTRATIONS

MOTOROLA
Semiconductors

SCR AND TRIGGER DEVICES, ECONOMY TRANSISTORS

SPECIAL PURPOSE SCRs

LIGHT ACTIVATED

MLS100 Series on-state rms current = 0.25 A; MLS200 Series on-state rms current = 0.4 A. I_{TSM} = 5.0 A. At 25° C: I_{GT} = 0.1 mA; V_{GT} = 0.8 V; I_H = 2.0 mA.

V_{FOM} V_{ROM} V	CASE 29			CASE 82		
	Motorola Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999	Motorola Type	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
15	MLS101	Prices on Request		MLS201	Prices on Request	
30	MLS102			MLS202		
60	MLS103			MLS203		
100	MLS104			MLS204		
200	MLS105			MLS205		

CAPACITIVE DISCHARGE IGNITION SYSTEM (CASE 79)

On-state rms current = 7.0 A. I_{TSM} = 180 A. At 25° C: I_{GT} = 15 mA; V_{GT} = 1.25 V. dv/dt = 50 V/μsec min.

Motorola Type	V_{FOM} V_{ROM} V	Net Ea., Lots 1-99	Net Ea., Lots 100-999	Motorola Type	V_{FOM} V_{ROM} V	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MCR39-05	50	$1.79	$1.20	MCR39-40	400	$3.74	$2.50
MCR39-20	200	3.07	2.05	MCR39-50	500	4.35	2.90
MCR39-30	300	3.30	2.20	MCR39-60	600	5.00	3.35

TRIGGER DEVICES

Ideal SCR or triac complements. Plastic case except Case 22, metal.

SILICON BIDIRECTIONAL SWITCH—SBS

Motorola Type	Case	V_S VDC	Maximum I_S μADC	Maximum I_H mADC	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MBS4991	29	6.0–10	500	1.5	$0.68	$0.45
MBS4992	29	7.5–9	120	0.5	1.35	.90
2N4993	22	6.0–10	500	1.5	1.60	1.40
MBS100	29	3.0–5	400	1.0	.68	.45

SILICON UNIDIRECTIONAL SWITCH—SUS

V_F = 1.5 mA at I_F = 150 mA. P_D = 300 mW.

Motorola Type	Case	V_S V	I_S μA	I_H mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MUS4987	29	6.0–10	500	1.5	$0.65	$0.43
MUS4988	29	7.5–9	150	0.5	1.23	.82

BILATERAL TRIGGER DIACS (CASE 182)

Specifications given are for both directions.

Motorola Type	Nom. V_S V	Max. I_S μA	Min. ΔV V	Max. I_B μA	Net Each, Lots of 1-99	Net Each, Lots of 100-999
1N5758	20 ± 4.0	100	5.0	10	$0.53	$0.35
1N5758A	20 ± 2.0	25	5.0	10	.58	.39
1N5759	24 ± 4.0	100	5.0	10	.53	.35
1N5759A	24 ± 2.0	25	5.0	10	.58	.39
1N5760	28 ± 4.0	100	7.0	10	.53	.35
1N5760A	28 ± 2.0	25	7.0	10	.58	.39
1N5761	32 ± 4.0	100	7.0	10	.53	.35
1N5761A	32 ± 2.0	25	7.0	10	.58	.39
1N5762	36 ± 4.0	100	7.0	10	.53	.35
1N5762A	36 ± 2.0	25	7.0	10	.58	.39

FOUR LAYER DIODES (CASE 51)

I_{pulse} = 10 A max. at 50 μsec.

Motorola Type	V_S V	Max. I_S μA	I_H T_A = 25° C mA	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
1N5158	8–10	50	1.0–20	$3.75	$3.25	$2.50
1N5159	9–11	50	1.0–20	3.38	2.90	2.25
1N5160	10–12	50	1.0–20	3.75	3.25	2.50
1N5779	11–13	50	1.0–20	3.75	3.25	2.50
1N5780	12–14	50	1.0–20	3.75	3.25	2.50
1N5781	13–15	50	1.0–20	3.75	3.25	2.50
1N5782	8–10	100	10–50	3.75	3.25	2.50
1N5783	9–11	100	10–50	3.75	3.25	2.50
1N5784	10–12	100	10–50	3.75	3.25	2.50
1N5785	11–13	100	10–50	3.75	3.25	2.50
1N5786	12–14	100	10–50	3.75	3.25	2.50
1N5787	13–15	100	10–50	3.75	3.25	2.50
1N5788	8–10	100	0.1–2.0	3.75	3.25	2.50
1N5789	9–11	100	0.1–2.0	3.75	3.25	2.50
1N5790	10–12	100	0.1–2.0	3.75	3.25	2.50
1N5791	11–13	100	0.1–2.0	3.75	3.25	2.50
1N5792	12–14	100	0.1–2.0	3.75	3.25	2.50
1N5793	13–15	100	0.1–2.0	3.75	3.25	2.50

NPN-PNP PLASTIC ENCAPSULATED SMALL-SIGNAL SILICON TRANSISTORS (CASE 29)

Transistors are 100% performance tested on high-speed computer-controlled equipment. Devices are listed in order of decreasing breakdown voltage (BV_{CEO}), then in order of decreasing collector test current (I_C). P_D = 350 mW at T_A = 25° C. NPN except as otherwise noted.

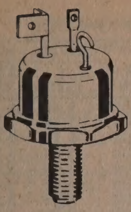
GENERAL-PURPOSE AMPLIFIERS

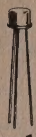
Motorola Type	BV_{CEO} V	h_{FE} at I_C Min.-Max.	h_{FE} at I_C mA	f_T at I_C MHz	f_T at I_C mA	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999	Net Ea., Lots of 1000-4999
MPS6590	80	40 min.	10	60	10	$0.67	$0.47	$0.37
MPSA06*	80	50 min.	10	50	100	.60	.40	.27
MPSA56*†	80	50 min.	10	50	100	.66	.44	.33
MPS4356†	80	50–250	10	100	50	.51	.34	.26
MPSH05	80	30–150	1.5	80	1.5	.32	.21	.19
MPSH55†	80	30–150	1.5	80	1.5	.38	.25	.20
MPSH04	80	30–120	1.5	80	1.5	.38	.24	.21
MPSH54†	80	30–120	1.5	80	1.5	.40	.27	.22
MPS4355†	60	100–400	10	100	50	.52	.35	.26
MPS4354†	60	50–500	10	100	50	.48	.32	.24
MPSA05*	60	50 min.	10	50	100	.53	.35	.26
MPSA55*†	60	50 min.	10	50	100	.59	.39	.29
MPS6591	50	40 min.	10	60	10	.60	.42	.33
2N5210	50	250 min.	1.0	30	0.5	.72	.48	.36
2N5087†	50	250 min.	1.0	40	0.5	.81	.54	.40
2N5209	50	150 min.	1.0	30	0.5	.66	.44	.33
2N5086†	50	150 min.	1.0	40	0.5	.75	.50	.38
MPSA09	50	100–600	0.1	30	0.5	.54	.36	.27
MPSH34*	45	15 min.	20	500	15	.65	.44	.36
MPS6575	45	200–500	10	200	10	.50	.35	.28
MPS6566	45	100–400	10	200	10	.57	.38	.28
MPS6565	45	40–160	10	200	10	.52	.35	.26
MPS6576	45	100–300	1	200	10	.49	.34	.27
2N4400	40	100–300	150	200	20	.60	.40	.30
2N4403†	40	100–300	150	200	20	.60	.40	.30
2N4401	40	50–150	150	250	20	.75	.50	.38
2N4402†	40	50–150	150	150	20	.75	.50	.38
MPS6531	40	90–270	100	390‡	50	.75	.50	.37
MPS6534†	40	90–270	100	260‡	50	.81	.54	.40
MPS6530	40	40–120	100	390‡	50	.64	.43	.30
MPS6533†	40	40–120	100	260‡	50	.71	.47	.35
2N3904	40	100–300	10	300	10	.55	.39	.29
2N3906†	40	100–300	10	250	10	.55	.39	.30
2N3903	40	50–150	10	250	10	.55	.39	.29
2N3905†	40	50–150	10	200	10	.55	.39	.30
MPSA70†	40	40–400	5	125	5	.38	.25	.19
MPSA16	40	200–600	5	100	5	.36	.24	.21
MPSA17	40	200–600	5	80	5	.36	.24	.21
MPSA20	40	40–400	5	125	5	.33	.22	.17
MPSH37	40	25 min.	5	300	5	.51	.34	.29
MPM5006	40	30 min.	4	400	4	.99	.66	.50
MPS6518†	40	150–300	2	340‡	2	.67	.45	.31
MPS6517†	40	90–180	2	200‡	2	.63	.42	.29
MPS6516†	40	50–100	2	200‡	2	.60	.40	.30
MPS6532	30	30 min.	100	390‡	50	.54	.36	.27
MPS6535†	30	30 min.	100	260‡	50	.60	.40	.30
MPSH24*	30	30 min.	8	400	8	.62	.41	.34
MPSH20	30	25 min.	4	400	4	.59	.39	.33
MPSH32*	30	27–200	4	300	4	.63	.42	.36
MPSH07	30	20 min.	3	400	3	.68	.46	.39
MPSH08	30	20 min.	3	500	3	.73	.51	.44
MPSH85†	30	200 min.	2.5	350	2.5	1.05	.70	.64
MPSH83*†	30	20 min.	2.5	600	2.5	1.15	.75	.68
MPS6513	30	90–180	2	250‡	2	.57	.38	.28
2N4123	30	50–150	2	250	10	.39	.27	.16
2N4125†	30	50–150	2	200	10	.40	.28	.17
MPS6512	30	50–100	2	250‡	2	.54	.36	.27
2N5088	30	350 min.	1	50	0.5	.75	.50	.30
MPS3638†	25	30 min.	50	100	50	.45	.30	.20
MPS-3638A†	25	100 min.	50	150	50	.59	.39	.35
MPS5172	25	100–500	10	120‡	2	.21	.14	.11
MPSH10	25	60 min.	4	650	4	.49	.33	.28
MPSH11	25	60 min.	4	650	4	.54	.36	.30
MPSH19	25	45 min.	4	300	4	.45	.31	.27
MPS6515	25	250–500	2	390‡	2	.64	.43	.28
MPS6519†	25	250–500	2	340‡	2	.75	.50	.33
MPS6514	25	150–300	2	390‡	2	.60	.40	.30
2N4124	25	120–360	2	300	10	.40	.28	.17
2N4126†	25	120–360	2	250	10	.41	.29	.18
2N5089	25	450 min.	1	50	0.5	.98	.65	.33
MPS6560*	20	50–200	500	60	10	.48	.32	.27
MPS6562†	20	50–200	500	60	10	.54	.36	.31
MPS6561*	20	50–200	350	60	10	.45	.30	.26
MPS6563†	20	50–200	350	60	10	.51	.34	.29
MPS6568	20	20–200	4	375	4	1.50	1.00	.75
MPS6568A	20	20–200	4	375	4	.70	.47	.40
MPSH02*	20	20–200	4	375	4	.76	.51	.44
MPSH30	20	20–200	4	300	4	.51	.34	.29
MPSH31	20	20–200	4	300	4	.51	.34	.29
MPSH81†	20	60 min.	......	600	5	.45	.30	.26
MPS3721	18	60–660§	2	......	......	.34	.23	.17

*P_D = 625 mW. †PNP. ‡Typical; all others are maximum. §h_{fe} at f = 1.0 kHz.

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

SEE PRECEDING PAGES
FOR CASE ILLUSTRATIONS


Case 177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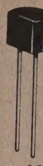
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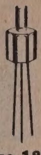
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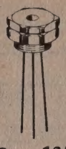
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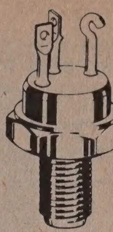
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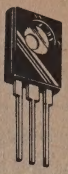

Case 199

NPN-PNP PLASTIC ENCAPSULATED SMALL-SIGNAL SILICON TRANSISTORS (CASE 29) CONT'D

Devices are listed in order of decreasing breakdown voltage (BV_{CEO}), then in order of decreasing collector test current (I_C). $P_D = 350$ mW at $T_A = 25°$ C. NPN except as otherwise noted.

GENERAL-PURPOSE SATURATED SWITCHING

May also be used as general-purpose amplifiers.

Motorola Type	BV_{CEO} V	h_{FE} at I_C		V_{CE} (sat) V	Min. f_T MHz	Max.		Net Ea., Lots	
		Min.	mA			t_{on} ns	t_{off} ns	1-99	100-999*
2N5845*	40	25	500	0.6	200	40	60	$0.75	$0.50
2N5845A*	40	35	500	0.5	250	30	50	.87	.58
2N4401	40	100	150	0.75	250	35	255	.75	.50
2N4403†	40	100	150	0.75	200	35	255	.75	.50
2N4400	40	50	150	0.75	200	35	255	.60	.40
2N4402†	40	50	150	0.75	150	35	255	.60	.40
2N6067†	40	50	100	0.3	150	40	80	.93	.62
2N3904	40	100	10	0.3	300	70	250	.55	.39
2N3906†	40	100	10	0.4	250	70	300	.55	.39
2N3903	40	50	10	0.3	250	70	225	.55	.39
2N3905†	40	50	10	0.4	200	70	260	.55	.39
MPS404A†	35	30	12	0.2	.....	265	385	.45	.30
2N4123	30	50	2	0.3	250	37‡	136‡	.39	.27
2N4125†	30	50	2	0.4	200	43‡	155‡	.40	.28
MPS3638†	25	30	50	2.0	100	90	210	.45	.30
MPS3638A†	25	100	50	1.0	150	90	210	.59	.39
2N4124	25	120	2	0.3	300	37‡	136‡	.40	.28
2N4126†	25	120	2	0.4	250	43‡	155‡	.41	.29
MPS404†	24	30	12	0.2	.....	265	385	.37	.25

HIGH-SPEED SATURATED SWITCHING

Motorola Type	BV_{CEO} V	h_{FE} Min.	I_C mA	V_{CE} (sat) V	Min. f_T MHz	t_{on} ns	t_{off} ns	1-99	100-999*
MPS834	30	25	10	0.25	350	16	30	$0.52	$0.35
MPS835	20	20	10	0.3	300	20	35	.60	.40
2N4264	15	40	30	0.35	300	23	35	.48	.32
MPS3646	15	30	30	0.5	350	25	35	.52	.34
MPS2369	15	40	10	0.25	.....	12	18	.53	.35
MPS706A	15	20	10	0.6	200	40	75	.63	.42
MPS3640†	12	30	10	0.2	500	40	32	.44	.29
2N4265	12	100	10	0.35	300	23	35	.54	.36
MPS3639†	6	30	10	0.16	500	40	32	.34	.23

*$P_D = 625$ mW. †PNP. ‡Typical.

DARLINGTON AMPLIFIERS

$P_D = 625$ mW.

Motorola Type	BV_{CES} V	h_{FE} at I_C		Min. f_T MHz	Net Each, Lots of		
		Min.	mA		1-99	100-999	1000-4999
MPSA13	30	5,000	10	125	$0.47	$0.32	$0.24
MPSA14	30	10,000	10	125	.54	.36	.24
MPSA65*	30	50,000	10	100	.57	.38	.29
MPSA66*	30	75,000	10	100	.63	.42	.32
MPSA12	20	20,000	10	....	.67	.45	.29

*PNP.

LOW-NOISE AMPLIFIERS

Motorola Type	BV_{CEO} V	h_{FE} at I_C		Max. NF dB	Min. f_T MHz	Net Each, Lots of		
		Min.	mA			1-99	100-999	1000-4999
2N5209	50	100	0.1	4.0	30	$0.66	$0.44	$0.33
2N5210	50	200	0.1	3.0	30	.72	.48	.36
MPSA09	50	100	0.1	1.4*	30	.54	.36	.27
2N5087†	50	250	0.1	2.0	40	.81	.54	.40
2N5086†	50	150	0.1	3.0	40	.75	.50	.38
MPSA18	45	800	1.0	1.5	100	.99	.67	.45
MPS6566	45	100	10	4.0*	100	.57	.38	.28
MPS6565	45	40	10	4.0*	40	.52	.35	.26
2N3904	40	40	0.1	5.0	300	.55	.39	.29
2N3903	40	20	0.1	6.0	300	.55	.39	.29
2N3906†	40	60	0.1	4.0	250	.55	.39	.30
2N3905†	40	30	0.1	5.0	200	.55	.39	.30
2N5088	30	300	0.1	3.0	50	.75	.50	.30
2N5089	25	400	0.1	2.0	50	.98	.65	.33
MPS6521	25	150	0.1	3.0	480*	.90	.60	.45
MPS6520	25	100	0.1	3.0	480*	.82	.55	.41
MPS6523†	25	150	0.1	3.0	420*	.97	.65	.49
MPS6522†	25	100	0.1	3.0	420*	.90	.60	.45
MPS6571	20	250	0.1	1.2*	50	.60	.40	.30
MPSA17	15	25	5.0	6.0	800	.36	.24	.21

*Typical. †PNP.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

HIGH-VOLTAGE

Motorola Type	BV_{CEO} V	h_{FE} at I_C		V_{CE} (sat) V	Min. f_T MHz	Net Each, Lots of		
		Min.	mA			1-99	100-999	1000-4999
MPSA42	300	40	10	0.5	50	$0.87	$0.58	$0.47
MPSA92*	300	40	10	0.5	50	.94	.63	.52
MPSA43	200	40	10	0.4	50	.76	.52	.43
MPSA93*	200	40	10	0.4	50	.87	.58	.47
2N5551	160	80	10	0.15	100	.84	.56	.50
2N5401*	150	60	10	0.2	150	.91	.61	.55
2N5550	140	60	10	0.15	100	.69	.46	.41
MPSL01	120	50	10	0.2	60	.59	.39	.35
2N5400*	120	40	10	0.2	100	.75	.50	.45
MPSL51*	100	40	50	0.25	60	.61	.42	.38
2N4410	80	60	1	0.2	60	.96	.64	.48
2N4409	50	60	1	0.2	60	.67	.45	.34

*PNP.

MEDIUM-POWER UNIWATT (CASE 152)

HIGH VOLTAGE AMPLIFIERS

Motorola Type	BV_{CEO} V	h_{FE} at I_C		V_{CE} (sat) V	Min. f_T MHz	P_D W	Net Ea., Lots	
		Min.	mA				1-99	100-999
MPSU10	300	40	10	0.75	60	1.0*	$1.44	$0.96
MPSU60†	300	30	10	0.75	60	10	1.65	1.10
MPSU04	180	40	10	0.5	100	5.0	1.50	1.00
MPSU03	120	40	10	0.5	100	5.0	1.35	.90
MPSU07	100	30	250	0.4	50	10	1.20	.80
MPSU57†	100	30	250	0.5	50	10	1.29	.86
GENERAL PURPOSE								
MPSU06	80	100	250	0.6	50	5.0	$1.05	$0.70
MPSU56†	80	100	250	0.6	50	5.0	1.14	.76
MPSU05	60	100	250	0.6	50	5.0	.90	.60
MPSU55†	60	100	250	0.6	50	5.0	.99	.66
MPSU02	40	50	150	0.4	150	6.0	.89	.59
MPSU52†	40	50	150	0.4	150	6.0	.98	.65
DARLINGTON								
MPSU45	40	25K	200	1.5	1000	10	$1.14	$0.76
MPSU95†	40	25K	200	1.5	50	10	1.26	.84
AUDIO								
MPSU01A	40	60	100	0.5	50	8.0	$0.93	$0.62
MPSU51A†	40	60	100	0.7	50	8.0	1.02	.68
MPSU01	30	60	100	0.5	50	8.0	.85	.57
MPSU51†	30	60	100	0.7	50	8.0	.90	.60

*Typical. †PNP.

GERMANIUM PNP POWER TRANSISTORS

DIFFUSED BASE (CASE 11)

Also available in Case 4 (TO-41); 2N5155 and 2N5435–2N5696 are alloy diffused epitaxial process.

Motorola Type	h_{FE} at I_C		V_{CEO} V	V_{CB} V	P_D W	f_T MHz	Net Each, Lots	
	Min.	A					1-99	100-999
2N2288	20	5.0	30	40	70	0.7	$ 2.65	$ 1.78
2N2289	20	5.0	50	80	70	0.7	4.00	2.65
2N2290	20	5.0	70	120	70	0.7	4.95	3.30
2N2291	50	5.0	30	40	70	0.7	2.75	1.85
2N2292	50	5.0	50	80	70	0.7	6.00	4.00
2N2293	50	5.0	70	120	70	0.7	9.85	6.57
2N2526	20	3.0	80	80	85	0.7	4.20	2.80
2N2527	20	3.0	120	120	85	0.7	4.65	3.10
2N2528*	20	3.0	160	160	85	0.7	11.80	7.90
2N2832	25	10	50	80	85	20	3.35	2.25
2N2833	25	10	75	120	85	20	4.85	3.25
2N2834	25	10	100	140	85	20	7.10	4.75
2N5155	25	8	120	90	106	0.4	7.85	5.25
2N5324	20	5	150	250	56	5.5	4.50	3.50
2N5325	20	5	200	325	56	5.5	6.00	5.00
2N5435	10	60	60	80	120	1.0	10.85	7.25
2N5436	10	60	90	110	120	1.0	15.35	10.25
2N5437	10	60	120	140	120	1.0	18.00	12.00
2N5438	15	60	60	80	120	1.0	14.60	9.75
2N5439	15	60	90	110	120	1.0	18.35	12.25
2N5440	15	60	120	140	120	1.0	22.50	15.00
2N5692	10	40	30	50	120	0.2	8.25	5.50
2N5693	10	40	60	80	120	0.2	9.75	6.50
2N5694	10	40	80	100	120	0.2	12.00	8.00
2N5695	10	40	100	120	120	0.2	14.25	9.50
2N5696	10	40	120	140	120	0.2	18.00	12.00

*JAN type available.

DIFFUSED BASE TRANSISTORS
CONTINUED ON FOLLOWING PAGE

GERMANIUM PNP POWER TRANSISTORS

DIFFUSED BASE, CASE 11 (CONTINUED)

Also available in Case 4 (TO-41); MP600–MP603 and MP2000A–MP2400A alloy diffused epitaxial process.

Motorola Type	h_{FE} at I_C		V_{CEO} V	V_{CB} V	P_D W	f_T MHz	Net Each, Lots	
	Min.	A					1-99	100-999
MP600	50	5	50	75	85	0.7	**$1.85**	**$1.25**
MP601	50	5	60	75	85	0.7	**2.25**	**1.50**
MP602	50	5	70	90	85	0.7	**3.00**	**2.00**
MP603	50	5	80	90	85	0.7	**3.65**	**2.45**
MP1612	25	10	50	100	85	20	**3.55**	**2.65**
MP1612A	25	10	75	140	85	20	**3.90**	**2.90**
MP1612B	25	10	100	160	85	20	**4.20**	**3.10**
MP2000A	25	8	30	60	106	0.4	**1.75**	**1.15**
MP2100A	25	8	60	80	106	0.4	**2.15**	**1.45**
MP2200A	25	8	80	100	106	0.4	**2.75**	**1.85**
MP2300A	25	8	100	120	106	0.4	**4.40**	**2.95**
MP2400A	25	8	120	140	106	0.4	**7.85**	**5.25**
MP3730	15	2.25	200*	....	56	1.0	**2.50**	**1.85**
MP3731	15	6.0	320*	....	56	1.0	**3.38**	**2.50**

*V_{CES}.

ALLOY POWER TRANSISTORS

Low cost devices featuring high current gain and low saturation voltage. Listed in order of I_C for optimized h_{FE}, then in numerical sequence. Types in Case 11 also available in Case 4; prices on request.

Motorola Type	Case	h_{FE} at I_C		V_{CES} Volts	P_D W	Net Ea., Lots	
		Min.-Max.	A			1-99	100-999
2N2137*	11	30–60	0.5	30	70	**$2.00**	**$1.40**
2N2138*	11	30–60	0.5	45	70	**2.10**	**1.40**
2N2139*	11	30–60	0.5	60	70	**2.25**	**1.50**
2N2140*	11	30–60	0.5	75	70	**3.90**	**2.60**
2N2141*	11	30–60	0.5	90	70	**7.85**	**5.25**
2N2142*	11	50–100	0.5	30	70	**2.50**	**1.75**
2N2143*	11	50–100	0.5	45	70	**2.75**	**1.90**
2N2144*	11	50–100	0.5	60	70	**4.00**	**2.75**
2N2145*	11	50–100	0.5	75	70	**4.75**	**3.20**
2N2146*	11	50–100	0.5	90	70	**8.60**	**5.75**
2N5887	80	15–350	0.5	20	57	**.73**	**.49**
2N5888	80	15–350	0.5	30	57	**.88**	**.59**
2N5889	80	30–70	0.5	30	57	**1.09**	**.73**
2N5890	80	30–70	0.5	45	57	**1.24**	**.83**
2N5891	80	30–70	0.5	60	57	**1.39**	**.93**
2N5892	80	30–70	0.5	75	57	**1.65**	**1.10**
2N5893	80	60–120	0.5	30	57	**1.18**	**.79**
2N5894	80	60–120	0.5	45	57	**1.33**	**.89**
2N5895	80	60–120	0.5	60	57	**1.48**	**.99**
2N5896	80	60–120	0.5	75	57	**1.80**	**1.20**
2N5897	80	100–200	0.5	30	57	**1.27**	**.85**
2N5898	80	100–200	0.5	45	57	**1.42**	**.95**
2N5899	80	100–200	0.5	60	57	**1.72**	**1.15**
2N5900	80	100–200	0.5	75	57	**1.87**	**1.25**
2N5901	80	175–350	0.5	30	57	**1.72**	**1.15**

***A** version available (2N2137**A**).

Motorola Type	Case	h_{FE} at I_C		V_{CEO} V	P_D W	Net Ea., Lots	
		Min.-Max.	A			1-99	100-999
2N1038	180	20–60	1.0	30	20	**$2.85**	**$1.90**
2N1039	180	20–60	1.0	40	20	**3.75**	**2.50**
2N1040	180	20–60	1.0	50	20	**5.70**	**3.80**
2N1041	180	20–60	1.0	60	20	**7.50**	**5.00**
2N2552	183	20–60	1.0	30	20	**2.30**	**2.05**
2N2553	183	20–60	1.0	40	20	**3.05**	**2.65**
2N2554	183	20–60	1.0	50	20	**4.75**	**3.95**
2N2555	183	20–60	1.0	60	20	**6.20**	**5.15**
2N2556	184	20–60	1.0	30	20	**2.60**	**2.15**
2N2557	184	20–60	1.0	40	20	**3.30**	**2.75**
2N2558	184	20–60	1.0	50	20	**4.80**	**4.00**
2N2559	184	20–60	1.0	60	20	**6.25**	**5.20**

Motorola Type	Case	h_{FE} at I_C		V_{CES} V	P_D W	Net Ea., Lots	
		Min.-Max.	A			1-99	100-999
2N1042	184	20–60	3.0	30*	20	**$3.60**	**$2.40**
2N1043	184	20–60	3.0	40*	20	**4.75**	**3.50**
2N1044	184	20–60	3.0	50*	20	**6.00**	**4.00**
2N1045	184	20–60	3.0	60*	20	**9.00**	**6.00**
2N1529	11	20–40	3.0	30	106	**1.80**	**1.20**
2N1531	11	20–40	3.0	60	106	**2.70**	**1.90**
2N1532	11	20–40	3.0	75	106	**3.50**	**2.60**
2N1533	11	20–40	3.0	90	106	**5.00**	**3.75**
2N1535	11	35–70	3.0	45	106	**1.50**	**1.14**
2N1536†	11	35–70	3.0	60	106	**1.70**	**1.25**
2N1537†	11	35–70	3.0	75	106	**3.90**	**2.90**
2N1538	11	35–70	3.0	90	106	**5.10**	**3.40**

*V_{CEO}. †**A** version available (2N1536**A**).

SEE PRECEDING PAGE FOR CASE ILLUSTRATIONS

ALLOY POWER TRANSISTORS (CONTINUED)

Motorola Type	Case	h_{FE} at I_C		V_{CES} Volts	P_D W	Net Ea., Lots	
		Min.-Max.	A			1-99	100-999
2N1539*	11	50–100	3.0	30	106	**$ 1.42**	**$1.05**
2N1540*	11	50–100	3.0	45	106	**1.58**	**1.18**
2N1541*	11	50–100	3.0	60	106	**1.85**	**1.38**
2N1542*	11	50–100	3.0	75	106	**2.35**	**1.75**
2N1543	11	50–100	3.0	90	106	**3.60**	**2.65**
2N1544*	11	75–150	3.0	30	106	**1.65**	**1.24**
2N1545*	11	75–150	3.0	45	106	**1.85**	**1.35**
2N1546*	11	75–150	3.0	60	106	**2.30**	**1.70**
2N1547*	11	75–150	3.0	75	106	**2.75**	**2.05**
2N1548	11	75–150	3.0	90	106	**6.00**	**4.00**
MP2060	11	30–200	3.0	30	85	**1.05**	**.75**
MP2062	11	30–200	3.0	60	85	**1.35**	**1.00**
MP2063	11	30–200	3.0	75	85	**1.65**	**1.25**
2N2560	183	20–60	3.0	30†	20	**2.50**	**2.10**
2N2561	183	20–60	3.0	40†	20	**3.25**	**2.70**
2N2562	183	20–60	3.0	50†	20	**4.80**	**4.00**
2N2563	183	20–60	3.0	60†	20	**6.25**	**5.20**
2N2564	180	20–60	3.0	30†	20	**2.60**	**2.15**
2N2565	180	20–60	3.0	40†	20	**3.30**	**2.75**
2N2566	180	20–60	3.0	50†	20	**4.85**	**4.05**
2N2567	180	20–60	3.0	60†	20	**6.30**	**5.25**
2N3611	11	35–70	3.0	30	85	**1.15**	**.78**
2N3612	11	35–70	3.0	45	85	**1.30**	**.88**
2N3613	11	60–120	3.0	30	85	**1.25**	**.85**
2N3614	11	60–120	3.0	45	85	**1.40**	**.94**
2N3615	11	30–60	3.0	60	85	**1.65**	**1.10**
2N3616	11	30–60	3.0	75	85	**2.10**	**1.39**
2N3617	11	45–90	3.0	60	85	**1.88**	**1.25**
2N3618	11	45–90	3.0	75	85	**2.37**	**1.58**
2N6064	8	20–50	3.0	80†	56	**4.20**	**2.80**
2N6065	8	20–50	3.0	120†	56	**4.65**	**3.10**
2N6066	8	20–50	3.0	160†	56	**7.25**	**4.85**
2N2075	5	20–40	5.0	80	170	**5.75**	**3.84**
2N2076	5	20–40	5.0	70	170	**3.60**	**2.67**
2N2077	5	20–40	5.0	50	170	**2.85**	**2.12**
2N2078	5	20–40	5.0	40	170	**2.08**	**1.90**
2N2079‡	5	35–70	5.0	80	170	**8.00**	**5.34**
2N2081	5	35–70	5.0	50	170	**3.50**	**2.32**
2N2082	5	35–70	5.0	40	170	**2.40**	**1.78**
2N2152*	5	50–100	5.0	45	170	**4.25**	**2.90**
2N2153*	5	50–100	5.0	60	170	**5.55**	**4.45**
2N2154*	5	50–100	5.0	75	170	**10.10**	**7.75**
2N2155	5	50–100	5.0	90	170	**15.35**	**11.25**
2N2156*	5	80–160	5.0	45	170	**4.10**	**3.30**
2N2157*	5	80–160	5.0	60	170	**6.35**	**5.10**
2N2158*	5	80–160	5.0	75	170	**10.85**	**8.25**
2N2159	5	80–160	5.0	90	170	**16.25**	**11.85**
2N1549§	11	10–30	10	30	106	**3.00**	**2.00**
2N1550§	11	10–30	10	45	106	**3.50**	**2.40**
2N1551§	11	10–30	10	60	106	**5.50**	**3.75**
2N1552§	11	10–30	10	75	106	**6.00**	**4.00**
2N1553	11	30–60	10	30	106	**1.85**	**1.35**
2N1554	11	30–60	10	45	106	**2.50**	**1.80**
2N1555	11	30–60	10	60	106	**3.00**	**2.25**
2N1556#	11	30–60	10	75	106	**4.50**	**3.10**
2N1557	11	50–100	10	30	106	**2.15**	**1.58**
2N1558	11	50–100	10	45	106	**2.80**	**2.06**
2N1559	11	50–100	10	60	106	**3.25**	**2.40**
2N1560•	11	50–100	10	75	106	**4.45**	**3.30**
MP500*	7	30–60	15	45	170	**5.70**	**3.80**
MP501*	7	30–60	15	60	170	**9.00**	**6.00**
MP502*	7	30–60	15	75	170	**12.00**	**8.00**
MP503	7	30–60	15	90	170	**20.25**	**13.50**
MP504*	7	50–100	15	45	170	**6.60**	**4.40**
MP505*	7	50–100	15	60	170	**10.20**	**6.80**
MP506*	7	50–100	15	75	170	**13.85**	**9.25**
MP507	7	50–100	15	90	170	**22.50**	**15.00**
2N1162	11	15–65	25	35	106	**4.45**	**3.30**
2N1163	4	15–65	25	35	106	**4.45**	**2.95**
2N1164	11	15–65	25	60	106	**6.35**	**4.70**
2N1165▲	4	15–65	25	60	106	**6.35**	**4.70**
2N1166	11	15–65	25	75	106	**7.35**	**4.90**
2N1167	4	15–65	25	75	106	**7.55**	**5.60**

***A** version available (2N1539**A**, MP500**A**). †V_{CEO}. ‡JAN2N2079A available. §2N1549**A**, JAN2N1549**A**–2N1552**A**, JAN2N1552**A** are available. #JAN2N1556A available. •JAN2N1560A available. ▲JAN type available.

ALLOY HIGH-CURRENT—HIGH GAIN SWITCH

Listed in order of I_C for optimized h_{FE}, then in numerical sequence.

Motorola Type	Case	h_{FE} at I_C		V_{CES} Volts	P_D W	Net Ea., Lots of	
		Min.	A			1-99	100-999
2N4048	7	15	60	45	170	**$ 5.60**	**$ 4.50**
2N4049	7	15	60	60	170	**7.50**	**6.00**
2N4050	7	15	60	75	170	**9.30**	**7.20**
2N4051	7	15	60	45	170	**6.45**	**5.15**
2N4052	7	15	60	60	170	**8.25**	**6.50**
2N4053	7	15	60	75	170	**10.10**	**7.75**
2N4276	3	15	60	30	170	**3.50**	**2.80**
2N4277	3	15	60	30	170	**4.20**	**3.35**
2N4278	3	15	60	45	170	**4.65**	**3.50**
2N4279	3	15	60	45	170	**5.30**	**4.25**
2N4280	3	15	60	60	170	**5.70**	**4.55**
2N4281	3	15	60	60	170	**6.80**	**5.45**
2N4282	3	15	60	75	170	**7.05**	**5.65**
2N4283	3	15	60	75	170	**8.45**	**6.65**
MP801*	118	15	150	60	250	**42.00**	**37.75**

*Power Pac assembly; epoxy encapsulated available.

SILICON POWER TRANSISTORS

COMPLEMENTARY POWER TRANSISTORS

This list represents the large number of "off-the-shelf" complementary silicon power transistors available. For convenience in choosing complements, a selection can be made on the basis of maximum collector current, case, and voltage. I_C ratings are maximum.

I_C A	Case	BV_{CE} V	Motorola Type NPN	Motorola Type PNP
1.0	31	100	2N5681	2N5679
		120	2N5682	2N5680
1.5	77	40	MJE720	MJE710
		60	MJE721	MJE711
		80	MJE722	MJE712
3.0	31	40	2N4237	2N4234
		60	2N4238	2N4235
		80	2N4239	2N4236
	77	40	2N4921	2N4918
		60	2N4922	2N4919
		80	2N4923	2N4920
		40	MJE180	MJE170
		60	MJE181	MJE171
		80	MJE182	MJE172
		30	MJE520	MJE370
		30	MJE3520	MJE3370
	199	30	MJE-520K	MJE-370K
		40	MJE2520	MJE2370
		60	MJE2521	MJE2371
		40	MJE2522	MJE2490
		60	MJE2523	MJE2491
		40	MJE4921	MJE4918
		60	MJE4922	MJE4919
		80	MJE4923	MJE4920
4.0	80	55	2N3054A	2N6049
		60	2N3766	2N3740
		80	2N3767	2N3741
		40	2N4910	2N4898
		60	2N4911	2N4899
		80	2N4912	2N4900
	77	40	2N5190	2N5193
		60	2N5191	2N5194
		80	2N5192	2N5195
		40	2N6037	2N6034
		60	2N6038	2N6035
		80	2N6039	2N6036
		40	MJE521	MJE731
		40	MJE3521	MJE3371
		60	MJE800	MJE700
		60	MJE801	MJE701
		80	MJE802	MJE702
		80	MJE803	MJE703
		40	MJE220	MJE230
		40	MJE221	MJE231
		40	MJE222	MJE232
		60	MJE223	MJE233
		60	MJE224	MJE234
		60	MJE225	MJE235
		80	MJE240	MJE250
		80	MJE241	MJE251
		80	MJE242	MJE252
		100	MJE243	MJE253
		100	MJE244	MJE254
	11	40	MJ480	MJ490
		60	MJ481	MJ491
		60	MJ4000	MJ4010
		80	MJ4001	MJ4011
	253	60	MJ4200	MJ4210
		80	MJ4201	MJ4211
	199	40	MJE-521K	MJE-371K
		40	MJE5190	MJE5193
		60	MJE5191	MJE5194
		80	MJE5192	MJE5195
5.0	90	50	MJE205	MJE105
		60	MJE1100	MJE1090
		60	MJE1101	MJE1091
		80	MJE1102	MJE1092
		80	MJE1103	MJE1093
		40	2N5977	2N5974
		60	2N5978	2N5975
		80	2N5979	2N5976
	11	40	2N5067	2N4901
		60	2N5068	2N4902
		80	2N5069	2N4903
		40	2N4913	2N4904
		60	2N4914	2N4905
		80	2N4915	2N4906
		60	2N5869	2N5867
		80	2N5870	2N5868
	79	80	2N5336	2N6190
		80	2N5337	2N6191
		100	2N5338	2N6192
		100	2N5339	2N6193

I_C A	Case	BV_{CEO} V	Motorola Type NPN	Motorola Type PNP
5.0	77	25	MJE200	MJE210
	199	40	MJE5977	MJE5974
		60	MJE5978	MJE5975
		80	MJE5979	MJE5976
		40	MJE2020	MJE2010
		60	MJE2021	MJE2011
6.0	11	100	2N5758	2N6226
		120	2N5759	2N6227
		140	2N5760	2N6228
7.0	11	60	2N5873	2N5871
		80	2N5874	2N5872
	80	60	2N6315	2N6317
		80	2N6316	2N6318
8.0	11	60	MJ1000	MJ900
		80	MJ1001	MJ901
		60	2N6055	2N6053
		80	2N6056	2N6054
	80	60	2N6300	2N6298
		80	2N6301	2N6299
	90	60	MJE6043	MJE6040
		80	MJE6044	MJE6041
		100	MJE6045	MJE6042
	199	60	2N6043	2N6040
		80	2N6044	2N6041
		100	2N6045	2N6042
10	90	60	MJE2801	MJE2901
		60	MJE3055	MJE2955
	199	60	MJE-2801K	MJE-2901K
		60	3055K	2955K
	11	60	2N3713	2N3789
		80	2N3714	2N3790
		60	2N3715	2N3791
		80	2N3716	2N3792
		60	2N3055	2N4908
		60	MJ2840	MJ2940
		80	MJ2841	MJ2941
		60	2N5877	2N5875
		80	2N5878	2N5876
		60	MJ3000	MJ2500
		80	MJ3001	MJ2501
		100	2N5632	2N6229
		120	2N5633	2N6230
		140	2N5634	2N6231
	160	80	2N5477	2N6182
		80	2N5478	2N6183
		100	2N5479	2N6184
		100	2N5480	2N6185
		80	2N5346	2N6186
		80	2N5347	2N6187
		100	2N5348	2N6188
		100	2N5349	2N6189
12	90	40	2N5989	2N5986
		60	2N5990	2N5987
		80	2N5991	2N5988
	11	60	2N6057	2N6050
		80	2N6058	2N6051
		100	2N6059	2N6052
15	90	40	MJE1660	MJE1290
		60	MJE1661	MJE1291
	11	40	MJ2801	MJ2901
		60	2N5881	2N5879
		80	2N5882	2N5880
		60	2N3055	MJ2955
16	11	60	MJ4033	MJ4030
		80	MJ4034	MJ4031
		100	MJ4035	MJ4032
		100	2N5629	2N6029
		120	2N5630	2N6030
		140	2N5631	2N6031
20	11	80	2N5303	2N5745
		60	2N6282	2N6285
		80	2N6283	2N6286
		100	2N6284	2N6287
25	11	60	2N5885	2N5883
		80	2N5886	2N5884
30	11	40	2N5301	2N4398
		60	2N5302	2N4399
		90	MJ802	MJ4502
50	11	60	2N5685	2N5683
		80	2N5686	2N5684

**SEE ANOTHER PAGE FOR
ADDITIONAL CASE ILLUSTRATIONS**

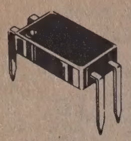
NPN POWER TRANSISTORS—METAL CASE

Types are listed in order of collector current for optimized h_{FE}. then in numerical sequence.

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Ea., Lots	
		Min.-Max.	A				1-99	100-999
2N3439	31	40–160	0.02	350	10	15	$ 1.12	$0.86
2N3440	31	40–160	0.02	250	10	15	.85	.65
MJ420	31	25–250	0.03	250	0.8	15	1.39	1.03
MJ421	31	25–250	0.03	325	0.8	15	1.63	1.21
MJ400	80	30–300	0.05	325	6.67	15	1.65	1.10
MJ2251	80	25–200	0.05	225	10	10	1.87	1.25
MJ2252	80	25–200	0.05	300	10	10	2.02	1.35
MJ3201	80	30–200	0.05	225	15	15	1.72	1.15
MJ3202	80	30–200	0.05	300	15	15	1.87	1.25
2N3738	80	50–200	0.1	225	15	10	1.54	1.14
MJ3026	11	25 min.	0.25	275	80	.....	2.30	1.70
MJ3027	11	25 min.	0.25	300	80	.....	2.56	1.90
2N4237	31	30–150	0.25	40	6.0	1.0	1.50	1.00
2N4238	31	30–150	0.25	60	6.0	1.0	1.75	1.17
2N4239	31	30–150	0.25	80	6.0	1.0	2.05	1.37
2N5681	31	40–150	0.25	100	10	30	1.45	1.07
2N5682	31	40–150	0.25	120	10	30	1.69	1.25
MJ3028	11	25 min.	0.3	300	100	.....	2.84	2.10
MJ1800	11	40–120	0.4	250	100	.....	3.54	2.35
MJ3029	11	30 min.	0.4	250	125	.....	2.56	1.90
MJ413	11	20–80	0.5	325	125	.....	3.70	2.85
MJ2249	80	25–200	0.5	60	20	15	1.49	1.10
MJ2250	80	25–200	0.5	80	20	15	1.65	1.25
2N3054A	80	25–100	0.5	55	75	3.0	1.25	.82
MJ3101	80	25–200	0.5	40	20	15	1.30	.95
2N3441	80	20–80	0.5	140	25	0.2	2.35	1.80
2N3766	80	40–160	0.5	60	20	10	1.62	1.20
2N3767	80	40–160	0.5	80	20	10	1.83	1.35
2N3788	11	20–180	0.5	325	100	.....	7.15	5.50
2N4910	80	20–100	0.5	40	25	3.0	1.30	.95
2N4911	80	20–200	0.5	60	25	3.0	1.49	1.10
2N4912	80	20–100	0.5	80	25	3.0	1.75	1.30
2N5050	80	25–100	0.75	125	40	10	2.50	1.70
2N5051	80	25–100	0.75	150	40	10	3.75	2.50
2N5052	80	25–100	0.75	200	40	10	4.85	3.25
MJ410	11	30–90	1.0	200	100	2.5	2.85	2.12
MJ411	11	30–90	1.0	300	100	2.5	3.40	2.50
MJ423	11	30–90	1.0	325	125	2.5	5.55	4.27
MJ424	11	30–90	1.0	350	100	2.5	6.66	5.12
MJ425	11	30–90	1.0	400	100	2.5	7.96	6.12
MJ480	11	30–200	1.0	40	87.5	4.0	1.30	.95
MJ481	11	30–200	1.0	60	87.5	4.0	1.55	1.15
2N3902 §	11	30–90	1.0	400	100	2.8	6.75	5.00
2N5067	11	20–180	1.0	40	87.5	4.0	1.49	1.10
2N5068	11	20–80	1.0	60	87.5	4.0	1.69	1.25
2N5069	11	20–80	1.0	80	87.5	4.0	1.96	1.45
2N5157	11	30–90	1.0	500	100	2.8	10.40	8.00
2N5334	79	30–150	1.0	60	6.0	40	3.25	2.50
2N5335	79	30–150	1.0	80	6.0	40	3.80	2.92
2N6233	80	25–125	1.0	225	50	20	3.84	2.95
2N6234	80	25–125	1.0	275	50	20	4.35	3.35
2N6235	80	25–125	1.0	325	50	20	5.00	3.85
MJ4000	11	1000‡	1.5	60	75	.....	1.75	1.35
MJ4001	11	1000‡	1.5	80	75	.....	2.10	1.80
2N4231 #	80	25–150	1.5	40	35	4.0	1.63	1.25
2N4232 #	80	25–150	1.5	60	35	4.0	1.82	1.40
2N4233 #	80	25–150	1.5	80	35	4.0	2.21	1.70
2N5869	11	20–100	1.5	60	87.5	4.0	1.02	.78
2N5870	11	20–100	1.5	80	87.5	4.0	1.33	1.02
2N1724 #	9•	20–90	2.0	80	115	10	27.75	18.50
2N1725	9•	50–150	2.0	80	115	10	30.00	20.00
MJ4200	253	750‡	2.0	60	50	4.0	4.72	3.50
MJ4201	253	750‡	2.0	80	50	4.0	5.80	4.30
2N5336	79	30–120	2.0	80	6.0	30	5.67	4.20
2N5337	79	60–240	2.0	80	6.0	30	7.21	5.35
2N5338	79	30–120	2.0	100	6.0	30	8.00	5.92
2N5339	79	60–240	2.0	100	6.0	30	9.55	7.07
2N5346	160*	30–120	2.0	80	60	30	25.75	19.80
2N5347	160*	60–240	2.0	80	60	30	30.15	23.25
2N5348	160*	30–120	2.0	100	60	30	28.60	22.00
2N5349	160*	60–240	2.0	100	60	30	34.80	26.80
2N5427	80	30–120	2.0	80	40	30	5.96	4.42
2N5428	80	60–240	2.0	80	40	30	7.53	5.57
2N5429	80	30–120	2.0	100	40	30	8.30	6.15
2N5430	80	60–240	2.0	100	40	30	9.75	7.23
2N5477	160†	30–120	2.0	80	60	30	23.40	18.00
2N5478	160†	60–240	2.0	80	60	30	27.90	21.45
2N5479	160†	30–120	2.0	100	60	30	26.20	20.15
2N5480	160†	60–240	2.0	100	60	30	32.40	24.90
2N5304	9•	30–120	2.0	40	25	100	162.50	125.00
2N6294	80	750‡	2.0	60	50	4.0	1.75	1.30
2N6295	80	750‡	2.0	80	50	4.0	2.24	1.65
MJ431	11	15–35	2.5	325	125	2.5	10.11	7.78
MJ3040	11	100‡	2.5	300	100	.....	5.10	3.90
MJ3041	11	250‡	2.5	300	100	.....	6.45	4.95
MJ3042	11	250‡	2.5	350	100	.....	7.95	6.10
MJ3430	11	15–45	2.5	300	125	2.5	7.75	5.73
2N4913	11	25–100	2.5	40	87.5	4.0	1.73	1.28
2N4914	11	25–100	2.5	60	87.5	4.0	2.12	1.57
2N4915	11	25–100	2.5	80	87.5	4.0	2.89	2.14
2N5241	11	15–35	2.5	400	125	2.5	16.25	12.50
2N5873	11	20–100	2.5	60	100	4.0	1.20	.92
2N5874	11	20–100	2.5	80	100	4.0	1.56	1.20

*Isolated collector, TO-59. †Collector common to case, TO-59. ‡Min. §JAN and JANTX types available. #A version available. •TO-61.

NPN POWER TRANSISTORS CONT'D ON NEXT PAGE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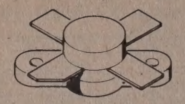
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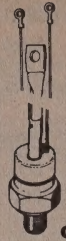
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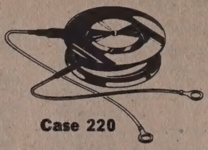
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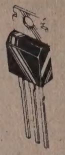
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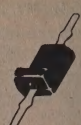
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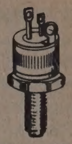

Case 235

SILICON POWER TRANSISTORS

NPN POWER TRANSISTORS—METAL CASE (CONTINUED)

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Ea., Lots	
		Min.-Max.	A				1-99	100-999
2N6315	80	20–100	2.5	60	90	4.0	$ 1.13	$ .87
2N6316	80	20–100	2.5	80	90	4.0	1.50	1.15
MJ1000	11	1000†	3.0	60	90	.....	2.12	1.57
MJ1001	11	1000†	3.0	80	90	.....	2.89	2.14
MJ2840	11	20–100	3.0	60	150	2.0	1.69	1.25
MJ3030	11	3.75†	3.0	325	125	.....	3.91	2.90
2N3232	11	15–75	3.0	60	115	1.0	1.62	1.20
2N3442	11	20–70	3.0	120	117	.....	2.73	2.10
2N3445	11	20–60	3.0	60	115	10	9.00	6.00
2N3446	11	20–60	3.0	80	115	10	13.50	9.00
2N3487	9‡	20–60	3.0	80	115	10	42.00	28.00
2N3488	9‡	20–60	3.0	100	115	10	57.00	38.00
2N3489	9‡	15–45	3.0	120	115	10	69.00	46.00
2N3713	11	15 min.	3.0	60	150	2.5	2.89	2.14
2N3714	11	15 min.	3.0	80	150	2.5	3.08	2.28
2N3715*	11	30 min.	3.0	60	150	2.5	3.38	2.50
2N3716*	11	30 min.	3.0	80	150	2.5	3.95	2.92
2N5758	11	25–100	3.0	100	150	1.0	3.47	2.67
2N5759	11	20–80	3.0	120	150	1.0	4.08	3.14
2N5760	11	15–60	3.0	140	150	1.0	5.10	3.92
2N6253	11	20–70	3.0	45	115	.....	.99	.72
2N6306	11	15–75	3.0	250	125	5.0	4.45	3.28
2N6307	11	15–75	3.0	300	125	5.0	5.00	3.70
2N6308	11	12–60	3.0	350	125	50	6.50	4.80
MJ1200	253	750†	4.0	60	160	4.0	6.60	4.90
MJ1201	253	750†	4.0	80	160	4.0	7.83	5.80
MJ2841	11	20–100	4.0	80	150	2.0	2.02	1.50
2N3055*	11	20–70	4.0	60	115	1.0	1.42	1.05
2N3235	11	20–70	4.0	55	115	1.0	1.75	1.30
MJ3520	11	500†	4.0	40	150	.....	3.64	2.80
MJ3521	11	500†	4.0	80	150	.....	5.33	4.10
2N4877	79	20–100	4.0	60	10	4.0	3.75	2.50
2N5633	11	20–80	4.0	120	150	1.0	4.90	3.77
2N5877	11	20–100	4.0	60	150	4.0	1.37	1.05
2N5878	11	20–100	4.0	80	150	4.0	1.77	1.36
2N6055	11	750†	4.0	60	100	4.0	2.32	1.72
2N6056	11	750†	4.0	80	100	4.0	2.80	2.07
2N6300	80	750†	4.0	60	75	4.0	2.25	1.67
2N6301	80	750†	4.0	80	75	4.0	2.73	2.02
2N6355	11	500†	4.0	40	150	.....	4.28	3.30
2N6356	11	1500†	4.0	40	150	.....	4.95	3.80
2N6357	11	500†	4.0	60	150	.....	4.81	3.70
2N6358	11	1500†	4.0	60	150	.....	5.46	4.20
MJ3000	11	1000†	5.0	60	150	.....	3.24	2.40
MJ3001	11	1000†	5.0	80	150	.....	3.82	2.85
2N3447	11	40–120	5.0	60	115	10	14.40	9.60
2N3448	11	40–120	5.0	80	115	10	18.00	12.00
2N3490	9‡	40–120	5.0	80	115	10	48.00	32.00
2N3491	9‡	40–120	5.0	100	115	10	63.00	42.00
2N3492	9‡	30–90	5.0	120	115	10	75.00	50.00
2N4348	11	15–60	5.0	120	120	0.2	3.14	2.28
2N5632	11	25–100	5.0	100	150	1.0	4.29	3.30
2N5634	11	15–60	5.0	140	150	1.0	5.81	4.55
2N6254	11	20–70	5.0	80	150	.....	1.57	1.14
2N5881	11	20–100	6.0	60	160	4.0	2.14	1.65
2N5882	11	20–100	6.0	80	160	4.0	2.57	2.14
2N6057	11	750†	6.0	60	150	4.0	3.43	2.54
2N6058	11	750†	6.0	80	150	4.0	4.03	2.99
2N6059	11	750†	6.0	100	150	4.0	4.78	3.54
2N6360	11	15–60	6.0	100	150	200K	3.14	2.28
MJ802	12	25–100	7.5	90	200	.....	4.86	3.60
MJ2801	11	15–60	8.0	40	115	1.0	2.85	1.90
2N3773	11	15–60	8.0	140	150	0.8	4.79	3.48
2N5629	11	25–100	8.0	100	200	1.0	5.10	3.92
2N5630	11	20–80	8.0	120	200	1.0	5.72	4.40
2N5631	11	15–60	8.0	140	200	1.0	6.74	5.18
2N6257	11	15–75	8.0	40	150	0.2	2.48	1.80
MJ6257	11	15–75	8.0	40	200	40	2.48	1.80
2N6302	11	15–60	8.0	120	150	0.2	4.24	3.08
MJ6302	11	15–60	8.0	120	200	1.0	4.24	3.08
2N6359	11	15–60	8.0	80	150	200K	3.14	2.28
2N3772	11	15–60	10	60	150	0.2	3.14	2.28
MJ3772	11	15–60	10	60	150	2.0	3.14	2.28
MJ4033	11	1000†	10	60	150	.....	5.40	4.15
MJ4034	11	1000†	10	80	150	.....	5.90	4.55
MJ4035	11	1000†	10	100	150	.....	6.65	5.10
2N5303*	12	15–60	10	80	200	2.0	9.75	7.50
2N5885	11	20–100	10	60	200	4.0	2.80	2.15
2N5886	11	20–100	10	80	200	4.0	3.64	2.80
2N6282	11	750†	10	60	160	4.0	5.80	4.30
2N6283	11	750†	10	80	160	4.0	6.28	4.65
2N6284	11	750†	10	100	160	4.0	7.00	5.20

*JAN and JANTX types available. †Minimum. ‡TO-61.

P_D = 250 W except as otherwise noted.

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} V	Min. f_T MHz	Net Each, Lots of		
		Min.	A			1-24	25-99	100-999
2N6338*	11	30	10	100	40	$10.00	$10.00	$ 7.80
2N6339*	11	30	10	120	40	11.00	11.00	8.45
2N6340*	11	30	10	140	40	12.40	12.40	9.55
2N6341*	11	30	10	150	40	14.90	14.90	11.50
MJ7000†	188#	20	10	100	30	74.00	74.00	49.50
2N3771†	11	15	15	40	0.2	3.14	3.14	2.28
MJ3771†	11	15	15	40	2.0	3.14	3.14	2.28
2N5301*	12	16	15	40	2.0	5.55	5.55	4.10
2N5302*‡	12	15	15	60	2.0	6.63	6.63	5.10
2N6274	197	30	20	100	30	22.40	22.40	17.20
2N6275	197	30	20	120	30	24.00	24.00	18.50
2N6276	197	30	20	140	30	27.30	27.30	21.00
2N6277	197	30	20	150	30	32.20	32.20	24.95
2N6278	188#	30	20	100	30	82.40	65.80	54.90
2N6279	188#	30	20	120	30	88.50	71.00	59.00
2N6280	188#	30	20	140	30	98.80	79.00	65.88
2N6281	188#	30	20	150	30	112.50	89.90	74.95
MJ7200§	177•	20	20	80	20	135.00	135.00	90.00
MJ7201§	177•	20	20	100	20	145.00	145.00	97.00
2N5685§	197	15	25	60	2.0	12.22	12.22	9.40
2N5686§	197	15	25	80	2.0	15.15	15.15	11.65

*P_D = 200 W. †P_D = 150 W. ‡JAN and JANTX types available. §P_D = 300 W. #TO-63, •TO-114.

PNP POWER TRANSISTORS—METAL CASE

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Ea., Lots	
		Min.-Max.	A				1-99	100-999
MJ2253	80	20–100	0.25	60	25	3.0	$ 1.93	$ 1.43
MJ2254	80	20–100	0.25	60	25	3.0	2.16	1.60
MJ3701	80	20–100	0.25	40	25	3.0	1.63	1.21
2N3740†	80	30–100	0.25	60	25	4.0	1.93	1.43
2N3741†	80	30–100	0.25	60	25	4.0	2.16	1.60
2N4234	31*	30–150	0.25	40	6.0	3.0	1.90	1.26
2N4235	31*	30–150	0.25	60	6.0	3.0	2.50	1.66
2N4236	31*	30–150	0.25	80	6.0	3.0	2.80	1.86
2N5679	31*	40–150	0.25	100	10	30	1.69	1.25
2N5680	31*	40–150	0.25	120	10	30	1.96	1.45
MJ4645	79	20 min.	0.5	200	5.0	40	3.73	2.87
MJ4646	79	20 min.	0.5	300	5.0	40	4.34	3.34
MJ4647	79	20 min.	0.5	400	5.0	30	11.57	8.90
MJ4648	79	20 min.	0.5	350	5.0	30	6.94	5.34
2N4898	80	20–100	0.5	40	25	3.0	1.63	1.21
2N4899	80	20–100	0.5	60	25	3.0	2.02	1.50
2N4900	80	20–100	0.5	60	25	3.0	2.26	1.67
2N5344	80	25–100	0.5	250	40	60	7.80	6.00
2N5345	80	25–100	0.5	300	40	60	9.75	7.50
2N6049	80	25–100	0.5	55	75	3.0	1.25	.82
MJ490	11	30–200	1.0	40	87.5	4.0	2.02	1.50
MJ491	11	30–200	1.0	60	87.5	4.0	2.40	1.78
2N3021	1	20–60	1.0	30	25	60	21.75	14.50
2N3022	1	20–60	1.0	45	25	60	30.00	20.00
2N3023	1	20–60	1.0	60	25	60	45.00	30.00
2N3024	1	50–180	1.0	30	25	60	30.00	20.00
2N3025	1	50–180	1.0	45	25	60	43.50	29.00
2N3026	1	50–180	1.0	60	25	60	49.50	33.00
2N3719	31*	25–180	1.0	40	6.0	60	8.45	6.50
2N3720	31*	25–180	1.0	60	6.0	60	9.40	7.25
2N4901	11	20–80	1.0	40	87.5	4.0	1.93	1.43
2N4902	11	20–80	1.0	60	87.5	4.0	2.80	2.07
2N4903	11	20–80	1.0	80	87.5	4.0	3.38	2.50
2N3867§	31	40–200	1.5	40	6.0	60	8.85	6.90
2N3868§	31	30–150	1.5	60	6.0	60	9.95	7.65
MJ4010	11	1000‡	1.5	60	75	.....	2.40	1.85
MJ4011	11	1000‡	1.5	80	75	.....	3.00	2.30
2N5867	11	20–100	1.5	60	87.5	4.0	1.17	.90
2N5868	11	20–100	1.5	80	87.5	4.0	1.52	1.17
2N6303	31	30–150	1.5	80	6.0	60	11.30	8.70
MJ500	160#	25–180	2.0	60	60	30	22.20	17.10
MJ501	160#	25–180	2.0	80	60	30	24.60	18.90

*Solid header. †**A** version, JAN and JANTX types available. ‡Minimum. §JAN and JANTX types available. #Collector common to case, TO-59

PNP POWER TRANSISTORS CONT'D ON NEXT PAGE

SEE ANOTHER PAGE FOR ADDITIONAL CASE ILLUSTRATIONS

SILICON POWER TRANSISTORS

Listed in order of I_C for optimized h_{FE}, then in numerical sequence.

PNP POWER TRANSISTORS—METAL CASE (CONT'D)

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Ea., Lots	
		Min.-Max.	A				1-99	100-999
MJ4210	253	750‡	2.0	60	50	4.0	$ 5.26	$ 3.90
MJ4211	253	750‡	2.0	80	50	4.0	6.48	4.80
2N6182	160*	30–120	2.0	80	60	30	28.10	21.60
2N6183	160*	60–240	2.0	80	60	30	33.40	25.65
2N6184	160*	30–120	2.0	100	60	30	31.70	24.40
2N6185	160*	60–240	2.0	100	60	30	38.85	29.80
2N6186	160†	30–120	2.0	80	60	30	31.10	23.95
2N6187	160†	60–240	2.0	80	60	30	36.20	27.90
2N6188	160†	30–120	2.0	100	60	30	34.30	26.40
2N6189	160†	60–240	2.0	100	60	30	41.80	32.20
2N6190	79	30–120	2.0	80	10	30	6.55	5.04
2N6191	79	60–240	2.0	80	10	30	8.35	6.42
2N6192	79	30–120	2.0	100	10	30	9.24	7.10
2N6193	79	60–240	2.0	100	10	30	11.10	8.50
2N6296	80	750‡	2.0	60	50	4.0	2.43	1.80
2N6297	80	750‡	2.0	80	50	4.0	3.04	2.25
MJ6700	160†	25–180	2.0	60	60	30	26.60	20.50
MJ6701	160†	25–180	2.0	80	60	30	29.60	22.75
MJ8100	79	25–180	2.0	60	10	30	5.18	3.98
MJ8101	79	25–180	2.0	80	10	30	6.20	4.75
2N4904	11	25–100	2.5	40	87.5	4.0	2.31	1.71
2N4905	11	25–100	2.5	60	87.5	4.0	3.08	2.28
2N4906	11	25–100	2.5	80	87.5	4.0	3.85	2.85
2N5871	11	20–100	2.5	60	100	4.0	1.37	1.05
2N5872	11	20–100	2.5	80	100	4.0	1.80	1.38
2N6317	80	20–100	2.5	60	90	4.0	1.30	1.00
2N6318	80	20–100	2.5	60	90	4.0	1.73	1.33
MJ900	11	1000‡	3.0	60	90	.....	3.08	2.28
MJ901	11	1000‡	3.0	80	90	.....	3.66	2.71
MJ2940	11	20–100	3.0	60	150	4.0	3.48	2.58
2N3789	11	15 min.	3.0	60	150	4.0	4.32	3.20
2N3790	11	15 min.	3.0	80	150	4.0	5.20	3.85
2N3791§	11	30 min.	3.0	60	150	4.0	4.64	3.43
2N3792§	11	30 min.	3.0	80	150	4.0	5.78	4.28
2N6226	11	25–100	3.0	100	150	1.0	4.00	3.07
2N6227	11	20–80	3.0	120	150	1.0	4.70	3.61
2N6228	11	15–60	3.0	140	150	1.0	5.86	4.51
MJ920	253	750‡	4.0	60	160	4.0	7.85	5.90
MJ921	253	750‡	4.0	80	160	4.0	9.18	6.80
MJ2267	11	20–100	4.0	40	150	3.0	4.95	3.30
MJ2268	11	20–100	4.0	55	150	3.0	5.45	3.65
MJ2941	11	20–100	4.0	80	150	4.0	4.20	3.10
MJ2955	11	20–70	4.0	60	150	4.0	1.42	1.05
2N5875	11	20–100	4.0	60	150	4.0	1.57	1.21
2N5876	11	20–100	4.0	80	150	4.0	2.04	1.57
2N6053	11	750‡	4.0	60	100	4.0	3.28	2.43
2N6054	11	750‡	4.0	80	100	4.0	3.89	2.88
2N6298	80	750‡	4.0	60	75	4.0	3.22	2.38
2N6299	80	750‡	4.0	80	75	4.0	3.82	2.83
MJ2500	11	1000‡	5.0	60	150	.....	4.05	3.00
MJ2501	11	1000‡	5.0	80	150	.....	4.58	3.40
2N6229	11	25–100	5.0	100	150	1.0	4.95	3.80
2N6230	11	20–80	5.0	120	150	1.0	5.64	4.33
2N6231	11	15–60	5.0	140	150	1.0	6.80	5.24
2N5879	11	20–100	6.0	60	160	4.0	2.54	1.95
2N5880	11	20–100	6.0	80	160	4.0	3.30	2.54
2N6050	11	750‡	6.0	60	150	4.0	4.38	3.25
2N6051	11	750‡	6.0	80	150	4.0	5.00	3.71
2N6052	11	750‡	6.0	100	150	4.0	5.90	4.36
MJ4502	12	25–100	7.5	90	200	.....	5.26	3.90
MJ2901	11	15–60	8.0	40	115	1.0	3.75	2.50
2N6029	11	25–100	8.0	100	200	1.0	5.86	4.51
2N6030	11	20–80	8.0	120	200	1.0	6.56	5.05
2N6031	11	15–60	8.0	140	200	1.0	7.74	5.95
MJ450	3	20 min.	10	40	150	2.0	6.62	4.90
MJ4030	11	1000‡	10	60	150	.....	5.80	4.35
MJ4031	11	1000‡	10	80	150	.....	6.30	4.85
MJ4032	11	1000‡	10	100	150	.....	6.95	5.35
2N5745§	12	15–60	10	80	200	2.0	11.50	8.50
2N5883	11	20–100	10	60	200	4.0	3.58	2.75
2N5884	11	20–100	10	80	200	4.0	4.82	3.70
2N6285	11	750‡	10	60	160	4.0	6.15	4.55
2N6286	11	750‡	10	80	160	4.0	6.75	5.00
2N6287	11	750‡	10	100	160	4.0	7.60	5.65
2N4398	12	15–60	15	40	200	4.0	6.75	5.00
2N4399	12	15–60	15	60	200	4.0	8.45	6.50
2N5683	197	15–60	25	60	300	2.0	16.90	13.00
2N5684	197	15–60	25	80	300	2.0	19.50	15.00

NPN POWER TRANSISTORS—PLASTIC CASE

MJE3439	77	40–160	0.02	350	15	15	$1.07	$0.79
MJE3440	77	40–160	0.02	250	15	15	.84	.62
MJE340	77	30–240	0.05	300	30	.....	1.06	.71
MJE340K	199	30–240	0.05	300	20.8	.....	1.20	.89
MJE341	77	25–200	0.05	150	20.8	15	.98	.65
MJE341K	199	25–200	0.05	150	30	15	1.12	.83
MJE344	77	30–300	0.05	200	20.8	15	1.07	.67
MJE344K	199	30–300	0.05	200	30	15	1.15	.85
MJE345	77	30–300	0.05	325	20.8	15	1.01	.75
MJE2360	199	25–200	0.05	350	30	10♯	1.10	.84
MJE2361	199	50–250	0.05	350	30	10♯	1.43	1.10
MJE180	77	50–250	0.1	40	12.5	50	.57	.44
MJE181	77	50–250	0.1	60	12.5	50	.64	.49
MJE182	77	50–250	0.1	80	12.5	50	.75	.58
MJE3738	199	40–200	0.1	225	30	10♯	1.10	.84
MJE3739	199	40–200	0.1	300	30	10♯	1.25	.95

*Collector common to case, TO-59. †Isolated collector, TO-59. ‡Minimum. §JAN and JANTX types available. ♯Typical.

NPN POWER TRANSISTORS—PLASTIC CASE (CONT'D)

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Each	
		Min.-Max.	A				1-99	100-999
2N5655	77	30–250	0.1	250	20	10	$1.15	$0.75
MJE5655	199	30–250	0.1	250	30	10	1.25	.93
2N5656	77	30–250	0.1	300	20	10	1.35	.90
MJE5656	199	30–250	0.1	300	30	10	1.46	1.08
2N5657	77	30–250	0.1	350	20	10	1.65	1.10
MJE5657	199	30–250	0.1	350	30	10	1.73	1.28
MJE720	77	40 min.	0.15	40	2.0	.....	.66	.51
MJE721	77	40 min.	0.15	60	20	.....	.77	.59
MJE722	77	40 min.	0.15	80	20	.....	.92	.71
MJE220	77	40–200	0.2	40	15	50	.88	.68
MJE221	77	40–150	0.2	40	15	50	.82	.63
MJE223	77	40–200	0.2	60	15	50	1.01	.78
MJE224	77	40–250	0.2	60	15	50	.95	.73
MJE240	77	40–200	0.2	80	15	40	1.14	.88
MJE241	77	40–120	0.2	80	15	40	1.08	.83
MJE242	77	25 min.	0.2	80	15	40	.96	.74
MJE243	77	40–120	0.2	100	15	40	1.22	.95
MJE244	77	25 min.	0.2	100	15	40	1.09	.84
MJE2520	199	40–200	0.2	40	40	3.0	.94	.72
MJE2521	199	40–200	0.2	60	40	3.0	1.00	.77
MJE2160	199	30–240	0.5	300	50	.....	1.75	1.35
MJE3054	199	25–100	0.5	55	40	.....	1.00	.77
2N4921	77	20–100	0.5	40	30	3.0	1.07	.79
MJE4921	199	20–100	0.5	40	40	3.0	1.31	.97
2N4922	77	20–100	0.5	60	30	3.0	1.29	.95
MJE4922	199	20–100	0.5	60	40	3.0	1.53	1.13
2N4923	77	20–100	0.5	80	30	3.0	1.49	1.10
MJE4923	199	20–100	0.5	80	40	3.0	1.73	1.28
MJE222	77	25 min.	1.0	40	15	50	.73	.56
MJE225	77	25 min.	1.0	60	15	50	.86	.66
MJE520	77	25 min.	1.0	30	25	.....	.94	.72
MJE520K	199	25 min.	1.0	30	40	.....	1.17	.90
MJE521	77	40 min.	1.0	40	40	.....	1.32	.98
MJE521K	199	40 min.	1.0	40	60	.....	1.56	1.16
MJE2020	199	25–100	1.0	40	80	3.0	1.28	.99
MJE2021	199	25–100	1.0	60	80	3.0	1.53	1.18
MJE2522	199	20–100	1.0	40	40	3.0	1.00	.77
MJE2523	199	20–100	1.0	60	40	3.0	1.05	.80
MJE3520	77	25 min.	1.0	30	40	.....	1.01	.75
MJE3521	77	40 min.	1.0	40	40	.....	1.38	1.02
MJE800	77	750*	1.5	60	40	.....	1.30	1.00
MJE802	77	750*	1.5	80	40	.....	1.52	1.17
MJE2480	199	20–100	1.5	40	60	2.0	1.10	.84
MJE2481	199	20–100	1.5	60	60	2.0	1.15	.88
2N5190	77	25–100	1.5	40	40	2.0	1.23	.91
MJE5190	199	25–100	1.5	40	60	2.0	1.47	1.09
2N5191	77	25–100	1.5	60	40	2.0	1.47	1.09
MJE5191	199	25–100	1.5	60	60	2.0	1.71	1.27
2N5192	77	20–80	1.5	80	40	2.0	1.77	1.31
MJE5192	199	20–80	1.5	80	60	2.0	2.01	1.49
MJE200	77	45–180	2.0	25	15	65	.79	.61
MJE205	90	25–100	2.0	50	65	.....	1.92	1.25
MJE205K	199	25–100	2.0	50	65	.....	1.81	1.34
MJE801	77	750*	2.0	60	40	.....	1.48	1.14
MJE803	77	750*	2.0	80	40	.....	1.78	1.37
2N6037	77	750*	2.0	40	1.5	25	1.38	1.06
2N6038	77	750*	2.0	60	1.5	25	1.56	1.20
2N6039	77	750*	2.0	80	1.5	25	1.94	1.49
MJE2482	199	20–100	2.5	40	60	2.0	1.15	.88
MJE2483	199	20–100	2.5	60	60	2.0	1.20	.92
2N5977	90	20–100	2.5	40	75	2.0	1.42	1.05
MJE5977	199	20–120	2.5	40	75	2.0	1.54	1.14
2N5978	90	20–120	2.5	60	75	2.0	1.65	1.22
MJE5978	199	20–100	2.5	60	75	2.0	1.77	1.31
2N5979	90	20–120	2.5	80	75	2.0	2.02	1.50
MJE5979	199	20–120	2.5	80	75	2.0	2.14	1.59
MJE1100	90	750*	3.0	60	70	1.0	1.82	1.40
MJE1102	90	750*	3.0	80	70	1.0	2.21	1.70
MJE2100	199	750*	3.0	60	70	.....	1.82	1.40
MJE2101	199	750*	3.0	60	70	.....	1.99	1.53
MJE2801	90	25–100	3.0	60	90	.....	1.50	1.19
MJE2801K	199	25–100	3.0	60	90	.....	1.73	1.28
2N6045	90	1000*	3.0	100	75	.....	2.78	2.14
MJE6045	90	1000*	3.0	100	75	.....	2.78	2.14
MJE1101	90	750*	4.0	60	70	1.0	1.99	1.53
MJE1103	90	750*	4.0	80	70	1.0	2.44	1.88
MJE2102	199	750*	4.0	80	70	.....	2.21	1.70
MJE2103	199	750*	4.0	80	70	.....	2.44	1.88
MJE3055	90	20–70	4.0	60	90	2.0	1.50	1.19
MJE3055K	199	20–70	4.0	60	90	2.0	1.73	1.28
2N5983	90	20–120	4.0	40	90	2.0	1.53	1.13
MJE5983	199	20–120	4.0	40	90	2.0	1.65	1.22
2N5984	90	20–120	4.0	60	90	2.0	1.76	1.30
MJE5984	199	20–120	4.0	60	90	2.0	1.88	1.39
2N5985	90	20–120	4.0	80	90	2.0	2.22	1.64
MJE5985	199	20–120	4.0	80	90	2.0	2.34	1.73
2N6043	90	1000*	4.0	60	75	.....	2.00	1.54
MJE6043	90	1000*	4.0	60	75	.....	2.00	1.54
2N6044	90	1000*	4.0	80	75	.....	2.21	1.75
MJE6044	90	1000*	4.0	80	75	.....	2.21	1.75
MJE1660	90	20–100	5.0	40	90	3.0	2.47	1.90
MJE1661	90	20–100	5.0	60	90	3.0	2.80	2.15
2N5989	90	20–120	6.0	40	100	2.0	2.51	1.86
2N5990	90	20–120	6.0	60	100	2.0	2.67	1.98

*Minimum.

SEE ANOTHER PAGE FOR CASE ILLUSTRATIONS

MOTOROLA Semiconductors

SILICON TRANSISTORS

SILICON POWER TRANSISTORS

PNP POWER TRANSISTORS—

PLASTIC CASE

Listed in order of I_C for optimized h_{FE}, then in numerical sequence.

Motorola Type	Case	h_{FE} at I_C		BV_{CEO} Volts	P_D W	Min. f_T MHz	Net Each	
		Min.-Max.	A				1-99	100-999
MJE170	77	50–250	0.1	40	12.5	50	$0.62	$0.48
MJE171	77	50–250	0.1	60	12.5	50	.69	.53
MJE172	77	50–250	0.1	80	12.5	50	.81	.62
MJE710	77	40 min.	0.15	40	20	.....	.73	.56
MJE711	77	40 min.	0.15	60	20	.....	.83	.64
MJE712	77	40 min.	0.15	80	20	.....	.99	.76
MJE230	77	40–200	0.2	40	15	50	1.00	.77
MJE231	77	40–150	0.2	40	15	50	.92	.71
MJE233	77	40–200	0.2	60	15	50	1.13	.87
MJE234	77	40–150	0.2	60	15	50	1.07	.82
MJE250	77	40–200	0.2	80	15	40	1.26	.97
MJE251	77	40–120	0.2	80	15	40	1.20	.92
MJE252	77	25 min.	0.2	80	15	40	1.12	.86
MJE253	77	40–120	0.2	100	15	40	1.35	1.04
MJE254	77	25 min.	0.2	100	15	40	1.25	.96
MJE2370	199	40–200	0.2	40	40	3.0	1.05	.80
MJE2371	199	40–200	0.2	60	40	3.0	1.16	.89
MJE3740	199	30–100	0.25	60	40	4.0	1.82	1.39
MJE3741	199	30–100	0.25	80	40	4.0	2.04	1.55
2N4918	77	20–100	0.5	40	60	3.0	1.26	.93
MJE4918	199	20–100	0.5	40	40	3.0	1.50	1.11
2N4919	77	20–100	0.5	60	60	3.0	1.48	1.10
MJE4919	199	20–100	0.5	60	40	3.0	1.73	1.28
2N4920	77	20–100	0.5	80	30	3.0	1.75	1.30
MJE4920	199	20–100	0.5	80	40	3.0	1.99	1.48
MJE232	77	25 min.	1.0	40	15	50	.83	.64
MJE235	77	25 min.	1.0	60	15	50	.98	.75
MJE370	77	25 min.	1.0	30	25	.....	1.07	.82
MJE370K	199	25 min.	1.0	30	40	.....	1.35	1.00
MJE371	77	40 min.	1.0	40	40	.....	1.50	1.11
MJE371K	199	40 min.	1.0	40	60	.....	1.74	1.29
MJE2010	199	25–125	1.0	40	80	3.0	1.71	1.32
MJE2011	199	25–125	1.0	60	80	3.0	1.93	1.49
MJE2490	199	20–100	1.0	40	60	3.0	1.37	1.05
MJE2491	199	20–100	1.0	60	60	3.0	1.55	1.19
MJE3370	77	25 min.	1.0	30	25	.....	1.18	.87
MJE3371	77	40 min.	1.0	40	40	.....	1.55	1.15
MJE700	77	750*	1.5	60	40	.....	1.52	1.17
MJE702	77	750*	1.5	80	40	.....	1.79	1.38
2N5193	77	25–100	1.5	40	40	2.0	1.38	1.02
MJE5193	199	25–100	1.5	40	60	2.0	1.62	1.20
2N5194	77	25–100	1.5	60	40	2.0	1.62	1.20
MJE5194	199	25–100	1.5	60	60	2.0	1.86	1.38
2N5195	77	20–80	1.5	80	40	2.0	1.99	1.47
MJE5195	199	20–80	1.5	80	60	2.0	2.22	1.65
MJE105	90	25–100	2.0	50	65	.....	2.33	1.55
MJE105K	199	25–100	2.0	50	65	.....	2.21	1.64
MJE210	77	45–180	2.0	25	15	65	.90	.69
MJE701	77	750*	2.0	60	40	.....	1.73	1.33
MJE703	77	750*	2.0	80	40	.....	2.11	1.62
2N6034	77	750*	2.0	40	1.5	25	1.61	1.24
2N6035	77	750*	2.0	60	1.5	25	1.83	1.41
2N6036	77	750*	2.0	80	1.5	25	2.27	1.75
2N5974	90	20–120	2.5	40	75	2.0	1.58	1.17
MJE5974	199	20–120	2.5	40	75	2.0	1.70	1.26
2N5975	90	20–120	2.5	60	75	2.0	1.81	1.34
MJE5975	199	20–120	2.5	60	75	2.0	1.93	1.43
2N5976	90	20–120	2.5	80	75	2.0	2.19	1.62
MJE5976	199	20–120	2.5	80	75	2.0	2.31	1.71
MJE1090	90	750*	3.0	60	70	1.0	2.66	2.05
MJE1092	90	750*	3.0	80	70	1.0	3.10	2.40
MJE2090	199	750*	3.0	60	70	.....	2.66	2.05
MJE2091	199	750*	3.0	60	70	.....	2.90	2.23
MJE2901	90	25–100	3.0	60	90	.....	2.23	1.65
MJE2901K	199	25–100	3.0	60	90	.....	2.35	1.74
2N6042	90	1000*	3.0	100	75	.....	3.77	2.90
MJE6042	90	1000*	3.0	100	75	.....	3.77	2.90
MJE1091	90	750*	4.0	60	70	1.0	2.90	2.23
MJE1093	90	750*	4.0	80	70	1.0	3.44	2.65
MJE2092	199	750*	4.0	80	70	.....	3.10	2.40
MJE2093	199	750*	4.0	80	70	.....	3.44	2.65
MJE2955	90	20–70	4.0	60	90	2.0	2.23	1.65
MJE2955K	199	20–70	4.0	60	90	2.0	2.35	1.74
2N5980	90	20–120	4.0	40	90	2.0	2.10	1.56
MJE5980	199	20–120	4.0	40	90	2.0	2.23	1.65
2N5981	90	20–120	4.0	60	90	2.0	2.43	1.80
MJE5981	199	20–120	4.0	60	90	2.0	2.55	1.89
2N5982	90	20–120	4.0	80	90	2.0	2.94	2.18
MJE5982	199	20–120	4.0	80	90	2.0	3.06	2.27
2N6040	90	1000*	4.0	60	75	.....	3.00	2.31
MJE6040	90	1000*	4.0	60	75	.....	3.00	2.31
2N6041	90	1000*	4.0	80	75	.....	3.28	2.52
MJE6041	90	1000*	4.0	80	75	.....	3.28	2.52
MJE1290	90	20–100	5.0	40	90	3.0	3.25	2.50
MJE1291	90	20–100	5.0	60	90	3.0	3.64	2.80
2N5986	90	20–120	6.0	40	100	2.0	2.81	2.08
2N5987	90	20–120	6.0	80	100	2.0	2.95	2.18
2N5988	90	20–120	6.0	60	100	2.0	3.20	2.37

*Minimum.

SEE OTHER PAGES FOR CASE ILLUSTRATIONS

SMALL-SIGNAL HERMETIC TRANSISTORS

Following types are preferred types; chosen using performance and cost as the criteria. Many other types available. Listed in order of decreasing BV_{CEO} and h_{FE} values.

SILICON AMPLIFIER—300 mW TO 600 mW

Low current; normal operation—μA range.

Motorola Type	Case	Polarity	BV_{CEO} V	Min. h_{FE}	Net Ea., Lots	
					1-99	100-999
2N3799A*	22	PNP	90	100	$6.75	$4.50
2N2484*	22	NPN	60	100	.52	.35
2N3799*	22	PNP	60	100	3.50	2.35
2N930A*†	22	NPN	45	100	1.80	1.09
2N929A‡	22	NPN	45	50	4.50	3.00
2N918‡	20	NPN	45	25	2.90	1.73
2N3308	20	PNP	45	25	9.00	6.00

Medium current; normal operation—low mA range. Type 2N2906, 2N2906A, 2N2907, 2N2907A also available in TO-46 (Case 26).

2N2907A‡	22	PNP	60	100	$2.20	$1.33
2N3251A‡	22	PNP	60	100	3.90	2.33
2N2906A‡	22	PNP	60	50	2.40	1.45
2N3250A‡	22	PNP	60	50	3.55	2.14
2N3073	20	PNP	60	25	.90	.60
2N2222A‡	22	NPN	40	100	1.20	.71
2N3947	22	NPN	40	100	2.75	1.85
2N2907‡	22	PNP	40	100	2.00	1.19
2N3251	22	PNP	40	100	3.55	2.14
2N2221A‡	22	NPN	40	50	1.65	.97
2N3946	22	NPN	40	50	2.40	1.60
2N2906‡	22	PNP	40	50	1.85	1.12
2N3250	22	PNP	40	50	3.20	1.94
2N2222‡	22	NPN	25	100	.95	.57
2N2221‡	22	NPN	25	50	1.05	.62

High current; normal operation—mid mA range.

2N720A	22	NPN	80	50	$1.32	$0.88
2N718A‡	22	NPN	60	50	.79	.60

SILICON AMPLIFIER—600 mW TO 1.0 W

Low current; normal operation—μA range.

2N4930‡	79	PNP	200	50	$5.90	$3.95
2N3712	31	NPN	100	100	2.25	1.50
MM3009	79	NPN	100	50	1.80	1.20

Medium current; normal operation—low mA range. Type 2N2904, 2N2904A, 2N2905, 2N2905A also available in TO-46 (Case 26).

MM3019	79	NPN	80	100	$1.05	$0.70
2N4405	79	PNP	80	100	9.75	6.50
MM3020	79	NPN	80	50	.91	.61
2N4404	79	PNP	80	50	8.25	5.50
2N4928	31	PNP	80	20	4.05	2.70
2N2219A‡	31	NPN	50	100	1.75	1.04
2N2905A‡	31	PNP	50	100	2.65	1.59
2N2218A‡	31	NPN	50	50	1.50	.89
MM2193A	79	NPN	50	50	1.05	.70
MM3053	79	NPN	50	50	.50	.33
2N2904A‡	31	PNP	50	50	2.55	1.52
2N2194	31	NPN	50	20	2.18	1.45
2N2194A	31	NPN	50	20	2.40	1.60
2N2194B	31	NPN	50	20	2.85	1.90
2N3081	31	PNP	50	20	9.00	6.00
2N2219‡	31	NPN	20	100	1.15	.69
2N2905‡	31	PNP	20	100	2.20	1.31
2N2218‡	31	NPN	20	50	1.05	.62
MM2270	79	NPN	20	50	.65	.43
2N1132A	31	PNP	20	50	2.75	1.85
2N2904‡	31	PNP	20	50	1.95	1.16
2N4890	79	PNP	20	50	1.12	.75
2N2195	31	NPN	20	20	1.38	.92
2N2195A	31	NPN	20	20	1.53	1.02
2N2195B	31	NPN	20	20	2.40	1.60
2N2788	31	NPN	20	20	4.65	3.10
2N1131A	31	PNP	20	20	2.70	1.80

High current; normal operation—mid mA range.

2N3501‡	31	NPN	150	100	$12.60	$ 8.40
2N3637‡	31	PNP	150	100	21.30	14.20
2N3500‡	31	NPN	150	50	11.25	7.50
2N3636‡	31	PNP	150	50	19.40	12.95
2N3114	31	NPN	150	20	6.00	4.00
2N3499‡	31	NPN	100	100	7.40	4.95
2N3635‡	31	PNP	100	100	14.40	9.60
2N3498‡	31	NPN	100	50	6.60	4.40
MM3007	79	NPN	100	50	2.55	1.70
2N3634‡	31	PNP	100	50	13.20	8.80
MM5007	79	PNP	100	50	1.73	1.15
2N4929	79	PNP	100	20	4.95	3.30
MM3005	79	NPN	60	50	1.60	1.05
MM3006	79	NPN	60	50	1.90	1.25
2N5864	79	PNP	60	50	1.20	.80
MM5005	79	PNP	60	50	1.12	.75
MM5006	79	PNP	60	50	1.35	.90
MM1893	79	NPN	60	20	.77	.51
2N4406	79	PNP	60	20	11.25	7.50
2N5865	31	PNP	60	20	1.95	1.30

*Recommended for low noise application. †JAN type available. ‡JAN and JANTX types available.

MOTOROLA Semiconductors

SMALL SIGNAL TRANSISTORS

SMALL SIGNAL HERMETIC TRANSISTORS

SILICON SWITCHING

Following types are preferred types; chosen using performance and cost as the criteria. Many other types available. Listed in order of decreasing BV_{CEO}, then in numerical order of t_{on} and t_{off} values.

Low current; specified switching I_C—5 mA–100 mA.

Motorola Type	Case	Polarity	BV_{CEO} V	t_{on} and t_{off}	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N3637*	31	PNP	175	<1.0 s	**$21.30**	**$14.20**
2N3495	31	PNP	120	<1.0 s	**12.75**	**8.50**
2N3497	31	PNP	120	<1.0 s	**12.75**	**8.50**
2N2501	22	NPN	20	< 50 ns	**4.70**	**3.15**
2N3227	22	NPN	20	< 50 ns	**2.40**	**1.60**
MM8698	22	PNP	20	<150 ns	**	**
2N3250	22	PNP	20	<350 ns	**3.20**	**1.94**
2N3250A*	22	PNP	20	<350 ns	**3.55**	**2.14**
2N3251	22	PNP	20	<350 ns	**3.55**	**2.14**
2N3251A*	22	PNP	20	<350 ns	**3.90**	**2.33**
2N708*	22	NPN	15	< 50 ns	**.80**	**.45**
2N2369A*	22	NPN	15	< 50 ns	**1.50**	**.89**
MM4208A	22	PNP	15	< 50 ns	**4.50**	**3.00**
MM4209A	22	PNP	15	< 50 ns	**7.50**	**5.00**
2N4260†	20	PNP	15	< 50 ns	**12.35**	**8.25**
2N4261†	20	PNP	15	< 50 ns	**14.60**	**9.75**
2N706‡	22	NPN	15	<150 ns	**.69**	**.46**
2N869A*	22	PNP	15	<150 ns	**4.50**	**3.00**
2N2481*	22	NPN	15	<150 ns	**2.63**	**1.75**
2N3647	26	NPN	10	< 50 ns	**2.25**	**1.50**
MM4208	22	PNP	10	< 50 ns	**3.75**	**2.50**
MM4209	22	PNP	10	< 50 ns	**6.75**	**4.50**
2N709	22	NPN	10	<150 ns	**3.15**	**2.10**
MM2894A	22	PNP	10	<150 ns	**3.25**	**2.15**

*JAN and JANTX types available. †Nonsaturated applications. ‡JAN type available. **Prices on request.

Medium current; specified switching I_C—100 mA–500 mA. Type 2N2907 and 2N2907A also available in TO-46 (Case 26).

Motorola Type	Case	Polarity	BV_{CEO} V	t_{on} and t_{off}	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N3501*	31	NPN	150	<1 sec	**$12.60**	**$8.40**
2N2907A	22	PNP	50	<150 ns	**2.20**	**1.33**
2N2907	22	PNP	40	<150 ns	**2.00**	**1.19**
2N5859	79	NPN	40	<150 ns	**.90**	**.65**
2N4890	79	PNP	40	<350 ns	**1.12**	**.75**
2N914*	22	NPN	30	< 50 ns	**.95**	**.63**
2N2540	22	NPN	30	<150 ns	**5.85**	**3.90**
2N2847	22	NPN	30	<150 ns	**1.42**	**.95**
2N3249	22	PNP	30	<150 ns	**4.65**	**3.10**
2N3134	22	PNP	30	<350 ns	**1.05**	**.70**
2N3136	22	PNP	30	<350 ns	**5.85**	**3.90**
2N3300	31	NPN	30	<350 ns	**1.05**	**.70**
2N3302	22	NPN	30	<350 ns	**1.05**	**.70**
2N2959	31	NPN	30	<1.0 s	**2.70**	**1.80**
2N3116	22	NPN	30	<1.0 s	**2.40**	**1.60**

High current; specified switching I_C—400 mA–1.5 A.

Motorola Type	Case	Polarity	BV_{CEO} V	t_{on} and t_{off}	Net Ea., Lots of 1-99	Net Ea., Lots of 100-999
2N3444†	31	NPN	50	<150 ns	**$12.00**	**$ 8.00**
2N3507*	31	NPN	50	<150 ns	**13.20**	**8.80**
2N3763*	22	PNP	50	<150 ns	**7.50**	**5.00**
2N5861	20	NPN	50	<150 ns	**1.35**	**1.00**
2N4405	79	PNP	50	<350 ns	**9.75**	**6.50**
2N4407	79	PNP	50	<350 ns	**12.75**	**8.50**
MM4029	79	PNP	50	<1.0 s	**15.75**	**10.50**
MM4033	79	PNP	50	<1.0 s	**1.32**	**.88**
2N3467†	31	PNP	40	<150 ns	**9.75**	**6.50**
2N3506*	31	NPN	40	<150 ns	**11.55**	**7.70**
2N3244	31	PNP	40	<350 ns	**15.75**	**10.50**
2N3303	31	NPN	30	< 50 ns	**13.50**	**9.00**
2N3252	31	NPN	30	<150 ns	**9.75**	**6.50**

*JAN and JANTX types available. †JAN type available.

SILICON DUAL TRANSISTORS

Devices listed in descending order of magnitude of h_{FE}.

LOW NOISE—HIGH GAIN AMPLIFIERS

Motorola Type	Case	Polarity	BV_{CEO} V	DC Current Gain Ratio h_{FE^1}/h_{FE^2}	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N2919	654	NPN	60	0.9/1.0 10%	**$ 3.35**	**$ 2.60**
2N2920*	654	NPN	60		**5.25**	**3.50**
2N3810	654	PNP	60		**20.25**	**13.50**
2N3811	654	PNP	60		**27.75**	**18.50**
2N2639	654	NPN	40	0.9/1.0 10%	**2.60**	**2.00**
2N2642	654	NPN	40		**3.55**	**2.75**
2N2915	654	NPN	40		**7.05**	**4.70**
2N2916	654	NPN	40		**9.15**	**6.10**
2N3808	654	PNP	60	0.8/1.0 20%	**14.55**	**9.70**
2N3809	654	PNP	60		**22.50**	**15.00**
2N2913	654	NPN	40	0.8/1.0 > or unmatched 20%	**2.70**	**1.80**
2N2914	654	NPN	40		**3.00**	**2.00**
2N3806	654	PNP	60		**11.70**	**7.80**
2N3807	654	PNP	60		**14.25**	**9.50**

*JAN and JANTX types available.

SILICON DUAL TRANSISTORS (CONT'D)

GENERAL PURPOSE AMPLIFIERS AND SWITCHES

Motorola Type	Case	Polarity	BV_{CEO} V	DC Current Gain Ratio h_{FE^1}/h_{FE^2}	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N2060*	654	NPN	60	0.9/1.0 10%	**$ 4.10**	**$ 2.75**
2N2903A	654	NPN	30		**7.20**	**4.80**
MD3250A†	654	PNP	40		**19.50**	**13.00**
MD3251A†	654	PNP	40		**23.25**	**15.50**
2N2480A	654	NPN	40	0.8/1.0 20%	**5.70**	**3.80**
2N2652	654	NPN	60		**7.35**	**4.90**
2N2903	654	NPN	30		**5.85**	**3.90**
2N4938	654	PNP	40		**5.70**	**3.80**
MD2218†	654	NPN	30	0.8/1.0 > or unmatched 20%	**6.75**	**4.50**
MD2219†	654	NPN	30		**7.95**	**5.30**
MD2905†	654	PNP	40		**7.95**	**5.30**
MD3251†	654	PNP	40		**11.60**	**7.75**
2N5793	654	NPN	40		**5.65**	**3.25**
2N5794	654	NPN	40		**6.60**	**4.40**
2N5795	654	PNP	60		**5.65**	**3.25**
2N5796	654	PNP	60		**6.60**	**4.40**
2N4854*	654	‡	40	....	**13.50**	**9.00**
MD6001†	654	‡	30	....	**10.80**	**7.20**
MD6002†	654	‡	30	....	**13.50**	**9.00**
CORE DRIVERS						
MD3467†	654	PNP	40	0.8/1.0 > or unmatched 20%	**$11.25**	**$7.50**
MD3725†	654	NPN	40		**10.10**	**6.75**
MD3762	654	PNP	40		**12.00**	**8.00**
HIGH SPEED SWITCHES, HIGH FREQUENCY OSCILLATORS						
MD708A†	654	NPN	15	0.9/1.0 10%	**$ 6.75**	**$ 4.50**
MD918A†	654	NPN	15		**15.75**	**10.50**
MD2369A†	654	NPN	15		**11.25**	**7.50**
MD708B†	654	NPN	15	0.8/1.0 20%	**4.80**	**3.20**
MD918B	654	NPN	15		**13.20**	**8.80**
MD708†	654	NPN	15	0.8/1.0 > or unmatched 20%	**4.35**	**2.90**
MD918†	654	NPN	15		**8.25**	**5.50**
MD2369†	654	NPN	15		**5.85**	**3.90**

*JAN and JANTX types available. †For Case 610, add suffix **F**; prices on request. ‡Complementary pairs; one NPN/one PNP.

NPN-PNP SILICON QUAD TRANSISTORS

Each quad transistor contains four similar transistors that can be used to reduce space requirements. Listed in order of decreasing BV_{CEO} (min.). NPN except as otherwise noted.

PLASTIC DUAL-IN-LINE (CASE 646)

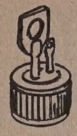
Motorola Type	BV_{CEO} V	h_{FE} at I_C Min.	h_{FE} at I_C mA	Maximum t_{on} ns	Maximum t_{off} ns	Min. f_T MHz	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MPQ3799*	60	300	0.1	.....	......	60	**$4.07**	**$2.75**
MPQ3467*	40	20	500	40	90	250	**4.60**	**3.20**
MPQ3725	40	25	500	35	60	250	**4.40**	**3.10**
MPQ2483	40	150	1.0	.....	......	50	**3.60**	**2.50**
MPQ3798*	40	150	0.1	.....	......	60	**3.80**	**2.65**
MPQ2484	40	300	1.0	.....	......	50	**3.80**	**2.65**
MPQ6001†	30	40	150	30‡	225‡	200	**4.00**	**2.80**
MPQ6002†	30	100	150	30‡	225‡	200	**4.25**	**2.95**
MPQ3303	12	40	300	15	20	400	**4.50**	**3.75**
CERAMIC DUAL-IN-LINE (CASE 632)								
MHQ2907*	60	100	150	30‡	100‡	350	**$6.75**	**$4.40**
MHQ3799*	60	300	0.1	.....	......	325	**8.45**	**5.50**
MHQ6100A†	45	150	1.0	.....	......	175§	**8.45**	**5.50**
MHQ2906*	40	40	150	30‡	100‡	350	**6.15**	**4.00**
MHQ2221	40	40	150	30	225	350	**6.15**	**4.00**
MHQ2222	40	100	150	25	250	350	**6.75**	**4.40**
MHQ3798*	40	150	0.1	.....	......	325	**7.00**	**5.00**
MHQ6100†	40	75	1.0	.....	......	175§	**7.00**	**5.00**
MHQ3467*	40	20	500	40	120	....	**7.35**	**6.50**
MHQ6001†	30	40	150	.....	......	400	**6.15**	**4.00**
MHQ6002†	30	100	150	.....	......	400	**6.75**	**4.40**
MHQ2484	30	300	1.0	.....	......	175	**8.45**	**5.50**
MHQ2483	25	150	1.0	.....	......	175	**7.00**	**5.00**
MHQ2369	15	40	10	9‡	15‡	550	**6.15**	**4.00**
MHQ3546*	12	25	50	15‡	25‡	1000	**5.65**	**4.60**
FLAT PACK (CASE 607)								
MQ2905A*	60	100	150	45	130	225	**27.75**	**18.50***
MQ3799*	60	300	0.1	.....	......	130	**27.75**	**18.50***
MQ2482	60	250	1.0	.....	......	70	**	**
MQ930	45	150	1.0	.....	......	70	**24.00**	**14.00***
2N5146*	40	20	1000	40	120	200	**26.25**	**17.50***
MQ3467*	40	20	500	40	120	200	**27.75**	**18.50***
MQ3725	40	30	500	45	75	300	**25.50**	**19.00***
MQ2219A	40	100	150	60	350	270	**27.75**	**18.50***
MQ2904*	40	40	150	.....	130	225	**24.75**	**16.50***
MQ3251*	40	100	10	.....	......	350	**26.25**	**17.50***
MQ2218	30	40	150	60	350	220	**24.00**	**16.00***

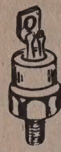
*PNP; all other types NPN. †Complementary. ‡Typical. §NPN; 130 MHz, PNP. *100–499 Quantity; 500–999 prices on request. **Prices on request.

NPN SILICON AVALANCHE TRANSISTOR (CASE 79)

Motorola Type 2N5271—BV_{CER} = 200 V min. I_C = 5.0 A max. V_O = 100 V min. t_d = 5.0 ns max.; t_r = 1.0 ns max. Net Each, Lots of: 1–99 . . . . **$35.25**; 100–999 . . . . **$23.50**

SEE ANOTHER PAGE FOR CASE ILLUSTRATIONS


Case 237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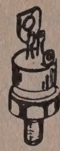
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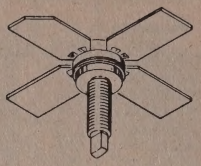
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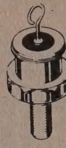
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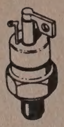
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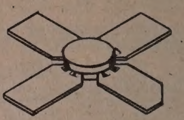
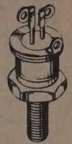

Case 249-01


Case 250

SMALL SIGNAL HERMETIC TRANSISTORS

Listed in order of decreasing BV_{CEO}.

PNP GERMANIUM MESA RF AMPLIFIERS

LOW CURRENT—1 mA–50 mA

Motorola Type	Case	BV_{CEO} V	NF dB	f_t MHz	Net Ea., Lots of 1-99	100-999
2N2416	20	25	<3.0	>600	$3.35	$2.25
2N3282	20	25	<3.0	>600	2.15	1.45
2N3785	20	25	<3.0	>600	6.75	4.50
2N700	20	15	>6.0	<600	6.00	4.00

MEDIUM CURRENT—25 mA–100 mA

Motorola Type	Case	BV_{CEO} V	NF dB	f_t MHz	Net Ea., Lots of 1-99	100-999
2N499*	149	35	<6.0	<600	$ 3.60	$ 2.40
2N502	31	35	<6.0	<600	3.25	2.15
2N2996	20	25	<3.0	>600	1.40	.95
2N705	20	25	<6.0	>600	1.03	.69
2N2273*	20	25	<6.0	>600	2.45	1.65
MM2273	31	25	<6.0	>600	**	**
2N1562	23	15	<3.0	<600	14.25	9.50
2N1693	24	15	<3.0	<600	18.00	12.00
2N1141A	31	15	<6.0	>600	7.10	4.75

*JAN type available. **Prices on request.

PNP GERMANIUM MESA SWITCHES

Motorola Type	Case	Max. I_C mA	BV_{CEO} V	t_s ns	Net Ea., Lots of 1-99	100-999
2N705	22	To 175	To 30	<50	$1.03	$0.69
2N970	22	To 175	To 30	<50	.81	.54
2N2258	22	To 175	To 30	<50	1.12	.75
2N2635	22	To 175	To 30	<50	.94	.63
2N2955	20	To 175	To 30	<50	2.48	1.65
2N1204, A	31	To 550	To 25	<50	1.65	1.10
2N2096	31	To 550	To 25	<50	1.65	1.10
2N2381	31	To 550	To 25	<50	4.65	3.10
2N1499	TO-9	To 150	To 20	<90	1.30	.85
2N1499A	TO-9	To 150	To 20	<90	1.60	1.05
2N1499B	TO-9	To 150	To 20	<90	1.40	.95
2N393JAN	TO-9	To 150	To 20	<200	5.18	3.45
2N501	149	To 150	To 8	<20	5.55	3.70
2N962*	22	To 150	To 8	<20	.85	.57
2N967	22	To 150	To 8	<20	.87	.58

*JAN type available.

NPN-PNP SILICON RF TRANSISTORS

For communications and general amplifier applications. Listed in order of increasing test frequency; then in order of increasing output power rating, within each price break-out tables.

NPN RF POWER AMPLIFIERS

Motorola Type	Case	Test Conditions f at V_{CC} MHz	V	Min. P_{out} W	Min. BV_{CBO} V	Net Each, Lots of 1-99	100-499
MRF8004	TO-39	27	12.5	3.5	60	$ 2.60	$ 2.00
2N6366	TO-102	30	12.5	2.5*	36	6.20	4.75
2N5846	TO-102	50	12.5	3.5	36	6.20	4.75
2N4072	TO-18	175	13.6	0.25	40	1.95	1.50
2N4073	TO-39	175	13.6	0.5	40	2.35	1.80
2N4427	TO-39	175	12	1.0	40	1.63	1.25
2N3553‡	TO-39	175	28	2.5	65	2.30	1.75
2N6255	TO-39	175	12.5	3.0	36	3.25	2.50
2N5589	144B-03	175	13.6	3.0	36	6.20	4.75
2N6080	145A-01	175	12.5	4.0	36	7.80	6.00
2N3924	TO-39	175	13.6	4.0	36	3.65	2.80
2N3961	TO-102	175	28	4.0	65	7.55	5.80
2N3925	TO-102	175	13.6	5.0	36	5.35	4.10
2N5641	144B-03	175	28	7.0	65	5.55	4.25
2N6081	145A-01	175	12.5	15	36	12.00	9.25
2N3137	TO-39	250	20	0.4	40	2.55	1.95
2N3866†	TO-39	400	28	1.0	55	1.40	1.08
2N3866A	TO-39	400	28	1.0	55	1.95	1.50
2N3948	TO-39	400	13.6	1.0	36	3.25	2.50
2N5635	144B-03	400	28	2.5	60	5.60	4.30
2N6256	249-01	470	12.5	0.5	36	4.05	3.10
2N4428	TO-39	500	28	0.75	55	5.85	4.50
						1-99	100-249
2N3296	TO-102	30	30	3.0*	60	$10.40	$8.00
2N6367	211-01	30	12.5	9.0*	18	11.50	8.80
2N6370	211-01	30	28	10.0*	65	11.50	8.00
2N2949	TO-107	50	25	3.5	60	7.80	6.00
2N2950	TO-102	50	25	3.5	60	9.75	7.50
2N5847	145A-01	50	12.5	8.0	36	11.00	8.45
2N3375†	TO-60	100	28	7.5	65	8.75	6.75
2N3926	TO-60	175	13.6	7.0	36	11.70	9.00
2N5590	145A-01	175	13.6	10	36	9.40	7.25
MRF207	TO-39	220	12.5	1.0	36	2.25	1.75
2N5090	TO-60	400	28	1.2	55	7.80	6.00
2N5644	145A-01	470	12.5	1.0	36	8.45	6.50
2N5944	244-01	470	12.5	2.0	36	10.40	8.00
2N5645	145A-01	470	12.5	4.0	36	12.35	9.50
MM8009#	TO-39	1000	28	0.9	55	8.45	6.50
2N5108#	TO-39	1000	28	1.0	55	10.70	8.25

NPN RF POWER AMPLIFIERS (Cont'd)

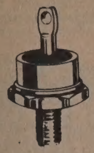
Motorola Type	Case	Test Conditions f at V_{CC} MHz	V	Min. P_{out} W	Min. BV_{CBO} V	Net Each, Lots of 1-24	25-99
2N3297	TO-3	30	30	12*	60	$45.50	$40.30
2N2948	TO-3	30	25	15	40	17.55	15.50
2N5070	TO-60	30	28	25*	65	20.00	17.70
2N6368	211-01	30	12.5	40*	36	28.00	24.80
2N5941	211-01	30	28	40*	65	29.50	26.00
2N5942	211-02	30	28	80*	65	56.00	49.50
2N2947	TO-3	50	25	15	60	19.50	17.25
2N5848	145A-01	50	12.5	20	48	24.55	21.75
2N5849	145A-01	50	12.5	40	48	40.30	35.60
2N3950	TO-60	50	28	50	65	29.60	26.20
2N4130	TO-3	70	28	50	80	45.50	40.30
2N5862	145A-02	150	27	7.5	65	56.50	50.00
MM1553	145C-01	150	44	75	100	56.50	50.00
2N6166	211-02	150	28	100	65	95.00	85.00
2N3927	TO-60	175	13.6	12	36	13.00	11.50
2N3632	TO-60	175	28	13.5	65	12.75	11.80
2N5642	145A-01	175	28	20	65	18.45	16.30
2N6082	145A-01	175	12.5	25	36	24.00	21.30
2N5591	145A-01	175	13.6	25	36	19.10	16.90
2N6083	145A-01	175	12.5	30	36	27.30	24.20
2N5643	145A-01	175	28	40	65	35.00	31.00
2N6084	145A-01	175	12.5	40	36	46.80	41.40
MRF208	145A-01	220	12.5	10	36	11.70	10.20
MRF209	145A-01	220	12.5	25	36	14.25	12.40
2N5636	144B-03	400	28	7.5	60	17.50	15.50
2N5016	TO-60	400	28	15	65	15.60	13.80
2N5637	145A-01	400	28	20	60	30.65	27.20
MRF5177	215	400	28	30	60	54.60	48.50
2N5945	244-01	470	12.5	4.0	36	14.30	12.65
2N5946	244-01	470	12.5	10	36	21.60	19.10
2N5646	145A-01	470	12.5	12	36	22.80	20.10
2N6136	145A-01	470	12.5	25	36	32.50	28.80
MRF618	278-01	520	12.5	15	36	24.00	21.00
2N4012	TO-60	1000	28	2.5§	65	14.20	13.50

PNP RF POWER AMPLIFIERS

Motorola Type	Case	Test Conditions f at V_{CC} MHz	V	Min. P_{out} W	Min. BV_{CBO} V	Net Each, Lots of 1-24	25-99
2N5161	TO-60	175	28	7.5	60	$11.70	$10.35
2N6096	211-01	175	12.5	30	36	21.80	19.30
2N5162	TO-60	175	28	30	60	17.55	15.50
2N6097	211-01	175	12.5	40	36	31.70	28.00
						1-99	100-499
MM4018	TO-39	175	12.5	0.5	40	$1.55	$1.20
MM4019	TO-39	175	28	2.5	60	3.25	2.50
2N5160	TO-39	400	28	1.0	60	3.80	2.90
						1-99	100-249
2N6094	211-01	175	12.5	4.0	36	$ 6.50	$5.00
2N6095	211-01	175	12.5	15	36	11.70	9.00

*PEP. †JAN type available. ‡JAN and JANTX types available. §Tripler. #Also UHF and Microwave oscillators.

MOTOROLA Semiconductors Transistors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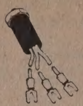
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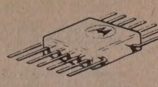
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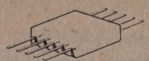
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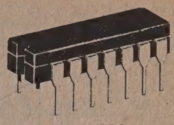
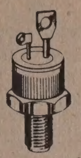

Case 632, 646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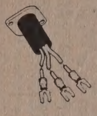
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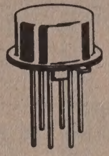
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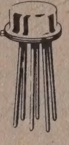

Case 654

RF TRANSISTORS

NPN LOW-NOISE SMALL-SIGNAL AMPLIFIERS

Includes devices designed specifically for CATV applications. Listed in order of increasing test frequency; then in order of increasing noise figure.

Motorola Type	Case	Test Conditions f at V_{CE} MHz	V	Max. NF dB	Min. f_T MHz	Net Each, Lots of 1-99	100-499
MM8000	TO-39	200	15	2.7*	700	$2.85	$2.20
MM8001	TO-39	200	15	2.7*	900	3.30	2.55
2N5109	TO-39	200	15	3.0*	1200	2.85	2.20
MRF502	TO-72	200	6	4.0*	800	.65	.50
MRF501	TO-72	200	6	4.5*	600	.58	.45
2N5179‡	TO-72	200	6	4.5	900	.77	.59
2N3287	TO-72	200	10	6.0	350	4.90	3.75
2N3288	TO-72	200	10	6.0	350	4.40	3.40
2N3289	TO-72	200	10	7.0	300	3.90	3.00
2N3290	TO-72	200	10	7.0	300	3.45	2.65
2N3294	TO-72	200	10	7.0*	250	1.30	1.00
2N5943	TO-39	200	15	8.0	1200	3.25	2.50
2N3291	TO-72	200	10	8.0	250	1.70	1.30
2N5947	144D-01	200	20	8.5	1100	8.65	6.65*
2N3292	TO-72	200	10	9.0	250	1.55	1.20
2N5031	TO-72	450	6	2.5	1000	7.80	6.00*
2N5032	TO-72	450	6	3.0	1000	5.85	4.50
2N3839	TO-72	450	6	3.4	1000	5.50	4.25
MM8006	TO-72	450	6	3.8	1000	3.80	2.95
2N2857†‡	TO-72	450	6	4.5	1000	2.40	1.85
2N6305	TO-72	450	5	4.5	1200	1.65	1.25
MM8007	TO-72	450	6	5.0	1000	2.50	1.90
2N6304	TO-72	450	5	5.5	1400	2.10	1.60

PNP LOW-NOISE SMALL-SIGNAL AMPLIFIERS

2N5829	TO-72	450	10	2.5	1200	$11.70	$9.00*
2N4957	TO-72	450	10	3.0	1200	7.80	6.00*
2N4958	TO-72	450	10	3.3	1000	6.20	4.75
2N4959	TO-72	450	10	3.8	1000	4.90	3.75

*Typical. †JAN and JANTX types available. ‡Also UHF and microwave oscillators. *100–249 quantity.

NPN UHF AND MICROWAVE OSCILLATORS (TO-107)

Listed in order of increasing test frequency; then in order of increasing oscillator output power.

Motorola Type	Test Conditions f at V_{CE} MHz	V	Minimum P_{out} (Osc) mW	f_T MHz	BV_{CBO} V	Net Each, Lots of 1-99	100-499
2N3293*	257	10	2.0	250	20	$ 1.45	$ 1.10
MM8011	2000	20	100	1100	35	5.85	4.50
MM8010	2000	20	200	1100	35	8.45	6.50*
MM8008	2000	20	300	1100	35	12.35	9.50*
						1-24	25-99
MM1501	1500	20	150	1000	30	$23.40	$20.75
MM1500	1500	20	250	1500	30	36.40	32.20

*Case TO-72. †Case TO-39. *100–249 quantity.

NPN HIGH-SPEED CURRENT MODE SWITCHES

Motorola Type	Case	Test Conditions I_C at V_{CE} mA	V	Min. f_T MHz	Max. C_{cb} pF	Net Each, Lots of 1-99	100-249
2N3959	TO-18	10	10	1300	2.5†	$ 7.75	$5.95
2N3960*	TO-18	10	10	1600	2.5†	8.95	6.90
2N5842	TO-72	25	4	1700	1.5	9.75	7.50
2N5841	TO-72	25	4	2200	1.5	11.70	9.00
MM4049‡	TO-72	25	5	4000	1.25†	11.40	8.75
2N5583‡	TO-39	100	10	1300	5.0	6.35	4.90*
						1-24	25-99
2N5835	TO-72	10	6	2500	6.8	$13.00	$11.50
2N5836	TO-46	50	6	2000	3.5	13.40	11.85
2N5837	TO-46	100	3	1700	5.0	14.30	12.65

*JAN and JANTX types available. †C_{ob}. ‡PNP; all others NPN. *100–499 quantity.

RF WIDEBAND AMPLIFIER MODULES

In Case 270-01 (not illustrated).

Motorola Type	Max. NF dB	Output Level* dB/mV	Freq. MHz	Min. G_p dB	Maximum IMD dB	P_D W	Net Each, Lots of 1-24	25-99
MHW559	7.5	47/21	40–300	15	−69	5.0	$53.50	$47.25
MHW560	8.5	44/21		14.5	−62	5.0	43.00	39.00
MHW561	12	50/21		14	−69	6.0	50.00	44.50
MHW562	10	47/21		14	−69	6.0	57.00	50.50

*N-channel.

UHF POWER MODULES

In Case 700-01 (not illustrated).

Motorola Type	Min. P_{out} W	Frequency Range, MHz	Minimum G_p dB	N %	Net Each, Lots of 1-24	25-99
MHW710-1	13	400–440	19.4	35	$48.00	$42.50
MHW710-2	13	440–470	19.4	35	48.00	42.50

SILICON TRANSISTORS

DARLINGTON AMPLIFIERS (CASE 20)

BV_{CEO} values given are minimum.

Motorola Type	BV_{CEO} V	Max. I_C mA	h_{FE} at I_C Min.	mA	Max. C_{ob} pF	Typ. f_T MHz	Net Ea., Lots 1-99	100-999
2N998	60	500	1600	10	30	200	$3.00	$2.00
2N2723	60	40	2000	10	10	150	5.65	3.25
2N2785	40	200	1200	10	30	150	11.25	7.50
2N4974*	30	1000	15000	500	8	200	9.00	6.00
2N4975*	30	1000	5000	500	8	200	7.50	5.00

*PNP, Case 34; all other types NPN.

UNIJUNCTION TRANSISTORS—UJT

Motorola Type	Case	Intrinsic Standoff Ratio	Max. I_P μA	Min. I_V mA	Max. P_D mW	Net Ea., Lots 1-99	100-999
MU10	29	0.50–0.85	5.0	1.0	300	$0.40	$0.30
MU20	22	0.56–0.85	2.0	1.0	300	.50	.35
MU851	28	0.56–0.75	2.0	0.1	200	3.45	2.30
MU852	28	0.70–0.85	2.0	0.1	200	4.65	3.10
MU853	28	0.70–0.85	0.4	0.05	200	8.15	5.45
2N2646	22	0.56–0.75	5.0	4.0	300	1.00	.67
2N2647	22	0.68–0.82	2.0	8.0	300	1.90	1.26
2N3980	22	0.68–0.82	2.0	0.01	360	3.40	2.25
2N4851	22	0.56–0.75	2.0	2.0	300	.97	.65
2N4852	22	0.70–0.85	2.0	4.0	300	.97	.65
2N4853	22	0.70–0.85	0.4	6.0	300	2.25	1.50
2N4870	29	0.56–0.75	5.0	2.0	300	.75	.50
2N4871	29	0.70–0.85	5.0	4.0	300	.68	.45
MU4891	29	0.55–0.82	5.0	2.0	300	.90	.60
MU4892	29	0.51–0.69	2.0	2.0	300	1.15	.77
MU4893	29	0.55–0.82	2.0	2.0	300	.96	.64
MU4894	29	0.74–0.86	1.0	2.0	300	1.05	.70
2N4948*	22	0.55–0.82	2.0	2.0	360	.85	.57
2N4949*	22	0.74–0.86	1.0	2.0	360	2.40	1.60
2N5431†	22	0.72–0.80	0.4	2.0	300	3.50	2.35
2N6114‡	22	0.58–0.62	5.0	1.0	300	4.85	3.25
2N6115‡	22	0.58–0.62	15.0	1.0	300	2.05	1.35

*JAN and JANTX types available. †JAN type available. ‡Complementary UJT.

PROGRAMMABLE UNIJUNCTION TRANSISTORS—PUT

I_P and I_V at $R_G = 1$ meg. $V_O = 6.0$ V min. $V_F = 1.5$ V at $I_F = 50$ mA. $t_r = 80$ nsec. $T_J = -50°$ C to $+100°$ C except as otherwise noted.

Motorola Type	Case	Maximum I_P μA	I_V μA	P_D mW	I_T (pulse) A	Net Ea., Lots 1-99	100-999
MPU131	29	2.0	50	375	2.0	$0.71	$0.47
MPU132	29	0.3	50	375	2.0	.84	.53
MPU133	29	0.15	25	375	2.0	.90	.58
2N6027	29	2.0	50	375	5.0	.79	.53
MPU6027	29	2.0	50	375	5.0	.73	.49
2N6028	29	0.15	25	375	5.0	1.00	.65
MPU6028	29	0.15	25	375	5.0	.93	.60
2N6116*	22	2.0	50	250	2.0	1.35	.90
2N6117*	22	0.3	50	250	2.0	2.40	1.60
2N6118*	22	0.15	25	250	2.0	2.78	1.85

*$T_J = -50°$ C to $+125°$ C.

MOTOROLA Semiconductors

FIELD EFFECT TRANSISTORS

RF AMPLIFIERS AND MIXERS

Listed in order of decreasing specified test frequency; increasing power gain and noise figure.

N-CHANNEL J FETs DEPLETION

Motorola Type	Case	f_T MHz	Minimum G_{ps} dB	Minimum NF dB	Max. C_{rss} pF	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N4416	20	400	10	4.0	0.8	$2.45	$1.65
MFE2000	20	400	10	4.0	1.0	1.58	1.05
MFE2001	20	400	10	4.0	1.0	1.72	1.15
2N4223	20	200	10	5.0	2.0	1.50	1.00
2N4224	20	200	......	......	2.0	1.65	1.10
2N3823*	20	100	......	2.5	2.0	1.88	1.25
PLASTIC N-CHANNEL J FETs DEPLETION							
2N5486†‡	29	400	10	4.0	1.0	$1.05	$0.70
2N5485†‡	29	400	10	4.0	1.0	1.05	.70
2N5484‡	29	100	16	3.0	1.0	.98	.65
2N5668	29	100	16	2.5	3.0	.90	.61
2N5669	29	100	16	2.5	3.0	.84	.56
2N5670	29	100	16	2.5	3.0	.90	.61
MPF102‡	29	100	......	......	3.0	.60	.40
MPF108	29	100	......	3.0	2.5	.97	.65
MPF820	29	100	......	4.0	3.5	.85	.55
N-CHANNEL MOS FETs DEPLETION/ENHANCEMENT							
MFE3005	20	400	10	4.5	0.2	$6.75	$4.50
MFE122†	20	244	......	......	0.023§	1.32	.88
MFE3007†	20	200	18	4.0	0.02§	1.65	1.10
MFE3008†	20	200	14#	......	0.02§	1.29	.86
MFE121†	20	200	17	5.0	0.023§	1.40	.93
3N140†	20	200	16	4.5	0.03	1.65	1.10
MFE3004	20	200	16	4.5	0.2	1.80	1.20
MFE120†	20	105	17	5.0	0.023§	1.37	.91
MFE3006	20	100	20	4.5	0.02§	1.50	1.00
PLASTIC N-CHANNEL MOS FETs DEPLETION/ENHANCEMENT							
MPF122†	206	244	......	......	0.023§	$0.67	$0.50
MPF121†	206	200	17	5.0	0.023§	.68	.53
MPF120†	206	105	17	5.0	0.023§	.70	.52

*JAN type available. †Dual gate. ‡Also general purpose amplifier. §Typical. #Conversion gain; output frequency = 30 MHz.

CHOPPERS

Listed in order of decreasing $V_{(BR)GSS}$, increasing $r_{ds(on)}$, then in order of increasing C_{rss} and I_{DSS}.

N-CHANNEL J FETs DEPLETION (CASE 22)

Motorola Type	Min. $V_{(BR)GSS}$ V	Maximum $r_{ds(on)}$ Ohms	Maximum C_{rss} pF	Min. I_{DSS} mA	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N4856A	−40	25	4.0	50	$4.35	$2.90
2N4856	−40	25	8.0	50	3.90	2.60
2N4391	−40	30	3.5	50	4.20	2.80
2N4091	−40	30	5.0	30	3.15	2.10
2N3970	−40	30	6.0	50	4.20	2.80
2N4857A	−40	40	3.5	20	3.90	2.60
2N4857	−40	40	8.0	20	3.30	2.20
2N4092	−40	50	5.0	15	1.85	1.23
2N4392	−40	60	3.5	25	2.85	1.90
2N4858A	−40	60	3.5	8	3.15	2.10
2N3971	−40	60	6.0	25	2.00	1.35
2N4858	−40	60	8.0	8	2.70	1.80
2N4093	−40	80	5.0	8	2.15	1.45
2N4393	−40	100	3.5	5	3.05	2.05
2N3972	−40	100	6.0	5	2.70	1.80
2N4859A	−30	25	4.0	50	4.10	2.75
2N4859	−30	25	8.0	50	3.60	2.40
MFE2006	−30	30	5.0	30	2.70	1.80
2N4860A	−30	40	3.5	20	3.60	2.40
2N4860	−30	40	8.0	20	3.15	2.10
MFE2005	−30	50	5.0	15	1.85	1.25
2N4861A	−30	60	3.5	8	2.85	1.90
2N4861	−30	60	8.0	8	2.60	1.75
MFE2004	−30	80	5.0	8	2.25	1.50
MFE2012	−25	10	20.0	100	6.00	4.00
MFE2011	−25	15	20.0	40	5.25	3.50
MFE2009	−25	20	15.0	50	4.80	3.20
MFE2010	−25	25	20.0	15	4.50	3.00
MFE2008	−25	30	15.0	20	4.20	2.80
MFE2007	−25	40	15.0	8	3.65	2.45
MPF4391#	−30	30	3.5	60	1.42	.95
2N5638#	−30	30	4.0	50	1.20	.80
2N5653#	−30	50	3.5	40	1.35	.90
MPF4392#	−30	60	3.5	25	1.20	.80
2N5639#	−30	60	4.0	25	.95	.63
MPF4393#	−30	100	3.5	5	1.35	.90
2N5654#	−30	100	3.5	15	1.20	.80
2N5640#	−30	100	4.0	5	1.20	.80
2N5555*#	−25	150	1.2	15	1.20	.80
N-CHANNEL MOS FETs ENHANCEMENT (CASE 20)						
MFE3002	±30	100	1.0	10‡	$3.35	$2.25
3N169†§	±25	200	1.3	10‡	6.40	4.25
3N170†§	±25	200	1.3	10‡	5.50	3.65
3N171†§	±25	200	1.3	10‡	4.20	2.80
P-CHANNEL MOS FETs ENHANCEMENT (CASE 20)						
3N155A§	±35	300	1.3	0.25‡	$6.30	$4.20
3N156A§	±35	300	1.3	0.25‡	6.30	4.20
3N155§	±35	600	1.3	1.0‡	3.30	2.20
3N156§	±35	600	1.3	1.0‡	3.30	2.20
MFE3003	±30	200	1.0	10‡	3.00	2.00
MFE3020●	−25	500	1.5	10‡	10.90	6.78
MFE3021●	−25	250	1.5	10‡	13.20	9.00

*High speed, $t_{(on)} = 10$ ns max. †Low $V_{GS(th)}$, high speed. ‡nA max. §Also General Purpose Switch. #Plastic, Case 29; ●Case 642.

GENERAL PURPOSE AMPLIFIERS

Listed in order of increasing gate-source breakdown voltage, decreasing zero-gate voltage drain current, and forward transfer admittance.

N-CHANNEL J FETs DEPLETION

Motorola Type	Case	Min. V#	Minimum-Maximum I_{DSS} mA	Minimum-Maximum y_{fs} µmhos	Net Each, Lots of 1-99	Net Each, Lots of 100-999	Net Each, Lots of 1000-4999
2N4222*	20	30	5.0–15	2500–6000	$ 1.42	$0.92	......
2N4222A*	20	30	5.0–15	2500–6000	1.65	1.10	......
2N5558*	20	30	4.0–10	1500–6500	9.50	7.50	......
2N4221*	20	30	2.0–6.0	2000–5000	1.40	.95	......
2N4221A*	20	30	2.0–6.0	2000–5000	1.65	1.10	......
2N5557*	20	30	2.0–5.0	1500–6500	10.00	8.00	......
2N4220*	20	30	0.5–3.0	1000–4000	1.50	1.00	......
2N4220A*	20	30	0.5–3.0	1000–4000	1.72	1.15	......
2N5556*	20	30	0.5–2.5	1500–6500	12.00	9.50	......
2N5364	20	40	9.0–18	2700–6500	3.95	2.65	......
2N5363	20	40	7.0–14	2500–6000	3.45	2.30	......
2N5362	20	40	4.0–8.0	2000–5500	3.00	2.00	......
2N5361	20	40	2.5–5.0	1500–4500	2.65	1.76	......
2N5360	20	40	1.5–3.0	1400–3200	3.00	2.00	......
2N3365	22	40	0.8–4.0	400–2000	1.35	.90	......
2N5359	20	40	0.8–1.6	1200–3600	3.45	2.30	......
2N5718	20	40	0.8–4.0	500–2000	.80	.53	$0.42
2N5358	20	40	0.5–1.0	1000–3000	3.95	2.65	......
2N3366	22	40	0.2–1.0	250–1000	1.20	.80	......
2N5717	20	40	0.2–1.0	400–1600	.75	.50	.40
2N5716	20	40	0.05–0.25	200–1000	.80	.53	.42
2N3367	22	40	0.05–0.25	100–1000	1.80	1.20	......
3N126†	20	50	3.0–9.0	1200–3600	3.00	2.00	......
2N3822‡	20	50	2.0–10	3000–6500	2.20	1.45	......
3N125†	20	50	1.5–4.5	800–2400	3.00	2.00	......
MFE2095	20	50	1.0–3.0	400–800	2.10	1.40	......
2N3821‡	20	50	0.5–2.5	1500–4500	2.50	1.66	......
MFE2094	20	50	0.4–1.4	350–700	2.10	1.40	......
3N124†	20	50	0.2–2.0	500–2000	3.00	2.00	......
MFE2093	20	50	0.1–0.7	250–500	2.10	1.40	......
PLASTIC N-CHANNEL J FETs DEPLETION							
MPF111	29	20	0.5/20	500 min.	$0.38	$0.25	$0.23
2N5459	29	25	4.0–16	2000–6000	.80	.54	.43
2N5458	29	25	2.0–9.0	1500–5500	.73	.49	.39
MPF112	29	25	1.0–25	1000–7500	.38	.25	.23
2N5457	29	25	1.0–5.0	1000–5000	.80	.54	.43
MPF509	29	25	0.5–24	800–6000	.75	.50	.40
MPF256	29	25	6.0–13	6.0 min.	.80	.53	.43
2N3797	22	±30	2.0–6.0	1500–3000	3.45	2.30	......
MFE3001	20	±30	0.5–6.0	700–3500	2.25	1.50	......
2N3796	22	±30	0.5–3.0	900–1800	3.45	2.30	......
N-CHANNEL MOS FETs DEPLETION/ENHANCEMENT							
3N128	20	−50	5.0–25	5000–12000	$1.35	$0.90	......
P-CHANNEL J FETs DEPLETION							
2N3909A	20	20	1.0–15	2200–5000	$1.72	$1.15	......
2N3909	20	20	0.3–15	1000–5000	1.65	1.10	......
2N3330‡	20	25	0.3–15	1500–3000	3.10	2.05	......
2N3993	20	25	10 min.	6000–12000	3.75	2.50	......
2N3994A	20	25	2.0 min.	5000–10000	6.20	4.15	......
2N3994	20	25	2.0 min.	4000–10000	3.35	2.25	......
MFE4012	20	40	7.0–14	2500–5000	3.20	2.15	......
MFE4011	20	40	4.0–8.0	2200–4500	2.90	1.95	......
2N5476	20	40	0.8–2.0	260–650	2.00	1.35	......
MFE4008	20	40	0.8–1.6	1000–3000	3.20	2.15	......
MFE4007	20	40	0.5–1.0	900–2700	4.05	2.70	......
2N5475	20	40	0.4–1.0	200–500	1.80	1.20	......
2N5474	20	40	0.2–0.5	160–400	2.00	1.35	......
2N5473	20	40	0.1–0.25	120–300	2.15	1.45	......
2N5472	20	40	0.05–0.12	90–225	2.33	1.55	......
2N5471	20	40	0.02–0.06	60–180	2.55	1.70	......
2N5270	20	60	7.0–14	2500–5000	3.75	2.50	......
2N5269	20	60	4.0–8.0	2200–4500	3.45	2.30	......
2N5268	20	60	2.5–5.0	2000–4000	3.30	2.20	......
2N5267	20	60	1.5–3.0	1500–3500	3.45	2.30	......
2N5266	20	60	0.8–1.6	1000–3000	3.75	2.50	......
2N5265	20	60	0.5–1.0	900–2700	4.65	3.10	......
PLASTIC P-CHANNEL J FETs DEPLETION							
2N4360	29	20	3.0–30	2000–8000	$0.63	$0.42	......
2N4342	29	25	4.0–12	2000–6000	1.12	.75	......
2N5462	29	40	4.0–16	2000–6000	.90	.60	$0.48
2N5460	29	40	1.0–5	1000–4000	.90	.60	.48
2N5800	29	40	0.7–2.0	250–700	.98	.65	.56
MPF161	29	40	0.5–14	800–6000	.67	.45	.36
2N5799	29	40	0.25–1.0	160–500	.90	.60	.51
2N5798	29	40	0.08–0.4	100–400	.83	.55	.47
2N5797	29	40	0.02–0.1	60–225	.75	.50	.43
2N5465	29	60	4.0–16	2000–6000	1.35	.90	.72
2N5464	29	60	2.0–9.0	1500–5000	1.08	.72	.58
2N5463	29	60	1.0–5.0	1000–4000	1.35	.90	.72
P-CHANNEL MOS FETs ENHANCEMENT							
3N157	20	±35	1.0 max.§	1000–4000	$3.30	$2.20	......
3N158	20	±35	1.0 max.§	1000–4000	3.30	2.20	......
3N157A	20	±50	0.25 max.§	1000–4000	6.30	4.20	......
3N158A	20	±50	0.25 max.§	1000–4000	6.30	4.20	......
PLASTIC P-CHANNEL MOS FETs EHNANCEMENT							
2N4066	642	±30	1.0 max.§	1500 min.	$17.00	11.30	......
2N4067	642	±30	1.0 max.§	2500 min.	22.00	15.00	......
MFE5000	605	±40	10 max.§	2000–8000	22.50	15.00	......

*Also General-Purpose Switches. †Tetrode connected; also General-Purpose Switches. ‡JAN type available. §nADB. #$V_{(BR)GSS}$.

MOTOROLA Semiconductors

MICROWAVE DEVICES, TRANSISTORS AND DIODES

FREQUENCY MULTIPLIER DIODES

BV_R at $I_R = 10\ \mu A$; R_S at $V_R = 6.0$ V. f = 50 MHz; C_T at $V_R = 6.0$ V, f = 1.0 MHz.

Motorola Type	Case	Max. P_D W	Min. BV_R V	Typ. R_S Ohms	Min.-Max. C_T pF	Net Ea., Lots of 1-24	25-99
1N4387	44	20	150	0.4	35 max.	**$29.10**	**$25.30**
1N4388	51	10	100	0.25	20 max.	**29.10**	**25.30**
1N5149	47	10	80	0.25	5.0–20	**23.90**	**18.40**
1N5150	47	14	80	0.25	5.0–20	**29.10**	**25.30**
1N5150A	47	21	80	0.25	10.8–13.2	**33.00**	**28.75**
1N5151	48	5.5	75	0.5	5.0–7.5	**29.10**	**25.30**
1N5152	46	5.5	75	0.5	5.0–25	**29.10**	**25.30**
1N5153	47	5.5	75	0.5	5.0–7.5	**29.10**	**25.30**
1N5153A	47	8.4	75	0.5	5.4–6.6	**33.00**	**28.75**
1N5154	48	3.5	35	0.9	1.0–3.0	**29.10**	**25.30**
1N5155	46	3.5	35	0.9	1.0–3.0	**29.10**	**25.30**
1N5155A	46	6.2	35	0.9	1.71–2.09	**33.00**	**28.75**
1N5156	48	3.25	20	1.0	0.5–1.0	**33.00**	**28.75**
1N5157	46	3.25	20	1.0	0.5–1.0	**33.00**	**28.75**
MV1809C	47	9.0	75	0.25	9.6–14.4	**29.10**	**25.30**

DUAL EPICAP TUNING DIODE

C_T diode capacitance at $V_R = 3.0$ V, f = 1.0 MHz. C_R capacitance ratio C_3/C_{30}, f = 1.0 MHz. Q at 3.0 V, 100 MHz.

Motorola Type	Case	C_T Min.	C_T Max.	C_R Min.	C_R Max.	Q Min.	Net Ea., Lots 1-99	100-999
MV104	29	37	42	2.5	2.8	100	**$0.89**	**$0.59**

EPICAP TUNING DIODES

C_T at $V_R = 4.0$ V, f = 1.0 MHz. Q at $V_R = 4.0$ V, f = 50 MHz.

CASE 51

Tolerance (1N5100 Series) ±10%; add suffix **A** for ±5%.

Max. V_R VDC	Motorola Type	Nom. C_T pF	Min. Q	Motorola Type	Nom. C_T pF	Min. Q	Net Ea., Lots of 1-99	100 Up
60	**1N5139, A**	6.8	350	**1N5144, A**	22.0	200	Tol.	Tol.
60	**1N5140, A**	10.0	300	**1N5145, A**	27.0	200	±10%	±10%
60	**1N5141, A**	12.0	300	**1N5146, A**	33.0	200	**$4.65**	**$3.10**
60	**1N5142, A**	15.0	250	**1N5147, A**	39.0	200	±5%	±5%
60	**1N5143, A**	18.0	250	**1N5148, A**	47.0	200	**$6.45**	**$4.30**
30	**MV830**	15.0	30	**MV836**	47.0	15	**1.35**	**.90**
30	**MV831**	18.0	25	**MV837**	56.0	15	**1.35**	**.90**
30	**MV832**	22.0	25	**MV838**	68.0	15	**1.35**	**.90**
30	**MV833**	27.0	25	**MV839**	82.0	10	**1.35**	**.90**
30	**MV834**	33.0	20	**MV840**	100.0	10	**1.35**	**.90**
30	**MV835**	39.0	20	....	.....	.....	**1.35**	**.90**

1N5400 Series: $C_T = \pm 10\%$ pF at $V_R = 4.0$ V, f = 1.0 MHz. Available ±5% C_T (suffix **B**), ±2.0% (suffix **C**). Tuning ratio C_2/C_{30}; Q at 4.0 V, 50 MHz. **MV2100 Series:** Plastic package. Tuning ratio and Q same as 1N5400 Series. **MV2300 Series:** Plastic package. Tuning ratio C_2/C_{20}; Q at 4.0 V, 20 MHz.

	Case 51			Case 182		
Nom. C_T pF	Motorola Type	Tuning Ratio pF	Min. Q	Motorola Type	Tuning Ratio pF	Min. Q
6.8	**1N5461A**	2.7–3.1	600	**MV2101**	2.5–3.2	450
8.2	**1N5462A**	2.8–3.1	600	**MV2102**	2.5–3.2	450
10	**1N5463A**	2.8–3.1	550	**MV2103**	2.5–3.2	400
12	**1N5464A**	2.8–3.1	550	**MV2104**	2.5–3.2	400
15	**1N5465A**	2.8–3.1	550	**MV2105**	2.5–3.2	400
18	**1N5466A**	2.9–3.1	500	**MV2106**	2.5–3.2	350
20	**1N5467A**	2.9–3.1	500	....	....	.....
22	**1N5468A**	2.9–3.2	500	**MV2107**	2.5–3.2	350
27	**1N5469A**	2.9–3.2	500	**MV2108**	2.5–3.2	300
33	**1N5470A**	2.9–3.2	500	**MV2109**	2.5–3.2	200
39	**1N5471A**	2.9–3.2	450	**MV2110**	2.5–3.2	150
47	**1N5472A**	2.9–3.2	400	**MV2111**	2.5–3.2	150
56	**1N5473A**	2.9–3.3	300	**MV2112**	2.6–3.3	150
68	**1N5474A**	2.9–3.3	250	**MV2113**	2.6–3.3	150
82	**1N5475A**	2.9–3.3	225	**MV2114**	2.6–3.3	100
100	**1N5476A**	2.9–3.3	200	**MV2115**	2.6–3.3	100
120	....	....	.....	**MV2301**	2.3 min.	250
150	....	....	.....	**MV2302**	2.3 min.	250
180	....	....	.....	**MV2303**	2.3 min.	200
200	....	....	.....	**MV2304**	2.3 min.	200
220	....	....	.....	**MV2305**	2.3 min.	150
250	....	....	.....	**MV2306**	2.3 min.	150
270	....	....	.....	**MV2307**	2.3 min.	100
330	....	....	.....	**MV2308**	2.3 min.	100

Motorola Type	Net Each 1-99	100-999	Motorola Type	Net Each 1-99	100-999
1N5461A–1N5476A	**$ 6.75**	**$4.50**	**MV2101–MV2115**	**$0.90**	**$0.60**
1N5461B–1N5476B	**8.70**	**5.80**	**MV2301–MV2308**	**1.50**	**.95**
1N5461C–1N5476C	**12.00**	**8.00**			

PLASTIC HOT-CARRIER DIODES

Ideal for VHF and UHF mixer and detector applications.

Motorola Type	Case	$V_{(BR)R}$ Min.	Maximum C_T pF	Maximum V_F	Net Each, Lots of 1-99	100-999	1000-4999
MBD101	182	4.0	1.0	0.6	**$0.89**	**$0.59**	**$0.41**
MBD102	226	4.0	1.0	0.6	**.98**	**.65**	**.45**
MBD501	182	50	1.0	1.2	**.94**	**.65**	**.49**
MBD502	226	50	1.0	1.2	**1.06**	**.71**	**.54**
MBD701	182	70	1.0	1.2	**.99**	**.70**	**.53**
MBD702	226	70	1.0	1.2	**1.16**	**.77**	**.58**
MBI101	166	4.0	1.0	0.6	**.99**	**.67**	......

PIN SWITCHING DIODES

L_S at f = 250 MHz. C_C at f = 1.0 MHz.

Motorola Type	Case	$V_{(BR)R}$ Volts Min.	R_S Ohms Min.	Typical L_S nH	Typical C_C pF	Net Ea., Lots 1-99	100-999*
MPN3401	226	35	0.7	3.0	0.1	**$0.52**	**$0.35**
MPN3402	226	35	0.6	3.0	0.1	**.52**	**.35**

*Larger quantity prices on request.

NPN-PNP MICRO-T PLASTIC TRANSISTORS (CASE 28)

Micro-T package 0.085″ dia. injection-molded plastic package for applications requiring high component mounting density. More detailed information available on request.

GENERAL-PURPOSE AMPLIFIER AND SWITCHING

Motorola Type	Max. V_{CEO} V	h_{FE} at I_C Min.	h_{FE} at I_C mA	Min. f_T MHz	Typ. t_s at I_C nsec	Typ. t_s at I_C mA	Net Ea., Lots 1-99	100-999
MMT75*	20	50	10	.....	140	10	**$ 0.69**	**$ 0.46**
MMT76	20	50	10	.....	125	10	**.59**	**.39**
MMT2222	30	100	150	200	160†	150	**1.43**	**.95**
MMCM2222•	30	100	150	200	160†	150	**7.50**	**5.80**
MMT2907*	40	100	150	200	150‡	150	**1.73**	**1.15**
MMCM2907*•	40	100	150	200	150‡	150	**7.65**	**5.85**
MMT3903	40	50	10	250	125	10	**1.35**	**.90**
MMT3904	40	100	10	300	125	10	**1.50**	**1.00**
MMT3905*	40	50	10	200	140	10	**1.35**	**.90**
MMT3906*	40	100	10	250	140	10	**1.50**	**1.00**

HIGH-SPEED SATURATED SWITCHING

MMT72	10	30	10	400	20#	10	**$ 0.75**	**$ 0.49**
MMT73*	3	30	10	400	30#	10	**.75**	**.49**
MMT806§	5	50	0.1	1200	1.0	1.0	**19.50**	**13.00**
MMT808*§	5	50	0.1	1200	1.0	1.0	**22.50**	**15.00**
MMT2369	15	40	10	500	12▲	10	**1.65**	**1.10**
MMCM2369•	15	40	10	500	12▲	10	**7.40**	**5.70**
MMT3014	20	50	30	350	25†	30	**2.28**	**1.52**
MMT3546*	12	30	10	700	20	50	**5.15**	**3.45**
MMT3960A§	8	30	10	1600	1.1	20	**10.35**	**6.90**
MMT3960§	3	100	10	1600	......	......	**4.85**	**3.25**

*PNP; all other types NPN. †t_{off}; t_{on} = 16 ns. ‡t_{off}; t_{on} = 20 nsec. §Non-saturated. #t_{on}; t_{off} = 30 nsec. •Case 176. ▲t_{on}; t_{off} = 18 nsec.

LOW NOISE AMPLIFIER

f_T at $I_C = 500\ \mu A$.

Motorola Type	Max. V_{CEO} V	h_{FE} at I_C Min.	h_{FE} at I_C mA	Min. f_T MHz	Max. NF at I_C dB	Max. NF at I_C µA	Net Ea., Lots 1-99	100-999
MMT70	20	150	2.0	.....	1.0#	10	**$0.53**	**$0.35**
MMT71*	20	150	2.0	.....	1.5#	100	**.65**	**.43**
MMT930	45	150	1.0	60	......	......	**1.13**	**.75**
MMCM930▲	45	150	1.0	60	......	......	**7.38**	**5.70**
MMT2484	60	250	1.0	60	3.0	10	**1.28**	**.85**
MMCM2484▲	60	250	1.0	60	3.0	......	**7.49**	**5.75**
MMT3798*	60	150	0.1	40	3.5	100	**3.75**	**2.50**
MMT3799*	60	300	0.1	40	2.5	100	**3.40**	**2.95**

RF AMPLIFIER AND OSCILLATOR

MMT74	12	25	3.0	700‡	4.0#	1.5	**$ 0.98**	**$ 0.65**
MMT807	5	25	1.0	1200•	2.0#	100	**19.50**	**13.00**
MMT809*	5	25	1.0	1200•	2.6#	100	**22.50**	**15.00**
MMT918	15	20	3.0	600†	6.0	1.0§	**1.65**	**1.10**
MMCM918▲	15	20	3.0	600†	6.0	1.0§	**7.18**	**5.50**
MMT2857	15	30	3.0	1000‡	3.8#	1.5§	**5.45**	**3.65**
MMT8015	10	25	1.0	1000■	4.0	1.0§	**0.00**	**0.00**

*PNP; all other types NPN. †At I_C = 10 mA. ‡At I_C = 4.0 mA. §mA. #Typical. •At I_C = 1.0 mA. ▲Case 176. ■At I_C = 6 mA.

N-CHANNEL J FET

Motorola Type	Minimum $V_{(BR)GSS}$ V	Minimum I_{DSS} mA	Typical C_{iss} pF	Typical $Re(y_{is})$ µmhos	Typical NF at f dB	Typical NF at f MHz	Net Each 1-99	100-999
MMT3823	−30	5.0	4.0	500	2.0	100	**$2.60**	**$1.75**

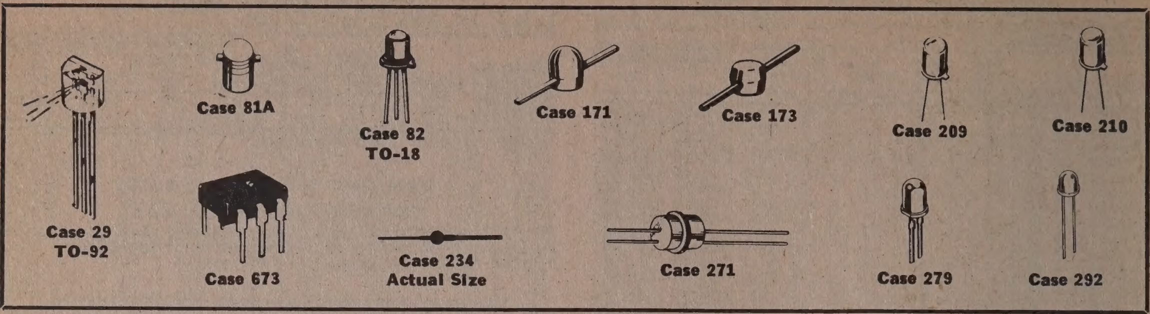
MICRO-T SWITCHING DIODES (CASE 28)

Same construction as above Micro-T transistors.

Motorola Type	Min. $V_{(BR)}$ at $I_{(BR)}$ V	Min. $V_{(BR)}$ at $I_{(BR)}$ µA	V_F at I_F V	V_F at I_F mA	Max. t_{rr} ns	Net Ea., Lots 1-99	100-999
MMD70*	50	100	0.75/1.2	100	15	**$0.35**	**$0.23**
MMD6050*	70	100	0.55/0.7	1.0	5.0	**.68**	**.45**
MMD6100†	70	100	0.55/0.7	1.0	5.0	**.90**	**.60**
MMD6150‡	70	100	0.55/0.7	1.0	5.0	**2.40**	**1.60**
MMD7000§	70	100	0.55/0.7	1.0	5.0	**2.55**	**1.70**
MMD7001§	45	10	1.05 max.	300	3.2#	**2.66**	**1.78**

*Single diode; Case 166. †Dual common cathode. ‡Dual common anode. §Dual Series. #Typical.

SEE OTHER PAGES FOR CASE ILLUSTRATIONS



OPTOELECTRONIC DEVICES

LIGHT EMITTING DIODES

Visible red (660 nM typ. peak emission wavelength) gallium arsenide phosphide emitters for use in panel and circuit indicators, light modulators, alphanumeric displays and film annotation. Diffusing red lens except MLED50, MLED600, MLED610 and MLED640 are clear red lens.

Motorola Type	Case	Brightness at I_F fL (Typ.)	Brightness at I_F mA	Forward Voltage V_F (Typ.)	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MLED50	234	750	20	1.6	$0.59	$0.39
MLED55	234	750	2	1.6	.59	.39
MLED455	292	1.2*	20	1.6	.54	.35
MLED500	29	0.3*	20	1.6	.32	.19
MLED600	171	1100	50	1.6	1.27	.85
MLED610	81A	1100	50	1.6	3.90	2.60
MLED650	279	....	......	1.6	.50	.37
MLED640	279	2.0*	20	1.6	.59	.39
MLED650	279	....	......	1.6	.50	.37
MLED655	279	2.0*	20	1.6	.59	.39

*Typ. Io value, mcd.

Same as above except visible green diffusing lens; 560 nM typ. peak emission wavelength.

Motorola Type	Case	Io at I_F Typ. mcd	Io at I_F mA	Forward Voltage V_F (Typ.)	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MLED50	279	0.5*	25	2.1	$1.49	$0.99

*Typ. Io value, mcd.

INFRARED EMITTING DIODES

Infrared (900 nM typ. peak emission wavelength) gallium arsenide emitters provide high power output in light modulators, shaft or position encoders, punched card and tape readers, optical switching and logic circuits. They are spectrally matched for use with silicon detectors.

Motorola Type	Case	Power Output at I_F μW (Typ.)	Power Output at I_F mA	Forward Voltage V_F(Typ.)	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MLED60	234	550	50	1.2	$0.62	$0.49
MLED92	29	150	50	1.2	.38	.31
MLED90	234	350	50	1.2	.58	.45
MLED900	171	550	50	1.2	.85	.69
MLED910	81A	150	50	1.2	3.60	2.40
MLED930	209	650	100	1.2	3.50	2.30

COUPLERS (CASE 673)

Gallium arsenide LEDs optically coupled to silicon phototransistors and designed for applications requiring electrical isolation, high current transfer ratios, small package size and low cost. DC current transfer ratio at $V_{CE}=10$ V and $I_C=10$ mA.

Motorola Type	DC Current Transfer Ratio % Min.	DC Current Transfer Ratio % Typ.	Inspection VDC	Typ. $t_s = t_r + t_f$ μs	Freq. Resp. kHz	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MOC1000	20	60	1500	5.6	300	$2.60	$1.75
MOC1001	20	60	2500	5.6	300	2.95	1.95
MOC1002	10	30	1500	5.6	300	2.25	1.50
MOC1003	10	30	500	5.6	300	1.50	.99
MOC1100	100	......	1500	20	10	2.95	1.95
MOC1200	100	100	1500	15.6	30	2.60	1.75
MOC2000*	......	......	1500	5.6	300	4.75	3.10

*Case 271; collector light current = 0.5 mA min. at $V_{CE}=5.0$ V and $I_F=15$ mA.

AS NEW MOTOROLA TYPES ARE DEVELOPED WE WILL HAVE THEM IN STOCK FOR IMMEDIATE DELIVERY

PIN SILICON PHOTODIODES

Designed for application in laser detection, light demodulation, detection of radiation from visible and near infrared LEDs, shaft or position encoders, switching and logic circuits or any design requiring radiation sensitivity and stable characteristics. High speed devices with response time of less than 1.0 ns typical. Dark current = 2.0 nA max. at $V_R=20$ V; response time = 1.0 ns typ.

Motorola Type	Case	Lens	H = 2.0 mW/cm^2 Sensitivity μA/mW/cm^2	H = 2.0 mW/cm^2 Light Current	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MRD500	209	Convex	1.2 min.	6.0 μA min.	$10.90	$7.25
MRD510	210	Flat	0.3 min.	1.5 μA min.	9.90	6.60

NPN SILICON PHOTOTRANSISTORS

H is radiation flux density emitted from a tungsten source at 2870 K.

HIGH DENSITY PHOTOTRANSISTORS

Subminiature NPN silicon phototransistors designed for use in card and tape readers, pattern and character recognition equipment, shaft encoders or any design requiring radiation sensitivity, stable characteristics and high stability. Light current at H = 20 mW/cm^2.

Motorola Type	Case	Min. Light Current mA	Max. Dark Current nA	Typ. t_s μs	Net Each, Lots of 1-99	Net Each, Lots of 100-999
MRD150	173	0.2*	100†	6.5‡	$1.20	$0.80
MRD601	81A	0.5	25	4.8	3.45	2.30
MRD602	81A	2.0	25	4.8	3.60	2.40
MRD603	81A	4.0	25	4.8	3.80	2.60
MRD604	81A	7.0	25	4.8	4.10	2.75

*At H = 5.0 mW/cm^2; sensitivity = 0.04 mA/mW/cm^2 at H = 5.0 mW/cm^2. †$V_{CC}=20$ V; all others $V_{CC}=30$ V. ‡Maximum.

LOW DENSITY PHOTOTRANSISTORS

NPN silicon phototransistors designed for use in industrial inspection, processing and control systems, counters, sorters, switching and logic circuits or any design requiring radiation sensitivity, stable characteristics and moderate mounting density in arrays or single device applications. Sensitivity and light current at H = 5.0 mW/cm^2; dark current at $V_{CC}=20$ V.

Motorola Type	Case	Sensitivity mA/mW/cm^5 Min.	Dark Current nA Max.	Light Current mA Min.	Net Ea., Lots 1-99	Net Ea., Lots 100-999
MRD300*	82	0.8	25	4.0	$2.50	$1.75
MRD310*	82	0.2	25	1.0	2.25	1.50
MRD450*	171	0.2	100	1.0	1.13	.75
MRD810†	210	0.2	50	1.0	6.00	4.00
MRD3050‡	82	0.02	100	0.1	1.20	.80
MRD3051‡	82	0.04	100	0.2	1.35	.90
MRD3052‡	82	0.02 –0.08	100	.1–.4	1.80	1.20
MRD3053‡	82	0.05 –0.2	100	.25–1	1.80	1.20
MRD3054‡	82	0.125–0.5	100	.625–2.5	1.95	1.30
MRD3055‡	82	0.3	100	1.5	1.45	.95
MRD3056‡	82	0.4	100	2.0	1.65	1.10

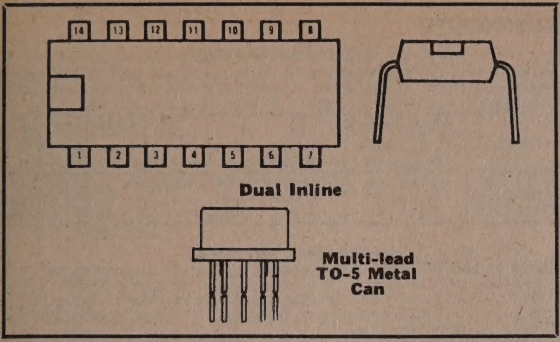
*Maximum Switching Time: 6.5 μs; †11 μs; ‡5.5 μs typical.

SILICON PHOTO DARLINGTON AMPLIFIERS

Designed for use where extremely high sensitivity is required. Plastic side reading devices are the most economical detectors available. Sensitivity and light current at H = 2.0 mW/cm^2; dark current at H = 0. Switching time, 400 μsec.

Motorola Type	Case	Sensitivity mA/mW/cm^2 Typ.	Dark Current nA Max.	Light Current mA Typ.	Net Ea., Lots 1-99	Net Ea., Lots 100-999
2N5777	29	2.0	100	4.0	$0.60	$0.50
2N5778	29	2.0	100	4.0	.70	.55
2N5779	29	4.0	100	8.0	1.00	.70
2N5780	29	4.0	100	8.0	1.20	.80
MRD14B	29	1.0	100	2.0	.55	.40

National Semiconductor IC's



SERIES 54/74 DIGITAL TTL GATES

Temperature Range −55° C to +125° C (DM5400 and DM7000 Series); 0° C to +70° C (DM7400 and DM8000 Series). Package Suffix: **J**, ceramic dual inline; **N**, molded dual inline; ceramic flat pack (all Series) and **J** package (DM7400 and DM8000 Series) also available. V_{CC} range = 4.5 V–5.5 V (DM7400 and DM8000, 4.75–5.25 V). Typ. noise immunity = 1 V; 400 mV guaranteed.

NSC Type	Description	Maximum t_{pd}, ns "0"	Maximum t_{pd}, ns "1"	Fan-out	Net Each, Lots of 1-24	25-99	100 Up
DM5400J	Quad	15	25	10	$3.27	$2.61	$2.02
DM5400N	2-input	15	25	10	2.30	1.80	1.45
DM7400N	NAND	15	25	10	.55	.44	.35
DM5401J	Quad	15	45	......	3.27	2.61	2.02
DM5401N	2-input	15	45	......	2.30	1.80	1.45
DM7401N	NAND*	15	45	......	.55	.44	.35
DM5402J	Quad	15	22	10	3.27	2.61	2.02
DM5402N	2-input	15	22	10	2.65	2.10	1.70
DM7402N	NOR	15	22	10	.55	.44	.35
DM5403J	Quad	15	45	......	3.27	2.61	2.02
DM5403N	2-input	15	45	......	2.30	1.80	1.45
DM7403N	NAND*	15	45	......	.55	.44	.35
DM5404J	Hex	15	22	10	4.04	3.22	2.50
DM5404N	inverter	15	22	10	2.90	2.30	1.85
DM7404N		15	22	10	.70	.56	.43
DM5405J	Hex	15	45	......	4.04	3.22	2.50
DM5405N	inverter*	15	45	......	2.90	2.30	1.85
DM7405N		15	45	......	.70	.56	.43
DM5408J	Quad	......	......	......	3.53	2.82	2.18
DM5408N	2-input	......	......	......	2.50	2.00	1.70
DM7408N	AND	......	......	......	.60	.48	.37
DM5409J	Quad	......	......	......	3.53	2.82	2.18
DM5409N	2-input	......	......	......	2.50	2.00	1.70
DM7409N	AND*	......	......	......	.60	.48	.37
DM5410J	Triple	15	25	10	3.27	2.67	2.02
DM5410N	3-input	15	25	10	2.30	1.80	1.45
DM7410N	NAND	15	25	10	.55	.44	.35
DM5411J	Triple	......	......	......	3.53	2.82	2.18
DM5411N	3-input	......	......	......	2.50	2.00	1.70
DM7411N	AND	......	......	......	.60	.48	.37
DM5420J	Dual	15	25	10	3.27	2.61	2.02
DM5420N	4-input	15	25	10	1.90	1.55	1.20
DM7420N	NAND	15	25	10	.55	.44	.35
DM5430J	8-input	15	29	10	3.27	2.61	2.02
DM5430N	NAND	15	29	10	1.90	1.55	1.20
DM7430N	gate	15	29	10	.55	.44	.35
DM5440J	Dual 4-inp.	15	25	30	3.27	2.61	2.02
DM5440N	NAND	15	25	30	2.65	2.10	1.70
DM7440N	buffer	15	25	30	.55	.44	.35
DM5450J	Expandable	15	25	10	3.27	2.61	2.02
DM5450N	AND-OR-	15	25	10	2.30	1.80	1.45
DM7450N	INVERT†	15	25	10	.55	.44	.35
DM5451J	Dual	15	25	10	3.27	2.61	2.02
DM5451N	AND-OR-	15	25	10	2.30	1.80	1.45
DM7451N	INVERT†	15	25	10	.55	.44	.35
DM5453J	Expandable	15	25	10	3.27	2.61	2.02
DM5453N	AND-OR-	15	25	10	2.30	1.80	1.45
DM7453N	INVERT‡	15	25	10	.55	.44	.35
DM5454J	AND-OR-	15	25	10	3.27	2.61	2.02
DM5454N	INVERT	15	25	10	2.30	1.80	1.45
DM7454N	gate‡	15	25	10	.55	.44	.35
DM5460J	Dual	......	......	10	3.27	2.61	2.02
DM5460N	4-input	......	......	10	1.70	1.35	1.10
DM7460N	expander	......	......	10	.55	.44	.35
DM5486J	Quad 2-inp.	20	30	10	4.19	3.34	2.59
DM5486N	exclusive-	20	30	10	4.00	3.20	2.50
DM7486N	OR gate	20	30	10	.90	.72	.56
DM7090J	NAND	......	......	10	6.75	5.40	4.50
DM7090N	hex	......	......	10	2.91	2.32	1.97
DM8090N	inverter§	......	......	10	1.20	.96	.80
DM7091J	Quad 2-inp.	......	......	30	6.75	5.40	4.50
DM7091N	NAND	......	......	30	2.91	2.32	1.97
DM8091N	buffer	......	......	30	1.20	.96	.80
DM7092J	Dual 5-input	......	......	......	6.75	5.40	4.50
DM7092N	NAND	......	......	......	2.91	2.32	1.97
DM8092N		......	......	......	1.20	.96	.80
DM7426J	Quad 2-inp.	......	......	......	1.59	1.26	.98
DM7426N	high V NAND#				.90	.72	.56

*Open collector. †Dual 2-wide 2-input. ‡4-wide 2-input. §Quad inverter/dual 2-input NAND gate. #Interface.

SERIES 54/74 DIGITAL TTL FLIP-FLOPS

Temperature Range −55° C to +125° C (DM5400 Series); 0° C to +70° C (DM7400 Series). Package Suffix: **J**, ceramic dual inline; **N**, molded dual inline; ceramic flat pack also available. V_{CC} range = 4.5–5.5 V (DM5400 Series); 4.75–5.25 (DM7400 Series). Maximum t_{pd1} = 30 ns; t_{pd0} = 30 ns. Fan-out = 10.

NSC Type	Description	Typ. Pwr. mA	P_D mW/ff	Toggle Freq. MHz	Net Each, Lots of 1-24	25-99	100 Up
DM5472J	J-K	9	......	27	$4.30	$3.43	$2.66
DM5472N	master/	9	......	27	3.00	2.40	1.90
DM7472N	slave	9	......	27	.78	.62	.48
DM5473J	Dual J-K	9	45	25	5.82	4.64	3.60
DM5473N	master/	9	45	25	5.00	4.00	3.20
DM7473N	slave*	9	45	25	.88	.70	.54
DM5474J	Dual	8.2	......	25	5.82	4.64	3.60
DM5474N	D type	8.2	......	25	4.50	3.60	2.90
DM7474N		8.2	......	25	.88	.70	.54
DM5476J	Dual J-K	9	45	25	6.40	5.10	3.96
DM5476N	master/	9	45	25	5.50	4.40	3.50
DM7476N	slave†	9	45	25	1.05	.84	.64
DM74107N	Dual J-K master/ slave*	9	45	25	.88	.70	.54

*Asynchronous Clear inputs. †Preset and Clear inputs.

HYBRID DIGITAL TTL CIRCUITS

Temperature Range −55° C to +125° C (**C** types, 0° C to +70° C except DH0034C, to +85° C). Package Suffix **H** indicates multi-lead TO-5 metal can; **D** indicates glass-metal dual inline package; **N** indicates molded dual inline package.

HIGH SPEED DUAL LEVEL TRANSLATOR

For interfacing to MOS or junction FET analog switches. Can also be used as universal logic level shifter. High output currents, up to ±100 mA. Low output leakage, typically 0.1 μA.

NSC Type	Supply V Neg.	Supply V Pos.	Max. Output mA	Typical t_{pd0} ns	Typical t_{pd1} ns	Net Each, Lots of 1-24	25-99	100 Up
DH0034D	−30	+25	100	15	35	$32.50	$25.00	$18.00
DH0034H	−30	+25	100	15	35	27.00	21.00	15.00
DH0034CD	−30	+25	100	15	35	9.75	8.75	7.50
DH0034CH	−30	+25	100	15	35	9.00	8.00	6.95
DH0034D/883	−30	+25	100	15	35	37.50	29.50	22.00
DH0034H/883	−30	+25	100	15	35	32.00	25.50	19.00

HIGH VOLTAGE, HIGH CURRENT DRIVERS

Accept standard DTL or TTL logic levels; dual AND inputs and EXPANDER connection for additional gating. NH0006/C drives load up to 400 mA at 28 volts. NH0008/C provides pulsed load up to 3 amps from continuous supply voltage up to 4.5 V. NH0011 provides 250 mA output; NH0011C/CN provides 150 mA output. NH0016CN provides 250 mA output at 70 V max. standoff; NH0017CN, 500 mA at 50 V; NH0018CN, 500 mA at 100 V.

NSC Type	Output V Min. "1"	Supply V	Typical T_{on} μsec	Typical T_{off} μsec	Net Each, Lots of 1-24	25-99	100 Up
DH0006H	26.5‡	45	0.26	2.2	$27.00	$21.00	$15.00
DH0006H/883	26.5‡	45	0.26	2.2	32.00	25.50	19.00
DH0006CH	26.5‡	45	0.26	2.2	6.00	5.25	4.50
DH0006CN	26.5‡	45	0.26	2.2	5.25	4.50	3.95
DH0008H	43§	45	0.4	7.0	36.00	28.00	20.00
DH0008H/883	43§	45	0.4	7.0	41.00	32.50	24.00
DH0008CH	43§	45	0.4	7.0	7.25	6.25	5.50
DH0008CN	43§	45	0.4	7.0	6.50	5.75	4.95
DH0011H	....	800†	0.16*	0.22*	16.50	13.40	9.40
DH0011CH	....	800†	0.16*	0.22*	7.50	6.00	5.25
DH0011CN	....	800†	0.16*	0.22*	5.00	4.10	3.40
DH0016CN	....	455†	0.04	0.45	6.15	4.90	4.10
DH0017CN	....	455†	0.1	1.4	5.65	4.50	3.75
DH0018CN	....	455†	0.1	1.4	9.00	7.20	6.00

*Maximum. †Power dissipation in mW. ‡Max. "0" output: 0.01 volt; §0.1 volt.

HAMMER DRIVER

High current; for a wide variety of printer applications. Capable of driving 6-amp pulsed loads at duty cycles up to 10%. Requires single voltage supply, 10 to 45 V. Low standby power, 45 mW at V_{CC} = 36 V.

NSC Type	Typical Output*, Volts, Logic "1"	Typical Output*, Volts, Logic "0"	Typical T_{on} μsec	Typical T_{off} μsec	Output mA	Net Each, Lots of 1-24	25-99	100 Up
DH0028CH	43.5	.020	0.4	7.0	750	$7.75	$6.75	$5.95
DH0028CN	43.5	.020	0.4	7.0	1000	6.50	5.75	4.95

*At V_{CC} = 45 V.

PIN DIODE DRIVER

High speed switch driver supplies high peak currents needed for diode switching. In 12-lead TO-8.

NSC Type	Voltage Swing	Standby Power	Net Each, Lots of 1-24	25-99	100 Up
DH0035G	12–30 V	30 mW	$85.50	$66.50	$47.50
DH0035CG	12–30 V	30 mW	32.50	28.75	25.00

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DIGITAL TTL/MSI CIRCUITS

Temperature Range −55° C to +125° C except DM7400, DM8200, DM8300, DM8500 and DM8600 Series 0° C to +70° C. Package Suffix: **J**, ceramic dual inline; **N**, molded dual inline; ceramic flat pack (DM5400, DM7200, DM7500, DM8200 Series) and **J** package (DM7400, DM8200 Series) also available. Vcc=4.5–5.5 V except 0° C to +70° C types, 4.75–5.25 V.

DECODERS/DRIVERS

Nixie® driver accepts 4-bit BCD information on inputs, decodes, displays result by driving Nixie tubes connected directly to outputs. BCD to decimal decoder drives standard TTL logic (up to 10 loads per output). BCD to 7-segment drives indicator lamps, logic circuits, discrete active devices. DM74154N performs as a 1-line to 16-line demultiplexer, or decoder of 4-bit input to 1 of 16 outputs (typical t_{pd} = 20 ns).

NSC Type	Description	Fan-out	Net Each, Lots of 1-24	25-99	100 Up
DM5441AJ	BCD to decimal decoder/Nixie driver	.....	$15.00	$12.00	$9.60
DM7441AN		.....	2.40	1.92	1.49
DM5442J	BCD to decimal decoder	10	9.16	7.37	5.67
DM7442N		10	1.90	1.52	1.19
DM7446AN	BCD to 7-segment decoder/driver	12*	3.00	2.40	1.86
DM7447AN		12†	2.80	2.24	1.75
DM7448N		4	2.60	2.08	1.60
DM74154N	Decoder/demultiplex	.....	5.70	4.50	3.50

*Outputs withstand 30 V. †Outputs withstand 15 V.
®Burroughs Corp. trademark.

COUNTER/DIVIDERS

V_{OUT1} = 2.4 V minimum. V_{OUT0} = 0.4 V maximum.

NSC Type	Description	Power Supply mA Typ.	Max.	Input Freq. MHz	Net Each, Lots of 1-24	25-99	100 Up
DM5483J	4-bit binary full adder	58	79	.....	$15.01	$11.97	$ 9.29
DM7483N		58	79	.....	2.70	2.16	1.70
DM5490J	Decade counter	32	45	20	9.25	7.38	5.72
DM5490N		32	45	20	6.00	4.80	3.85
DM7490N		32	45	20	1.60	1.27	.98
DM5492J	Divide-by-12 counter	30	43	20	9.25	7.38	5.72
DM5492N		30	43	20	6.00	4.80	3.85
DM7492N		30	43	20	1.60	1.27	.98
DM5493J	4-bit binary counter	30	43	20	9.25	7.38	5.72
DM5493N		30	43	20	6.00	4.80	3.85
DM7493N		30	43	20	1.60	1.27	.98
DM7280J	Decade counter*	.....	.....	.....	10.02	8.02	6.68
DM8280N		.....	.....	.....	2.50	2.00	1.60
DM7281J	Binary counter*	.....	.....	.....	10.02	8.02	6.68
DM8281N		.....	.....	.....	2.50	2.00	1.60
DM7288J	Divide-by-12 counter*	.....	.....	.....	10.02	8.02	6.68
DM8288N		.....	.....	.....	2.50	2.00	1.60
DM7520J	Modulo-N divider	50	.....	.....	36.70	29.20	25.00
DM8520N		50	.....	.....	11.90	9.55	7.95
DM7560J	Up/down decade counter	50	.....	.....	12.00	9.60	7.90
DM8560N		50	.....	.....	3.90	3.10	2.40
DM7563J	Up/down binary counter	50	.....	.....	12.00	9.60	7.90
DM8563N		50	.....	.....	3.90	3.10	2.40

*Presettable.

SHIFT REGISTERS

NSC Type	Description	Typical t_{pd1} ns	t_{pd0} ns	Clock/Shift MHz	Net Each, Lots of 1-24	25-99	100 Up
DM5495J	4-bit parallel-in/parallel-out*	26	24	35	$12.22	$ 9.74	$7.56
DM7495N		26	24	35	2.15	1.72	1.34
DM5496J	5-bit multi-function	25	25	.....	15.28	12.18	9.45
DM7496N		25	25	.....	2.30	1.84	1.43
DM7570J	8-bit serial-in/parallel-out	28	28	20	9.00	7.20	5.75
DM8570N		28	28	20	3.00	2.40	1.90
DM7590J	8-bit parallel-in/serial-out	26	35	20	9.00	7.20	5.75
DM8590N		26	35	20	3.00	2.40	1.90
DM9300J	4-bit multi-function	.....	.....	25	7.45	6.85	5.95
DM8300N		.....	.....	25	2.20	1.75	1.35

*Right-shift left-shift.

BISTABLE QUAD LATCH

NSC Type	Typical ns t_{pd1}	t_{pd0}	Fan-out	Supply Cur.	Net Each, Lots of 1-24	25-99	100 Up
DM5475J	21	7	10	32 mA	$8.29	$6.61	$5.13
DM5475N	21	7	10	32 mA	5.00	4.00	3.20
DM7475N	21	7	10	32 mA	1.40	1.12	.89

DUAL 4:1 MULTIPLEXER

Operates as dual 4:1 or single 4:2 multiplexer, data selector or parallel-to-serial converter.

NSC Type	Typical t_{pd}	P_D	Fan-out	Net Each, Lots of 1-24	25-99	100 Up
DM74153N	14 ns	170 mW	20	$2.90	$2.30	$1.78

4-BIT COMPARATOR

Accepts two 4-bit numbers and determines whether A is greater than, less than, or equal to B. Strobe input overrides all other conditions. V_{OUT1} = 2.4 V min.; V_{OUT0} = 0.4 V maximum.

NSC Type	Maximum t_{pd0} ns	t_{pd1} ns	Typ. Power Supply	Fan-out	Net Each, Lots of 1-24	25-99	100 Up
DM7200J	30	40	35 mA	10	$26.90	$21.40	$18.30
DM7200N	30	40	35 mA	10	17.80	14.30	11.90
DM8200N	30	40	35 mA	10	8.95	7.15	5.95

DIGITAL SWITCHES

Eight-channel digital switch routes logic state appearing on each of eight inputs to the output by selection on three control lines. DM7211/8211 provides strobe input which when taken to a logical "1" level places output in logical "1" state. Typical power supply current = 20 mA.

NSC Type	Min. V_{OUT1}	Max. V_{OUT0}	Fan-out	Net Each, Lots of 1-24	25-99	100 Up
DM7210J	2.4 V	0.4 V	10	$22.30	$17.65	$15.20
DM8210N	2.4 V	0.4 V	10	11.90	9.50	8.20
DM7211J	2.4 V	0.4 V	10	15.75	12.60	10.50
DM8211N	2.4 V	0.4 V	10	6.90	5.50	4.60

PARITY GENERATOR/CHECKER

Eight bits plus parity input are presented when used as generator. Both odd and even parity can be used. Typical power supply current = 26 mA.

NSC Type	Min. V_{OUT1}	Max. V_{OUT0}	Fan-out	Net Each, Lots of 1-24	25-99	100 Up
DM7220J	2.4 V	0.4 V	10	$19.04	$15.10	$12.80
DM7220N	2.4 V	0.4 V	10	12.60	10.10	8.40
DM8220N	2.4 V	0.4 V	10	6.30	5.05	4.20

RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

Pulse widths from 50 ns upward. Retriggerable; output pulse widths can be extended beyond normal range attainable with just a resistor and capacitor. Supply voltage to ground = −0.5 to +8.0 V. Input voltage = −0.5 to +5.5 V. High speed; input repetition rate greater than 10 MHz.

NSC Type	Typical* V_{OH} V	V_{OL} V	Min.* V_{IH} V	Max.* V_{IL} V	Net Each, Lots of 1-24	25-99	100 Up
DM9601J	3.3	0.2	1.7	0.9	$8.45	$7.75	$6.75
DM9601N	3.3	0.2	1.7	0.9	8.00	6.40	5.10
DM8601N	3.3	0.2	1.7	0.9	1.65	1.30	1.05

*At +25° C.

DIGITAL TTL CIRCUITS

Temperature Range −55° C to +125° C (DM7800 Series); 0° C to +70° C (DM8800 Series). Package Suffix **J** indicates ceramic dual inline package; **N** indicates molded dual inline package; **H** indicates multi-lead TO-5 metal can. Vcc = 4.5–5.5 V (DM7800 Series) or 4.75–5.25 V (DM8800 Series). Other package types available.

LINE RECEIVERS/DRIVERS

Dual circuits designed as interface between TTL or DTL systems when the two sections are located some distance from each other. Single 5-volt power supplies; differential transmission; common mode rejection; strobe capability; internal termination. DM7820/8820 has ±20 V common-mode, 8.0 V strobe, ±15 V input voltage range. DM7822/8822 meets requirements of EIA spec. RS232 Revision B. DM8830 dual differential line driver also performs dual 4-input NAND or AND function.

NSC Type	Description	Input V	Output Sink	P_D mW	Net Each, Lots of 1-24	25-99	100 Up
DM7820AJ	Dual line receiver	±20	50 mA	600	$30.00	$24.00	$20.00
DM8820AN		±20	50 mA	600	9.00	7.20	5.98
DM7822J	Dual line receiver	±30	25 mA	600	22.50	18.00	15.00
DM8822N		±30	25 mA	600	7.80	6.25	5.20
DM8830N	Dual driver	5.5	.....	.....	6.00	4.80	4.00

INTERFACE GATES

DM7800/8800 interface between TTL or DTL logic levels and a wide variety of junction or MOS FET type devices. Maximum output swing = 31 V. V_3-V_2 differential = 40 V. P_D = 1 mW. Other types have open-collector outputs which may be "pulled-up" to +14 V in logical "1" state for guaranteed interface between TTL and MOS logic levels.

NSC Type	Description	Supply V V_2	V_3	Net Each, Lots of 1-24	25-99	100 Up
DM7800H	Dual voltage translator	−30	+30	$12.00	$9.60	$7.70
DM7819J	Quad 2-in. TTL-MOS AND gate	.....	.....	5.70	4.55	3.80
DM8819N		.....	.....	1.70	1.35	1.15
DM7810J	Quad 2-input TTL-MOS interface gate	.....	.....	5.70	4.55	3.80
DM8810N		.....	.....	1.70	1.35	1.15
DM7811J		.....	.....	5.70	4.55	3.80
DM8811N		.....	.....	1.70	1.35	1.15
DM7812J	TTL-MOS hex inverter	.....	.....	6.30	5.05	4.20
DM8812N		.....	.....	1.90	1.50	1.25

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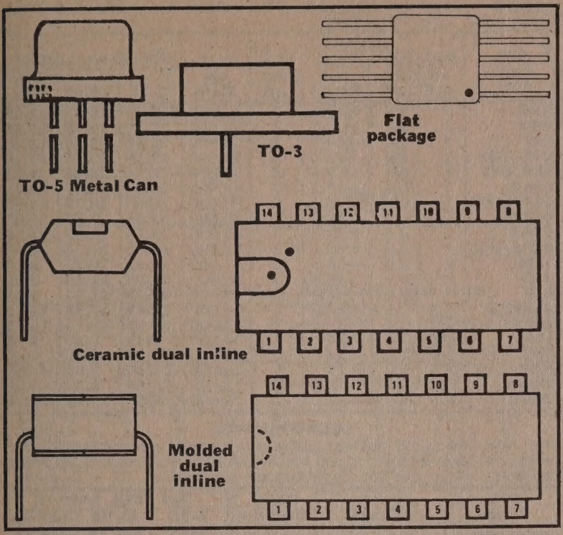
LINEAR CIRCUITS



Temperature Range: −55° C to +125° C for LM100 Series, LM500 Series and LM700 Series (except **C** types); −25° C to +85° C for LM200 Series; 0° C to +70° C for LM300 Series and **C** types (LM500 and LM700 Series). Package Suffix: **H** indicates multi-lead metal can (TO-5); **K** indicates metal can (TO-3); **F** indicates flat package; **D** indicates ceramic dual inline package; **N** indicates molded dual inline package.

POSITIVE VOLTAGE REGULATORS

Adjustable output voltage. Output current 20 mA except LM305A, 45 mA; LM376, 25 mA; LM723, 50 mA. LM105/205/305 have an extra gain stage for improved regulation. Input-output differential 3–30 V except LM300, 3–20 V; LM376, 3–15 V; LM723, 3–38 V.

NSC Type	Voltage Range		Regulation		Net Each, Lots of		
	Input V	Output V	Line %/V	Load %	1-24	25-99	100 Up
LM100H	8.5–40	2.0–30	0.05	0.1	**$15.00**	**$12.00**	**$10.00**
LM100F	8.5–40	2.0–30	0.05	0.1	**27.00**	**21.60**	**18.00**
LM200H	8.5–40	2.0–30	0.05	0.1	**10.50**	**8.40**	**7.00**
LM300H	8.5–40	2.0–30	0.05	0.1	**5.40**	**4.25**	**3.60**
LM105H	8.5–50	4.5–40	0.015	0.02	**22.50**	**18.00**	**15.00**
LM105H/883	8.5–50	4.5–40	0.015	0.02	**26.50**	**21.50**	**18.00**
LM105F	8.5–50	4.5–40	0.015	0.02	**30.00**	**24.00**	**20.00**
LM105F/883	8.5–50	4.5–40	0.015	0.02	**34.00**	**27.50**	**23.00**
LM205H	8.5–50	4.5–40	0.015	0.02	**15.00**	**12.00**	**10.00**
LM376N	9.0–30	5.0–25	0.4*	1.0*	**2.25**	**1.80**	**1.50**
LM723H	9.5–40	2.0–37	0.01	0.03	**5.20**	**4.15**	**3.45**
LM723D	9.5–40	2.0–37	0.01	0.03	**5.80**	**4.60**	**3.85**
LM723CH	9.5–40	2.0–37	0.01	0.03	**1.35**	**1.08**	**.90**
LM723CD	9.5–40	2.0–37	0.01	0.03	**2.95**	**2.35**	**1.95**
LM723CN	9.5–40	2.0–37	0.01	0.03	**1.30**	**1.00**	**.85**

*Maximum.

5-VOLT REGULATORS

Output current, greater than 1000 mA. Input-output differential, 2–30 V. Ripple rejection, 0.005%.

LM109H	7.0–35	4.7–5.3	0.005	0.6	**$30.00**	**$24.00**	**$20.00**
LM109H/883	7.0–35	4.7–5.3	0.005	0.6	**34.00**	**27.50**	**23.00**
LM109K	7.0–35	4.7–5.3	0.005	0.6	**37.50**	**30.00**	**25.00**
LM109K/883	7.0–35	4.7–5.3	0.005	0.6	**41.50**	**33.50**	**28.00**
LM209H	7.0–35	4.7–5.3	0.005	0.6	**11.25**	**9.00**	**7.50**
LM209K	7.0–35	4.7–5.3	0.005	0.6	**13.50**	**10.75**	**8.95**
LM309H	7.0–35	4.8–5.2	0.005	0.6	**3.75**	**3.00**	**2.50**
LM309K	7.0–35	4.8–5.2	0.005	0.6	**3.75**	**3.00**	**2.50**

NEGATIVE VOLTAGE REGULATORS

Can be programmed by single external resistor to supply any voltage from −40 to zero, from single unregulated supply. Line regulation, 0.1%; load regulation, 0.01%. Input-output differential, 2–50 V except LM304, 2–40 V. Ripple rej., 0.01%. Output current, 20 mA. Temperature stability, 1.0%.

NSC Type	Voltage Range		Net Each, Lots of		
	Input V	Output V	1-24	25-99	100 Up
LM104H	−8 to −50	0 to −40	**$30.00**	**$24.00**	**$20.00**
LM104H/883	−8 to −50	0 to −40	**34.00**	**27.50**	**23.00**
LM104F	−8 to −50	0 to −40	**36.00**	**30.00**	**24.00**
LM104F/883	−8 to −50	0 to −40	**40.00**	**33.50**	**27.00**
LM204H	−8 to −50	0 to −40	**21.00**	**16.40**	**14.00**

TRANSISTOR PAIR VOLTAGE REGULATORS

Collector current, 20 mA max. High current gain, 500 minimum at 10 μA.

NSC Type	Offset		Bias Cur. nA	BV_{CBO} BV_{CER} V	Net Each, Lots of		
	mV	Cur. nA			1-24	25-99	100 Up
LM114H	2.0	10	40	45	**$3.75**	**$3.00**	**$2.50**
LM114AH	0.5	2	20	45	**9.00**	**7.20**	**6.00**
LM115H	2.0	10	40	60	**5.60**	**4.50**	**3.75**
LM115AH	0.5	2	40	60	**7.50**	**6.25**	**5.00**

DIFFERENTIAL VOLTAGE COMPARATORS

High-speed voltage comparator for use as an accurate, low-level digital level sensor or as replacement for operational amplifiers where speed is of prime importance. LM711 contains two comparators with separate differential inputs, common output. Voltage gain = 1500.

NSC Type	Input Offset Voltage		Input		Net Each, Lots of		
	mV	Drift μV/°C	Bias Cur. μA	Voltage Range V	1-24	25-99	100 Up
LM710CH	1.6	5	16	±5	**$0.90**	**$0.72**	**$0.60**
LM710CN	1.6	5	16	±5	**.86**	**.66**	**.55**
LM711H	1.0	5	25	±5	**2.55**	**2.05**	**1.70**
LM711CH	1.0	5	25	±5	**1.05**	**.84**	**.70**
LM711CN	1.0	5	25	±5	**.97**	**.78**	**.65**

VOLTAGE COMPARATOR/BUFFERS

High-speed comparator accurately detects low-level analog signals, drives digital load. Equivalent to LM710, combined with two-input NAND gate and output buffer. Voltage gain = 40,000. Fanout = 10.

LM106H	0.5	5	10	±5	**$27.00**	**$21.60**	**$18.00**
LM106H/883	0.5	5	10	±5	**31.00**	**25.10**	**21.00**
LM106F	0.5	5	10	±5	**30.00**	**24.00**	**20.00**
LM106F/883	0.5	5	10	±5	**34.00**	**27.50**	**23.00**
LM206H	0.5	5	10	±5	**17.20**	**13.70**	**11.50**
LM306H	1.6	5	16	±5	**10.20**	**8.10**	**6.80**

VOLTAGE COMPARATORS

Offer input currents nearly a thousand times lower than LM106 or LM710 series. Fanout = 8. Voltage gain = 200 V/mV.

LM111H	0.7	5	0.06	±14	**$18.00**	**$14.40**	**$12.00**
LM111H/883	0.7	5	0.06	±14	**22.00**	**17.90**	**15.00**
LM111D	0.7	5	0.06	±14	**22.50**	**18.00**	**15.00**
LM111F	0.7	5	0.06	±14	**30.00**	**24.00**	**20.00**
LM111F/883	0.7	5	0.06	±14	**34.00**	**27.50**	**23.00**
LM211H	0.7	5	0.06	±14	**11.25**	**9.00**	**7.50**
LM211D	0.7	5	0.06	±14	**15.00**	**12.00**	**10.00**
LM211F	0.7	5	0.06	±14	**18.00**	**14.40**	**12.00**
LM311H	2.0	5	0.1	±14	**4.85**	**3.90**	**3.25**
LM311D	2.0	5	0.1	±14	**6.40**	**5.10**	**4.25**
LM311F	2.0	5	0.1	±14	**7.50**	**6.25**	**5.00**

REGULATOR DIODES

Two-terminal monolithic voltage regulator, electrically equivalent to a breakdown diode. Low dynamic impedance from 10 μA to 10 mA. Hermetically sealed, modified TO-46 package.

NSC Type	Breakdown Voltages Available (Specify When Ordering)	Net Each, Lots of		
		1-24	25-99	100 Up
LM103H	1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3, 3.6, 3.9, 4.3, 4.7, 5.1 or 5.6 volts	**$9.00**	**$7.20**	**$6.00**

REFERENCE DIODES

Temperature compensated. Extremely tight regulation over wide range of operating currents. Temp. stability, 1% typical.

NSC Type	Tolerance	Breakdown V	Imped. Ohms*	Net Each, Lots of		
				1-24	25-99	100 Up
LM113H	±5%	1.230	0.3	**$11.25**	**$ 9.00**	**$ 7.50**
LM113H-1	±1%	1.230	0.3	**22.50**	**18.75**	**15.00**
LM113H-2	±2%	1.230	0.3	**15.00**	**12.00**	**10.00**

*From 500 μA to 20 mA.

PHASE LOCKED LOOP

Self-contained, adaptable filter/demodulator for 0.001 Hz to 500 kHz range. Frequency adjustable over 10:1 range with same capacitor. Bandpass from less than ±1% to over ±60%.

NSC Type	Oper. Volts	Freq. Drift ppm/°C	Linearity*	Net Each, Lots of		
				1-24	25-99	100 Up
LM565H	±5 to ±12	100	0.5%	**$15.00**	**$12.00**	**$9.95**
LM565CH	±5 to ±12	100	0.5%	**7.50**	**6.00**	**5.00**
LM565CN	±5 to ±12	100	0.5%	**3.50**	**3.00**	**2.50**

*Demodulated output.

TV SOUND SYSTEM

Combines a multistage IF amplifier limiter, FM detector, electronic attenuator, zener-regulated power supply, and audio amplifier driver for NPN power transistor. Drive capability, 6 mA p-p. Undistorted output voltage, 7 V p-p.

NSC Type	AM Rejection	Leads	Net Each, Lots of		
			1-24	25-99	100 Up
LM3065N	50 dB at 4.5 MHz	Standard	**$1.50**	**$1.20**	**$1.00**
LM3065N-01	50 dB at 4.5 MHz	Staggered	**1.65**	**1.30**	**1.10**

National Semiconductor IC's

LINEAR OPERATIONAL AMPLIFIERS

Temperature Range: −55° C to +125° C for LM100 Series, LM700 Series (except **C** types) and LM1558; −25° C to +85° C for LM200 Series (except LM201); 0° C to +70° C for LM300 Series, LM700 Series **C** types, LM201 and LM1458. Package Suffix: **H** indicates multi-lead TO-5 metal can; **D** indicates glass-metal dual inline package; **N** indicates molded dual inline package; **F** indicates flat package (0.25" x 0.25").

GENERAL PURPOSE

LM107/207/307 have built-in frequency compensation. Output voltage swing ±13 volts at R_L = 2K ohms. Output current = 5 mA. Power dissipation = 500 mW except LM201 and LM709C, 250 mW; LM709, 300 mW.

NSC Type LM-	Input				Voltage Gain	Net Each, Lots of		
	Offset mV	Offset nA	Voltage Range	Bias Cur. nA		1-24	25-99	100 Up
101H	6	500	±12	1500	50,000	**$ 8.95**	**$ 7.15**	**$ 5.95**
101H/883	6	500	±12	1500	50,000	**11.95**	**9.55**	**7.95**
101D	6	500	±12	1500	50,000	**10.45**	**8.35**	**6.95**
101F	6	500	±12	1500	50,000	**11.95**	**9.55**	**7.95**
101F/883	6	500	±12	1500	50,000	**16.45**	**13.15**	**10.95**
201H	7.5	500	±12	1500	20,000	**2.05**	**1.65**	**1.35**
107H	3	20	±15	100	50,000	**11.95**	**9.55**	**7.95**
107H/883	3	20	±15	100	50,000	**14.95**	**11.95**	**9.95**
107D	3	20	±15	100	50,000	**13.45**	**10.75**	**8.95**
107F	3	20	±15	100	50,000	**14.95**	**11.95**	**9.95**
107F/883	3	20	±15	100	50,000	**19.45**	**15.55**	**12.95**
207H	2	20	±15	75	25,000	**7.45**	**5.95**	**4.95**
207D	2	20	±15	75	25,000	**8.95**	**7.15**	**5.95**
207F	2	20	±15	75	25,000	**8.95**	**7.15**	**5.95**
307H	7.5	50	±12	250	25,000	**.98**	**.78**	**.65**
307D	7.5	50	±12	250	25,000	**2.95**	**2.35**	**1.95**
307F	7.5	50	±12	250	25,000	**6.00**	**4.80**	**4.00**
307N	7.5	50	±12	250	25,000	**.90**	**.72**	**.60**
709H	6	500	±8	1500	25,000	**2.55**	**2.05**	**1.70**
709H/883	6	500	±8	1500	25,000	**5.95**	**4.85**	**3.95**
709CH	7.5	500	±8	1500	25,000	**.90**	**.72**	**.60**
709CN	7.5	500	±8	1500	25,000	**.83**	**.66**	**.55**
741H	6	500	±12	1500	50,000	**4.45**	**3.55**	**2.95**
741H/883	6	500	±12	1500	50,000	**8.90**	**7.20**	**5.95**
741F	6	500	±12	1500	50,000	**6.70**	**5.35**	**4.45**
741CH	6	200	±12	500	20,000	**2.25**	**1.80**	**1.50**
741CN	6	200	±12	500	20,000	**1.60**	**1.25**	**1.05**
748H	6	500	±12	1500	50,000	**3.70**	**2.95**	**2.45**
748CH	6	200	±12	500	50,000	**.97**	**.78**	**.65**
748CN	6	200	±12	500	50,000	**.90**	**.72**	**.60**

HIGH PERFORMANCE

Output voltage swing ±13 volts at R_L = 2K. Power dissipation, 500 mW. Output current = 5 mA.

101AH	3	20	±15	100	50,000	**$11.95**	**$ 9.55**	**$ 7.95**
101AH/883	3	20	±15	100	50,000	**14.95**	**11.95**	**9.95**
101AD	3	20	±15	100	50,000	**13.45**	**10.75**	**8.95**
101AF	3	20	±15	100	50,000	**14.95**	**11.95**	**9.95**
101AF/883	3	20	±15	100	50,000	**19.45**	**15.55**	**12.95**
201AH	2	20	±15	75	25,000	**7.45**	**5.95**	**4.95**
201AD	2	20	±15	75	25,000	**8.95**	**7.15**	**5.95**
201AF	2	20	±15	75	25,000	**8.95**	**7.15**	**5.95**
301AH	7.5	50	±15	250	25,000	**.98**	**.78**	**.65**
301AD	7.5	50	±15	250	25,000	**2.95**	**2.35**	**1.95**
301AF	7.5	50	±15	250	25,000	**6.00**	**4.80**	**4.00**
301AN	7.5	50	±15	250	25,000	**.90**	**.72**	**.60**

VOLTAGE FOLLOWER

LM102/202/302 are high-gain operational amplifiers for unity-gain voltage follower applications. Input current = 10 nA max. for LM102, 15 nA for LM202, 30 nA for LM302. LM302 is epoxy encapsulated. LM110/210/310 are internally connected as unity-gain non-inverting amplifiers with super-gain transistors in input for low bias current without sacrificing speed.

102H	7.5	.....	±15	100	0.999	**$22.50**	**$18.00**	**$15.00**
102H/883	7.5	.....	±15	100	0.999	**26.50**	**21.50**	**18.00**
102F	7.5	.....	±15	100	0.999	**30.00**	**24.00**	**20.00**
102F/883	7.5	.....	±15	100	0.999	**34.00**	**27.50**	**23.00**
202H	10	.....	±15	15	0.999	**9.00**	**7.20**	**6.00**
302H	15	.....	±15	30	0.9985	**4.50**	**3.60**	**3.00**
110H	6	.....	±15	10	0.999	**15.00**	**12.00**	**10.00**
110D	6	.....	±15	10	0.999	**22.50**	**18.75**	**15.00**
110H/883	6	.....	±15	10	0.999	**19.00**	**15.50**	**13.00**
110F	6	.....	±15	10	0.999	**22.50**	**18.75**	**15.00**
110F/883	6	.....	±15	10	0.999	**26.50**	**22.75**	**18.00**
210H	4	.....	±15	3	0.999	**9.00**	**7.20**	**6.00**
210D	4	.....	±15	3	0.999	**16.50**	**13.75**	**11.00**
310H	7.5	.....	±15	7	0.999	**4.85**	**3.90**	**3.25**
310D	7.5	.....	±15	7	0.999	**6.00**	**4.80**	**3.95**

DUAL

Two amplifiers share a common bias network and power supply leads, but are otherwise independent.

747H	1.0	80	±12	200	160*	**$ 8.15**	**$ 6.55**	**$ 5.45**
747H/883	1.0	80	±12	200	160*	**11.95**	**9.55**	**7.95**
747D	1.0	80	±12	200	160*	**15.75**	**12.50**	**10.45**
747D/883	1.0	80	±12	200	160*	**21.75**	**17.50**	**14.50**
747F	1.0	80	±12	200	160*	**18.75**	**15.00**	**12.50**
747CH	1.0	80	±12	200	160*	**5.85**	**4.65**	**3.90**
747CD	1.0	80	±12	200	160*	**6.75**	**5.40**	**4.50**
747CN	1.0	80	±12	200	160*	**2.90**	**2.35**	**1.95**

*V/mV large signal, typical.

LOW INPUT CURRENT, HIGH PERFORMANCE

Precision operational amplifiers with specifications a factor of ten better than FET amplifiers.

NSC Type LM-	Input				Voltage Gain	Net Each, Lots of		
	Offset mV	Offset nA	Voltage Range	Bias Cur. nA		1-24	25-99	100 Up
108H	3	0.4	±13.5	3	50,000	**$19.45**	**$15.55**	**$12.95**
108D	3	0.4	±13.5	3	50,000	**20.95**	**16.75**	**13.95**
108F	3	0.4	±13.5	3	50,000	**25.45**	**20.35**	**16.95**
108H/883	3	0.4	±13.5	3	50,000	**23.95**	**19.15**	**15.95**
108F/883	3	0.4	±13.5	3	50,000	**32.95**	**26.35**	**21.95**
108AH	1	0.4	±13.5	3	80,000	**29.95**	**23.95**	**19.95**
108AH/883	1	0.4	±13.5	3	80,000	**35.95**	**28.75**	**23.95**
108AD	1	0.4	±13.5	3	80,000	**34.45**	**27.55**	**22.95**
108AF	1	0.4	±13.5	3	80,000	**37.45**	**29.95**	**24.95**
108AF/883	1	0.4	±13.5	3	80,000	**46.45**	**37.15**	**30.95**
208H	2	0.4	±13.5	2	50,000	**13.45**	**10.75**	**8.95**
208D	2	0.4	±13.5	2	50,000	**14.95**	**11.95**	**9.95**
208F	2	0.4	±13.5	2	50,000	**14.95**	**11.95**	**9.95**
208AH	0.5	0.4	±13.5	2	80,000	**22.45**	**17.95**	**14.95**
208AD	0.5	0.4	±13.5	2	80,000	**23.95**	**19.15**	**15.95**
308H	7.5	1.0	±14	7	25,000	**2.95**	**2.35**	**1.95**
308D	7.5	1.0	±14	7	25,000	**3.70**	**2.95**	**2.45**
308F	7.5	1.0	±14	7	25,000	**12.00**	**9.60**	**7.98**
308AH	0.5	1.0	±13.5	7	25,000	**11.95**	**9.55**	**7.95**
308AD	0.5	1.0	±13.5	7	25,000	**14.95**	**11.95**	**9.95**

MICROPOWER

Offer very low offset-voltage and input-current errors. LM112/212 provide at least a factor of ten better than FET amplifiers. Internal frequency compensation. Overvoltage protection.

NSC Type	Supply Voltage	Quies. Current	Net Each, Lots of		
			1-24	25-99	100 Up
LM112H	±2 to ±20	300 μA	**$19.45**	**$15.55**	**$12.95**
LM212H	±2 to ±20	300 μA	**12.75**	**10.20**	**8.50**
LM312H	±2 to ±20	300 μA	**2.95**	**2.35**	**1.95**

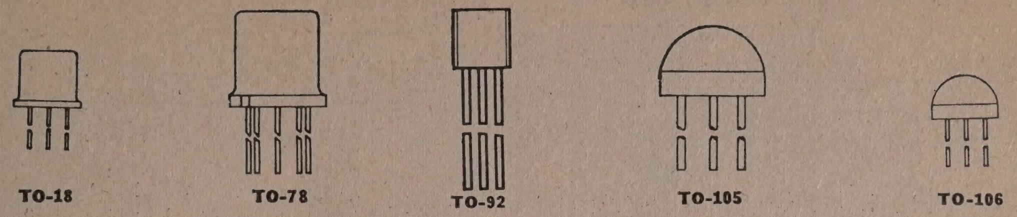
LINEAR HYBRID OPERATIONAL AMPLIFIERS

Temperature Range: −55° C to +125° C except **C** types, 0° C to +70° C. Package Suffix: **H** indicates multi-lead TO-5 metal can; **D** indicates glass-metal dual inline package; **N** indicates molded dual inline package; **F** indicates flat package; **G** indicates TO-8.

NSC Type	Description	Input			Net Each, Lots of		
		Offset		Bias Cur. nA			
		mV	nA		1-24	25-99	100 Up
LH0001H	Low Power	1	20	100	**$78.00**	**$69.00**	**$60.00**
LH0001H/883		1	20	100	**88.00**	**76.00**	**65.00**
LH0001CH		1	20	100	**30.00**	**26.00**	**22.50**
LH0001AH		1	20	100	**50.00**	**42.00**	**36.00**
LH0001AH/883		1	20	100	**55.00**	**46.50**	**40.00**
LH0001AD		1	20	100	**50.00**	**42.00**	**36.00**
LH0001AD/883		1	20	100	**55.00**	**46.50**	**40.00**
LH0001AF		1	20	100	**62.00**	**53.00**	**46.00**
LH0001AF/883		1	20	100	**68.00**	**58.00**	**50.00**
LH0001ACH		1	20	100	**22.00**	**17.00**	**14.50**
LH0001ACD		1	20	100	**22.00**	**17.00**	**14.50**
LH0001ACF		1	20	100	**28.00**	**23.00**	**20.00**
LH0002H	Current amplifier	100	.....	10*	**18.50**	**16.50**	**14.00**
LH0002H/883		100	.....	10*	**23.50**	**21.00**	**18.00**
LH0002CH		100	.....	10*	**7.80**	**6.90**	**6.00**
LH0002CN		100	.....	10*	**7.75**	**6.75**	**5.95**
LH0003H	Wide bandwidth	3	200	2*	**67.50**	**54.00**	**45.00**
LH0003H/883		3	200	2*	**72.50**	**58.50**	**49.00**
LH0003CH		3	200	2*	**32.00**	**26.00**	**22.00**
LH0004H	High voltage	1	20	100	**59.00**	**52.00**	**45.00**
LH0004H/883		1	20	100	**69.00**	**59.00**	**50.00**
LH0004CH		1	20	100	**30.00**	**26.00**	**22.50**
LH0005H	General purpose	10	20	50	**30.00**	**26.00**	**22.50**
LH0005CH		10	25	100	**16.50**	**14.50**	**12.50**
LH0005AH		3	5	25	**52.00**	**46.00**	**40.00**
LH0020G	Med. current§	2.5	50	250	**38.00**	**32.00**	**26.50**
LH0020CG		6	200	500	**20.00**	**17.00**	**14.00**
LH0023G	Sample and hold amp	†	†	†	**85.50**	**66.50**	**47.50**
LH0023G/883		†	†	†	**90.50**	**71.00**	**51.50**
LH0023CG		†	†	†	**19.50**	**17.25**	**15.00**
LH0024H	500 V/μs high speed	5	20K	2K	**72.00**	**56.00**	**40.00**
LH0024CH		7	20K	2K	**19.50**	**17.25**	**15.00**
LH0033G	1000 V/μs voltage follower	5	.050	......	**54.00**	**42.00**	**30.00**
LH0033CG		10	.050	......	**19.50**	**17.25**	**15.00**
LH0022H	FET input	2	0.2‡	10‡	**45.00**	**35.00**	**25.00**
LH0022H/883		2	0.2‡	10‡	**50.00**	**39.50**	**29.00**
LH0022CH		4	0.2‡	10‡	**10.50**	**9.25**	**7.95**
LH740AH	FET input	10	40‡	100‡	**35.00**	**26.00**	**19.00**
LH740ACH		10	40‡	100‡	**15.00**	**10.80**	**9.00**
LH101H	Internally compensated	5	200	500	**22.50**	**18.00**	**15.00**
LH101D		5	200	500	**30.00**	**24.00**	**20.00**
LH101F		5	200	500	**30.00**	**24.00**	**20.00**
LH201H		7.5	500	1500	**11.25**	**9.00**	**7.50**

*Cur. in μA.† Sample input, 2.0 V min., 5.0 mA max.; hold input, 0.8 V max., 0.5 mA max. ‡Cur. in pA. §High gain instrumentation.

NATIONAL SEMICONDUCTOR TRANSISTORS



EPOXY TRANSISTORS

NPN SMALL SIGNAL AMPLIFIER (TO-106)

NSC Type	Min. V_{CBO} V	Max. I_{CBO} nA	h_{FE} at I_C		$V_{CE(sat)}$ at I_C		Min. f_T MHz	Net Each	
			Min.	mA	V	mA		1-99	100 Up
2N3565	30	50	150	1	0.35	1	40	$0.22	$0.16
2N3691	35	50	40	10	0.7	10	200	.30	.22
2N3692	35	50	100	10	0.7	10	200	.30	.22
2N3693	45	50	40	10	......	....	200	.30	.22
2N3694	45	50	100	10	......	....	200	.30	.22
2N4966	50	25	40	0.01	0.4	10	40	**	**
2N4967	50	25	100	0.01	0.4	10	40	**	**
2N4968	30	50	40	0.01	0.4	10	40	**	**
2N5127	20	50	15	2	0.3	10	150	**	**
2N5131	20	50	30	10	1.0	10	100	**	**
2N5132	20	50	30	10	2.0	10	200	**	**
2N5133	20	50	60	1	0.4	1	40	**	**

PNP SMALL SIGNAL AMPLIFIER (TO-106)

2N4248	40	10	50	0.1	0.25	10	40	$0.22	$0.16
2N4249	60	10	100	0.1	0.25	10	40	.27	.20
2N4250	40	10	250	0.1	0.25	10	50	.33	.24
2N4964	50	25	30	0.01	0.4	10	60	**	**
2N4965	50	25	80	0.01	0.4	10	60	**	**
2N5138	30	50	50	0.1	0.3	10	30	**	**
2N5139	20	50	30	0.1	0.5	50	300	**	**

NPN MEDIUM POWER AMPLIFIER (TO-105)

2N3566	40	50	150	10	1.0	100	40	$0.22	$0.20
2N3567	80	50	40	150	0.25	150	60	.24	.18
2N3568	80	50	40	150	0.25	150	60	.35	.26
2N3569	80	50	100	150	0.25	150	60	.30	.22
2N3641	60	50	40	150	0.22	150	250	.30	.22
2N3642	60	50	40	150	0.22	150	250	.30	.22
2N3643	60	50	100	150	0.22	150	250	.30	.22
2N4140*	60	50	40	150	0.4	150	250	.55	.35
2N4141*	60	50	100	150	0.4	150	250	.58	.37
2N4227*	60	50	75	150	0.4	150	250	.60	.40
2N4969*	50	50	40	150	0.4	150	200	**	**
2N4970*	50	50	100	150	0.4	150	200	**	**
2N5128	15	50	35	50	0.25	150	200	**	**
2N5129*	15	50	35	50	0.25	150	200	**	**
2N5135	30	300	50	10	1.0	100	40	**	**
2N5136	30	100	20	150	0.25	150	40	**	**
2N5137*	30	100	20	150	0.25	150	40	**	**

PNP MEDIUM POWER AMPLIFIER (TO-105)

2N3638	25	35	20	300	1.0	300	150	$0.24	$0.18
2N3638A	25	35	20	300	1.0	300	150	.27	.20
2N3644	45	35	100	150	1.0	300	200	.33	.24
2N3645	60	35	100	150	1.0	300	200	.33	.24
2N4142*	60	50	40	150	0.4	150	200	.62	.39
2N4143*	60	50	100	150	0.4	150	200	.64	.41
2N4228*	60	50	75	150	0.4	150	200	.75	.49
2N4354	80	50	40	100	0.15	150	100	.43	.34
2N4355	60	50	75	100	0.15	150	100	.49	.36
2N4356	80	50	40	100	0.15	150	100	.49	.36
2N4971*	50	25	40	150	0.15	150	200	**	**
2N4972*	50	25	100	150	0.4	150	200	**	**
2N5142	20	50	15	300	2.0	300	100	**	**
2N5143*	20	50	15	300	2.0	300	100	**	**

NPN GENERAL PURPOSE AMPLIFIER (TO-92)

2N3903	60	50	50	10	0.3	50	250	$0.46	$0.34
2N3904	60	50	100	10	0.3	50	300	.46	.34
2N4123	40	50	50	2	0.3	50	250	.33	.24
2N4124	40	50	120	2	0.3	50	300	.33	.24

PNP GENERAL PURPOSE AMPLIFIER (TO-92)

2N3905	40	50†	50	10	0.4	50	200	$0.49	$0.36
2N3906	40	50†	100	10	0.4	50	250	.49	.36
2N4125	30	50	50	2	0.4	50	200	.33	.24
2N4126	25	50	120	2	0.4	50	250	.33	.24

NPN HIGH FREQUENCY AMPLIFIER (TO-106)

2N3563	30	50	20	8	......	....	600	$0.27	$0.20
2N3564	30	50	20	15	0.3	20	400	.30	.22
2N5130	30	50	15	8	0.6	10	450	**	**

*TO-106 package. †I_{CEX}.

PNP HIGH FREQUENCY AMPLIFIER (TO-106)

NSC Type	Min. V_{CBO} V	Max. I_{CES} nA	h_{FE} at I_C		$V_{CE(sat)}$ at I_C		Min. f_T MHz	Net Each	
			Min.	mA	V	mA		1-99	100 Up
2N4121	40	25	70	10	0.14	10	400	$0.27	$0.20
2N4122	40	25	150	10	0.14	10	450	.30	.22
2N4916	30	25	70	10	0.14	10	400	**	**
2N4917	30	25	150	10	0.14	10	450	**	**

NPN HIGH SPEED SATURATED SWITCH (TO-106)

NSC Type	Min. V_{CBO} V	Min. V_{EBO} V	h_{FE} at I_C		Maximum		Min. f_T MHz	Net Each	
			Min.	mA	t_{off} ns	C_{ob} pF		1-99	100 Up
2N3646	40	5	30	30	28	5	350	$0.27	$0.20
2N4274	30	4.5	35	10	12	4	400	.22	.20
2N4275	40	4.5	30	10	12	4	400	.27	.20
2N5134	20	3.5	20	10	18	4	250	**	**

PNP HIGH SPEED SATURATED SWITCH (TO-106)

2N3639	6	4	30	10	60	3.5	300	$0.54	$0.25
2N3640	12	4	30	10	35	3.5	300	.41	.27
2N4257	6	4.5	30	10	15	3	500	**	**
2N4257A	6	4.5	30	10	15	3	500	**	**
2N4258	12	10*	30	10	20	3	700	.49	.36
2N4258A	12	10*	30	10	18	3	700	.57	.38
2N4313	12	4.5	30	10	25	4	700	.51	.38
2N5055	12	4.5	20	10	25	4.5	550	**	**
2N5910	20	4.5	30	10	20	3	700	**	**

*I_{CES}.

PNP SILICON TRANSISTORS

LOW LEVEL DUAL DIFFERENTIAL AMPLIFIER (TO-78)

I_{CBO} = 10 nA maximum.

NSC Type	Min.		h_{FE} at I_C = 0.1 mA	Maximum		Min. f_t MHz	Net Each	
	V_{CBO} V	V_{CEO} V		Δh_{FE} %	C_{ob} pF		1-99	100 Up
2N3347	60	45	40–300‡	10	6	60	$10.00	$ 6.15
2N3348	60	45	40–300‡	20	6	60	8.15	5.00
2N3349	60	45	40–300‡	40	6	60	6.45	3.95
2N3350	60	45	100–300‡	10	6	60	11.50	7.00
2N3351	60	45	100–300‡	20	6	60	8.50	5.25
2N3352	60	45	100–300‡	40	6	60	6.45	3.95
2N3806	60	60	150–450	.....	4	100	4.30	2.05
2N3807	60	60	300–900	.....	4	100	5.70	3.50
2N3808	60	60	150–450	20	4	100	7.15	4.40
2N3810	60	60	150–450	10	4	100	10.00	6.15
2N3810*	60	60	150–450	10	4	100	12.00	7.50
2N3810†	60	60	150–450	10	4	100	17.75	11.50
2N3810A	60	60	150–450	5	4	100	14.30	8.75
2N3811	60	60	300–900	10	4	100	14.30	8.75
2N3811*	60	60	300–900	10	4	100	13.50	8.50
2N3811†	60	60	300–900	10	4	100	19.50	13.00
2N3811A	60	60	300–900	5	4	100	17.00	10.50

*JAN type. †JANTX type. ‡At I_C = 0.01 mA.

SATURATED SWITCH (TO-18)

NSC Type	Min. V_{CBO} V	Max. I_{CES} nA	h_{FE} at I_C		Maximum		Min. f_T MHz	Net Each	
			Min.-Max.	mA	t_{off} nsec	C_{ob} pF		1-99	100 Up
2N995	20	50‡	35–140	20	125#	10	100	**	**
2N2411	25	10‡	20–60	10	100	5	140	**	**
2N2412	25	10‡	40–120	10	100	5	140	**	**
2N2894	12	80	40–150	30	90	6	400	$0.69	$0.42
2N2894A	12	50	40–120	30	35	4.5	800	3.60	2.40
2N3012	12	80	30–120	30	75	6	400	1.26	.78
2N3209	20	80	30–120	30	90	5	400	1.29	.79
2N3248	15	50§	50–150	0.1	100	8	250	3.38	2.25
2N3249	15	50§	100–300	0.1	100	8	200	4.05	2.70
2N3250	50	20§	50–150	10	225	6	250	.60	.37
2N3250A	60	20§	50–150	10	225	6	250	.89	.54
2N3251A	60	20§	100–300	10	250	6	300	1.24	.76
2N3251A*	60	20‡	100–300	10	250	6	300	2.23	1.48
2N3251A†	60	20‡	100–300	10	250	6	300	4.35	2.90
2N3304	6	10	30–120	10	60	3.5	500	1.48	.92
2N3545	20	10‡	40–120	10	90	8	250	9.00	6.00
2N3546	15	10‡	30–120	10	30	6	700	2.65	1.64
2N3576	20	10	40–120	10	50	4.5	400	2.45	1.63
2N4208	12	10	30–120	10	20	3	700	3.35	2.00
2N4209	15	10	50–120	10	20	3	850	4.00	2.46
2N5056	15	50	30–100	30	35	4.5	600	**	**
2N5057	15	50	40–100	30	35	4.5	800	**	**

*JAN type. †JANTX type. ‡I_{CBO}. §I_{CEX}. #Typical.

**PRICES AVAILABLE ON REQUEST

NATIONAL SEMICONDUCTOR TRANSISTORS

PNP SILICON TRANSISTORS (CONT'D)

MEDIUM POWER PLANAR EPITAXIAL

NSC Type	Case TO-	Min. V_{CBO} V	Max. I_{CBO} nA	h_{FE} at I_C= 150 mA	Max. C_{ob} pF	Min. f_T MHz	Net Each	
							1-99	100 Up
2N722	18	50	1000	30–90	45	60	$0.57	$0.52
2N1132	5	50	1000	25–100•	45	60	.71	.42
2N2904	5	60	20	40–120	8	200	.54	.33
2N2904*	5	60	20	40–120	8	200	.65	.39
2N2904†	5	60	20	40–120	8	200	2.20	1.35
2N2904A	5	60	10	40–120	8	200	.54	.33
2N2904A*	5	60	10	40–120	8	200	.72	.44
2N2904A†	5	60	10	40–120	8	200	2.20	1.35
2N2905	5	60	20	100–300	8	200	.54	.33
2N2905*	5	60	20	100–300	8	200	.65	.39
2N2905†	5	60	20	100–300	8	200	2.20	1.35
2N2905A	5	60	10	100–300	8	200	.54	.33
2N2905A*	5	60	10	100–300	8	200	.72	.44
2N2905A†	5	60	10	100–300	8	200	2.20	1.35
2N2906	18	60	20	40–120	8	200	.43	.26
2N2906*	18	60	20	40–120	8	200	.52	.32
2N2906†	18	60	20	40–120	8	200	1.67	1.08
2N2906A	18	60	20	40–120	8	200	.43	.26
2N2906A*	18	60	10	40–120	8	200	.56	.34
2N2906A†	18	60	10	40–120	8	200	1.67	1.03
2N2907	18	60	20	100–300	8	200	.43	.26
2N2907*	18	60	20	100–300	8	200	.52	.32
2N2907†	18	60	20	100–300	8	200	1.67	1.03
2N2907A	18	60	20	100–300	8	200	.43	.26
2N2907A*	18	60	20	100–300	8	200	.52	.32
2N2907A†	18	60	20	100–300	8	200	1.67	1.03
2N3072	5	60	10▲	30–130#	10	130	1.22	.74
2N3073	18	60	10▲	30–130#	10	130	.99	.60
2N3120	5	45	10▲	30–130#	10	130	1.15	.70
2N3121	18	45	10▲	30–130#	10	130	1.20	.74
2N3133	5	50	50	40–120	10	200	1.26	.78
2N3134	5	50	50	100–300	10	200	1.15	.70
2N3135	18	50	50	40–120	10	200	1.00	.61
2N3136	18	50	50	100–300	10	200	1.50	1.00
2N3502	5	45	10000	100–300	8	200	1.69	1.04
2N3503	5	60	10000	100–300	8	200	2.45	1.52
2N3504	18	45	10000	100–300	8	200	1.69	1.04
2N3505	18	60	10000	100–300	8	200	1.70	1.06
2N4030	39	60	50	40–120‡	20	100	1.00	.61
2N4031	39	80	50	40–120‡	20	100	1.04	.87
2N4032	39	60	50	100–300‡	20	150	1.15	.70
2N4033	39	80	50	100–300‡	20	150	1.42	.88
2N4036	39	90	100	40–140	30	60	1.20	.85
2N4037	39	60	250	50–250	30	60	1.05	.74
2N4402	92	40	100■	50–150	8.5	150	.60	.40
2N4403	92	40	100■	100–300	8.5	200	.75	.40

*JAN type. †JANTX type. ‡At I_C=100 mA. #At I_C=50 mA. •At I_C=1 mA. ▲I_{CES}. ■I_{CEX}.

LOW LEVEL PLANAR EPITAXIAL

NSC Type	Case TO-	Min. V_{CBO} V	Max. I_{CBO} nA	h_{FE} at I_C= 150 mA	Max. C_{ob} pF	Min. f_T MHz	Net Each	
							1-99	100 Up
2N2604	46	60	10	40–120§	6	30	$2.60	$1.74
2N2604*	46	80	10	40–120§	6	30	3.50	2.30
2N2605	46	60	10	100–300§	6	30	1.28	.79
2N2605*	46	70	10	100–300§	6	30	2.40	1.60
2N2605†	46	70	10	100–300§	6	30	3.30	2.20
2N3547	18	60	25	100–500‡	8	45	3.50	2.40
2N3548	18	60	10	100–300§	8	60	3.80	2.60
2N3549	18	60	10	100–500§	8	60	4.20	2.80
2N3550	18	60	1	200–600§	8	60	5.00	3.25
2N3962	18	60	10	100–450‡	6	40	.91	.56
2N3963	18	80	10	100–450‡	6	40	1.43	.88
2N3964	18	45	10	250–600‡	6	40	1.44	.90

*JAN type. †JANTX type. ‡At I_C=1 mA. §At I_C=10 μA.

PIONEER-STANDARD

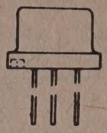
CARRIES THE COMPLETE NATIONAL

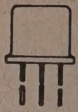
SEMICONDUCTOR LINE

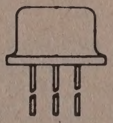
PHONE—WRITE—WIRE FOR SPECIFICATION

SHEETS AND QUANTITY PRICES ON ANY

NEW OR UNLISTED TYPES


TO-5


TO-18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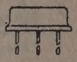

TO-46

NPN SILICON TRANSISTORS

MEDIUM POWER PLANAR EPITAXIAL

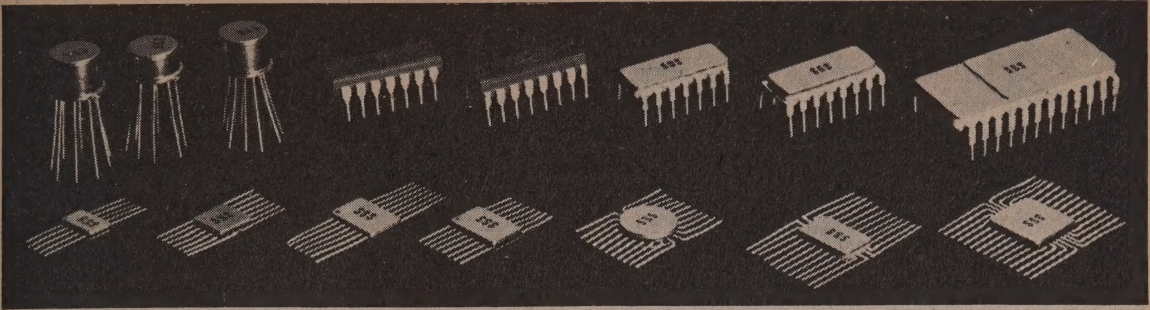
NSC Type	Case TO-	Min. V_{CBO} V	Max. I_{CBO} nA	h_{FE} at I_C= 150 mA	Max. C_{ob} pF	Min. f_T MHz	Net Ea., Lots	
							1-99	100 Up
2N697	5	60	100	40–120	35	50	**	**
2N699	5	120	2	40–120	20	50	**	**
2N718	18	60	100	40–120	35	50	**	**
2N956	18	75	10	100–300	25	70	**	**
2N1420	5	60	1000	100–300	35	50	$0.63	$0.42
2N1711	5	75	100	100–300	25	70	.55	.34
2N2017	39	60	10§	50–200‡	.....	.....	1.75	1.05
2N2102	39	120	2	40–120	10	60	.80	.63
2N2192	39	60	10	100–300	20	50	1.35	.51
2N2192A	39	60	10	100–300	20	50	1.35	.51
2N2193	39	80	10	40–120	20	50	1.00	.61
2N2193A	39	80	10	40–120	20	50	1.15	.70
2N2195	39	45	100	20 min.	20	50	.90	.60
2N2195A	39	45	100	20 min.	20	50	.95	.60
2N2218	5	60	10	40–120	8	250	.55	.34
2N2218*	5	60	10	40–120	8	250	.62	.38
2N2218†	5	60	10	40–120	8	250	2.05	1.25
2N2218A	5	75	10	40–120	8	250	.63	.39
2N2218A*	5	75	10	40–120	8	250	.65	.41
2N2218A†	5	75	10	40–120	8	250	2.05	1.25
2N2219	5	60	10	100–300	8	250	.54	.33
2N2219*	5	60	10	100–300	8	250	.62	.38
2N2219†	5	60	10	100–300	8	250	2.05	1.25
2N2219A	5	75	10	100–300	8	300	.54	.33
2N2219A*	5	75	10	100–300	8	250	.65	.40
2N2219A†	5	75	10	100–300	8	250	2.05	1.25
2N2221	18	60	10	40–120	8	250	.57	.35
2N2221*	18	60	10	40–120	8	250	.46	.28
2N2221†	18	60	10	40–120	8	250	1.45	.88
2N2221A	18	75	10	40–120	8	250	.51	.31
2N2221A*	18	75	10	40–120	8	250	.52	.32
2N2221A†	18	75	10	40–120	8	250	1.55	.95
2N2222	18	60	10	100–300	8	250	.34	.21
2N2222*	18	60	10	100–300	8	250	.46	.28
2N2222†	18	60	10	100–300	8	250	1.45	.88
2N2222A	18	75	10	100–300	8	300	.57	.35
2N2222A*	18	75	10	100–300	8	250	.46	.28
2N2222A†	18	75	10	100–300	8	250	1.55	.95
2N2243	5	120	10	40–120	15	50	1.86	1.24
2N2243A	39	120	10	40–120	15	50	1.86	1.24
2N2270	5	60	50	50–200	15	100	.79	.53
2N3019	5	140	10	100–300	12	100	1.15	.70
2N3019*	5	140	10	100–300	12	100	5.00	3.50
2N3019†	5	140	10	100–300	12	100	6.50	4.50
2N3020	39	140	10	40–120	12	100	1.00	.61
2N3053	39	60	......	50–250	15	100	.54	.33
2N3107	39	100	......	100–300	20	350	1.15	.70
2N3108	39	100	10	40–120	20	60	1.15	.70
2N3109	39	80	10	100–300	25	70	1.15	.70
2N3110	39	80	10	40 min.	25	60	1.15	.70
2N3299	39	60	......	40–120	8	250	.68	.45
2N3300	39	60	......	100–300	8	250	.85	.63
2N3301	18	60	......	40–120	8	250	.70	.40
2N3302	18	60	......	100–300	8	250	.90	.59
2N3665	39	120	50	40–120	12	60	1.12	1.06
2N3666	39	120	50	100–300	12	60	1.90	1.15
2N3945	39	70	......	40–250	12	60	1.10	.80
2N4401	92	60	100§	100–300	6.5	250	.75	.50
2N4943	39	120	10	100–300	12	150	**	**

*JAN type. †JANTX type. ‡I_C=200 mA. §μA.

**PRICES AVAILABLE ON REQUEST

SOLID STATE SCIENTIFIC INC.

CMOS INTEGRATED CIRCUITS



Suffix indicates packages available: **D,** hermetic ceramic DIP; **E,** plastic DIP; **F,** hermetic flat pack; **T,** TO-5 can style.

SCL4000A SERIES

Feature: Low power of 10 nW typ. for gates and 10 μW typ. for MSI circuits; single power supply, 3–15 volts; high noise immunity, 45% of supply voltage typ.; high speed to 10 MHz for gates and flip-flops. Temperature range −55° C to +125° C except plastic types, −40° C to +85° C.

SSSI Number	Description	Net Each, Lots of 1-24	25-99	100-999	1000 Up
SCL4000AD	Dual 3-input positive NOR plus inverter gate	$ 4.46	$ 3.54	$ 2.88	$2.38
SCL4000AE		1.11	.89	.74	.62
SCL4000AF		4.46	3.54	2.88	2.38
SCL4001AD	Quad 2-input positive NOR gate	4.70	3.73	3.02	2.51
SCL4001AE		1.11	.89	.74	.62
SCL4001AF		4.70	3.73	3.02	2.51
SCL4002AD	Dual 4-input positive NOR gate	4.35	3.85	3.13	2.59
SCL4002AE		1.11	.89	.74	.62
SCL4002AF		4.35	3.85	3.13	2.59
SCL4006AD	18-stage static shift register	13.70	10.87	8.84	7.30
SCL4006AE		5.83	4.70	3.89	3.24
SCL4006AF		13.70	10.87	8.84	7.30
SCL4007AD	Dual complementary pair plus inverter	3.73	2.98	2.42	2.00
SCL4007AE		1.11	.87	.74	.62
SCL4007AF		3.73	2.98	2.42	2.00
SCL4008AD	Four-bit full adder	15.00	12.00	10.00	8.25
SCL4008AE		5.90	4.80	3.96	3.32
SCL4008AF		15.00	12.00	10.00	8.25
SCL4009AD	Hex buffer, inverting type	7.03	5.58	4.54	3.75
SCL4009AE		2.94	2.45	1.97	1.63
SCL4009AF		7.03	5.58	4.54	3.75
SCL4010AD	Hex buffer, non-inverting type	7.03	5.58	4.54	3.75
SCL4010AE		2.94	2.45	1.97	1.63
SCL4010AF		7.03	5.58	4.54	3.75
SCL4011AD	Quad 2-input positive NAND gate	4.70	3.73	3.02	2.51
SCL4011AE		1.11	.89	.74	.62
SCL4011AF		4.70	3.73	3.02	2.51
SCL4012AD	Dual 4-input positive NAND gate	4.35	3.85	3.13	2.59
SCL4012AE		1.11	.89	.74	.62
SCL4012AF		4.35	3.85	3.13	2.59
SCL4013AD	Dual "D" type flip-flop with set-reset	6.75	5.36	4.36	3.60
SCL4013AE		2.34	1.89	1.57	1.30
SCL4013AF		6.75	5.36	4.36	3.60
SCL4014AD	8-stage static shift register	15.20	12.06	9.81	8.10
SCL4014AE		6.35	5.12	4.24	3.53
SCL4014AF		15.20	12.06	9.81	8.10
SCL4015AD	Dual 4-stage static shift register	15.20	12.06	9.81	8.10
SCL4015AE		6.35	5.12	4.24	3.53
SCL4015AF		15.20	12.06	9.81	8.10
SCL4016AD	Quad bilateral switch	6.75	5.36	4.36	3.60
SCL4016AE		2.34	1.89	1.57	1.30
SCL4016AF		6.75	5.36	4.36	3.60
SCL4017AD	Decade counter/divider with 10 decoded decimal outputs	15.90	12.62	10.26	8.48
SCL4017AE		6.35	5.12	4.24	3.53
SCL4017AF		15.90	12.62	10.26	8.48
SCL4018AD	Presettable divide-by-N counter	13.90	11.03	8.97	7.41
SCL4018AE		6.35	5.12	4.24	3.53
SCL4018AF		13.90	11.03	8.97	7.41
SCL4019AD	Quad AND-OR select gate	7.17	5.69	4.63	3.82
SCL4019AE		2.72	2.19	1.81	1.51
SCL4019AF		7.17	5.69	4.63	3.82
SCL4020AD	14-stage ripple-carry binary counter	18.00	14.29	11.61	9.60
SCL4020AE		7.00	5.70	4.72	3.93
SCL4020AF		18.00	14.29	11.61	9.60
SCL4021AD	8-stage static shift register, asynchronous input	14.70	11.67	9.48	7.84
SCL4021AE		6.35	5.12	4.24	3.53
SCL4021AF		14.70	11.67	9.48	7.84
SCL4022AD	Divide-by-8 counter with decoded outputs	14.40	11.44	9.30	7.68
SCL4022AE		6.14	4.94	4.09	3.41
SCL4022AF		14.40	11.44	9.30	7.68
SCL4023AD	Triple 3-input positive NAND gate	4.35	3.85	3.13	2.59
SCL4023AE		1.11	.89	.74	.62
SCL4023AF		4.35	3.85	3.13	2.59
SCL4024AD	7-stage ripple-carry binary counter	10.80	8.57	6.97	5.76
SCL4024AE		4.55	3.67	3.02	2.53
SCL4024AF		10.80	8.57	6.97	5.76
SCL4025AD	Triple 3-input positive NOR gate	4.35	3.85	3.13	2.59
SCL4025AE		1.11	.89	.74	.62
SCL4025AF		4.35	3.85	3.13	2.59
SCL4026AD	Decade counter w/7-seg. display output and display enable	$18.00	$14.29	$11.61	$ 9.60
SCL4026AE		8.48	6.88	5.65	4.71
SCL4026AF		18.00	14.29	11.61	9.60
SCL4027AD	Dual J-K master-slave flip-flop	7.92	6.29	5.11	4.22
SCL4027AE		3.61	2.91	2.41	2.00
SCL4027AF		7.92	6.29	5.11	4.22
SCL4028AD	BCD-to-decimal decoder	11.88	9.56	7.92	6.57
SCL4028AE		5.51	4.44	3.67	3.06
SCL4028AF		11.88	9.56	7.92	6.57
SCL4029AD	Presettable up/down counter	17.20	13.65	11.10	9.17
SCL4029AE		9.52	7.67	6.35	5.29
SCL4029AF		17.20	13.65	11.10	9.17
SCL4030AD	Quad EXCLUSIVE-OR gate	5.69	4.52	3.67	3.03
SCL4030AE		2.35	1.89	1.56	1.31
SCL4030AF		5.69	4.52	3.67	3.03
SCL4033AD	Decade counter w/7-seg. display outputs and ripple blanking	18.00	14.50	12.00	10.20
SCL4033AE		8.37	6.74	5.58	4.65
SCL4033AF		18.00	14.50	12.00	10.20
SCL4034AD	8-stage binary-dir. input-output	18.00	14.50	12.00	10.20
SCL4034AF		18.00	14.50	12.00	10.20
SCL4035AD	4-stage J-K input S-R	9.45	8.70	6.30	5.36
SCL4035AE		6.15	5.00	4.10	3.42
SCL4035AF		9.45	8.70	6.30	5.36
SCL4040AD	12-stage ripple-carry binary counter	16.20	12.86	10.45	8.64
SCL4040AE		6.35	5.12	4.24	3.53
SCL4040AF		16.20	12.86	10.45	8.64
SCL4041AD	Quad buffer-true/complement	8.83	7.00	5.70	4.71
SCL4041AE		4.88	3.93	3.24	2.70
SCL4041AF		8.83	7.00	5.70	4.71
SCL4042AD	Quad clocked D-type latch	8.83	7.00	5.70	4.71
SCL4042AE		4.88	3.93	3.24	2.70
SCL4042AF		8.83	7.00	5.70	4.71
SCL4043AD	Quad NOR R-S latch	8.83	7.00	5.70	4.71
SCL4043AE		4.88	3.93	3.24	2.70
SCL4043AF		8.83	7.00	5.70	4.71
SCL4044AD	Quad NAND R-S latch	8.83	7.00	5.70	4.71
SCL4044AE		4.88	3.93	3.24	2.70
SCL4044AF		8.83	7.00	5.70	4.71
SCL4049AD	Hex buffer, inverting type	7.03	5.58	4.54	3.75
SCL4049AE		2.23	1.80	1.47	1.23
SCL4049AF		7.03	5.58	4.54	3.75
SCL4050AD	Hex buffer, noninverting type	7.03	5.58	4.54	3.75
SCL4050AE		2.94	2.45	1.97	1.63
SCL4050AF		7.03	5.58	4.54	3.75

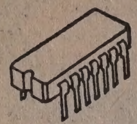
SCL4400A SERIES

All features of SCL4000A Series. Extended functional capability; fully compatible with other CMOS logic types. **F** package available at same price as D package (SCL4402A**F**) except SCL4445A**F** not available.

SCL4402AD	Dual 4-input expandable NOR gate	$ 4.35	$ 3.85	$ 3.13	$ 2.59
SCL4402AE		1.11	.89	.74	.62
SCL4404AD	8-stage synchronous binary counter	12.30	10.07	8.47	7.26
SCL4404AE		6.05	5.17	4.54	4.03
SCL4412AD	Dual 4-input expandable NAND gate	4.35	3.85	3.13	2.59
SCL4412AE		1.11	.89	.74	.62
SCL4416AD	Quad bilateral switch/DPDT switch	6.75	5.36	4.36	3.60
SCL4416AE		2.34	1.89	1.57	1.30
SCL4426AD	Decade counter with 7-segment decoder	21.60	17.15	13.93	11.52
SCL4426AE		10.18	8.26	6.78	5.65
SCL4428AD	Strobed 1-of-8 decoder	12.41	10.52	8.71	7.23
SCL4428AE		6.06	4.88	4.04	3.37
SCL4433AD	Decade counter with segment decode	21.60	17.15	13.93	11.52
SCL4433AE		10.04	8.09	6.70	5.58
SCL4441AD	Quad low impedance buffer	8.83	7.00	5.70	4.71
SCL4441AE		4.88	3.93	3.24	2.70
SCL4445AD	Oscillator/21-stage divider	10.80	9.80	7.20	6.75
SCL4445AE		5.80	4.85	3.95	3.30
SCL4449AD	Economy hex inverter	5.64	4.48	3.62	3.01
SCL4449AE		1.33	1.07	.89	.75

HARRIS SEMICONDUCTOR Integrated Circuits

A DIVISION OF HARRIS-INTERTYPE CORPORATION


Dual Inline

TO-5 Type

Flat Package

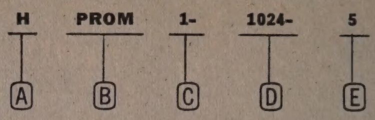
DIGITAL INTEGRATED CIRCUITS

Harris Number	Description	Net Each, Lots of 1-24	25-99	100-999
HD1-0140-2	4-bit latch/seven-segment decoder-driver	$18.50	$13.40	$11.25
HD1-0165-5	Keyboard encoder	7.60	5.45	4.60
HD1-245-2	Triple line transmitter	16.20	13.50	10.00
HD9-245-2	Triple line transmitter	16.20	13.50	10.00
HD1-246-2	Triple line receiver	16.20	13.50	10.00
HD9-246-2	Triple line receiver	16.20	13.50	10.00
HD1-248-2	Triple party line receiver	16.20	13.50	10.00
HD9-248-2	Triple party line receiver	16.20	13.50	10.00
HD1-249-2	Triple line receiver	16.20	13.50	10.00
HD9-249-2	Triple line receiver	16.20	13.50	10.00
HD1-545-5	Triple line transmitter	12.00	10.00	7.40
HD9-545-5	Triple line transmitter	12.00	10.00	7.40
HD1-546-5	Triple line receiver	12.00	10.00	7.40
HD9-546-5	Triple line receiver	12.00	10.00	7.40
HD1-548-5	Triple party line receiver	12.00	10.00	7.40
HD9-548-5	Triple party line receiver	12.00	10.00	7.40
HD1-549-5	Triple line receiver	12.00	10.00	7.40
HD9-549-5	Triple line receiver	12.00	10.00	7.40
HD1-1488-5	Quad line driver	8.25	6.90	5.50
HD1-1489-5	Quad line receiver	6.00	5.00	4.00
HD1-1489A-5	Quad line receiver	6.00	5.00	4.00
HD1-6600-2	Quad power strobe	13.60	10.60	8.50
HD1-6600-5	Quad power strobe	9.05	7.05	5.65
HT1-6500-2 HT1-6500-5B HT1-6501-2 HT1-6501-5B HT1-6502-2 HT1-6502-5B	Quad core driver—4 NPN transistors/chip	13.50 8.80 12.00 7.80 9.75 6.35	10.80 7.00 9.60 6.25 7.80 5.05	9.00 5.85 8.00 5.20 6.50 4.20

DIGITAL DIELECTRIC ISOLATION CMOS

Harris Number	Description	1-24	25-99	100-999
HD1-4000-2 HD1-4000-9	Dual 3-input NOR gate plus inverter	$ 4.70 1.52	$3.80 1.22	$3.10 1.00
HD1-4001-2 HD1-4001-9	Quad 2-input NOR gate	4.95 1.52	4.00 1.22	3.30 1.00
HD1-4002-2 HD1-4002-9	Dual 4-input NOR gate	5.15 1.52	4.15 1.22	3.40 1.00
HD1-4007-2 HD1-4007-9	Dual complementary pair plus inverter	4.00 1.52	3.20 1.22	2.65 1.00
HD1-4009-2 HD1-4009-9	Hex inverter-buffer	7.90 3.30	6.40 2.65	5.25 2.20
HD1-4010-2 HD1-4010-9	Hex buffer	7.40 3.30	6.40 2.65	5.25 2.20
HD1-4011-2 HD1-4011-9	Quad 2-input NAND gate	4.95 1.52	4.00 1.22	3.30 1.00
HD1-4012-2 HD1-4012-9	Dual 4-input NAND gate	5.20 1.52	4.20 1.22	3.45 1.00
HD1-4013-2 HD1-4013-9	Dual type "D" flip-flop	7.10 3.15	5.75 2.55	4.75 2.10
HD1-4019-2 HD1-4019-9	Quad AND-OR select gate	7.65 3.60	6.15 3.00	5.05 2.45
HD1-4023-2 HD1-4023-9	Triple 3-input NAND gate	5.15 1.52	4.15 1.22	3.40 1.00
HD1-4025-2 HD1-4025-9	Triple 3-input NOR gate	5.15 1.52	4.15 1.22	3.40 1.00
HD1-4027-2 HD1-4027-9	Dual J-K flip-flop	7.90 3.30	6.40 2.65	5.25 2.20
HD1-4030-2 HD1-4030-9	Quad exclusive-OR gate	5.80 3.20	4.60 2.55	3.80 2.10
HD1-4804-2 HD1-4804-9	3-state hex buffer with level translator	11.60 9.30	9.35 7.50	7.67 6.15
HD1-4805-2 HD1-4805-9	3-state hex buffer inverter w/level translator	11.60 9.30	9.35 7.50	7.67 6.15
HD1-4806-2 HD1-4806-9	3-state triple true comp. buffer w/disable, independent level translator	11.60 9.30	9.35 7.50	7.67 6.15
HD1-4807-2 HD1-4807-9	3-state hex buffer inverter w/disable	11.60 9.30	9.35 7.50	7.67 6.15
HD1-4808-2 HD1-4808-9	3-state hex buffer with disable	11.60 9.30	9.35 7.50	7.67 6.15
HD1-4809-2 HD1-4809-9	Triple true-complement buffer	7.50 3.35	6.45 2.70	5.30 2.25
HD1-4810-2 HD1-4810-9	3-state triple true comp. buffer with disable, common level translator	11.60 9.30	9.35 7.50	7.67 6.15
HD1-4811-2 HD1-4811-9	Quad exclusive-NOR gate	5.80 3.20	4.60 2.55	3.80 2.10
HD1-4814-2 HD1-4814-9	Hex inverter	5.80 3.20	4.60 2.55	3.80 2.10

IC ORDERING INFORMATION



Ⓐ **Harris Logo:** Letter **H.**

Ⓑ **Family:** One or four letters.

A, Amplifier	**PROM,** Field Programmable Read-Only Memory
D, Digital	**S,** MSI/LSI
I, Linear	**T,** Transistor Array
M, Diode Matrix	

Ⓒ **Package Type: 1,** Dual Inline; **2,** TO-5 type; **9,** Flat Package.

Ⓓ **Specific Device Type:** HM-010, HPROM-1024.

Ⓔ **Temperature Range:**

2, −55° C to +125° C	**5,** 0° C to +75° C
3, −55° C to +125° C (reduced parameter values)	**8,** Dash 8 Program MIL-STD-883 Class B
4, −25° C to +85° C	**9,** −40° C to +85° C

MEMORY DEVICES

DIGITAL MONOLITHIC DIODE MATRIX ARRAYS

Harris Number	Description	Net Each, Lots of 1-24	25-99	100-999
HM1-010-2 HM9-010-2	Fast recovery (10 ns), 5 x 8	$6.45 7.75	$5.20 6.75	$4.75 6.20
HM1-012-2 HM9-012-2	Medium recovery (25 ns), 5 x 8	5.15 5.80	4.45 4.95	4.10 4.40
HM1-013-2 HM9-013-2	General purpose (50 ns), 5 x 8	4.95 5.55	4.30 4.80	3.95 4.40
HM1-030-2 HM9-030-2	Fast recovery (10 ns), 6 x 8	7.15 8.60	5.75 7.50	5.25 6.90
HM1-031-2 HM9-031-2	Medium recovery (25 ns), 6 x 8	5.70 6.40	4.95 5.50	4.55 5.10
HM1-034-2 HM9-034-2	General purpose (50 ns), 6 x 8	5.50 6.15	4.75 5.30	4.40 4.90
HM1-040-2 HM9-040-2	Fast recovery (10 ns), 8 x 6	7.15 8.60	5.75 7.50	5.25 6.90
HM1-041-2 HM9-041-2	Medium recovery (25 ns), 8 x 6	5.70 6.40	4.95 5.50	4.55 5.10
HM1-044-2 HM9-044-2	General purpose (50 ns), 8 x 6	5.50 6.15	4.75 5.30	4.40 4.90
HM1-050-2*	Fast recovery (10 ns)	6.45	5.20	4.75
HM1-051-2*	Medium recovery (25 ns)	5.15	4.45	4.10
HM1-055-2*	General purpose (50 ns)	4.95	4.30	3.95
HM1-074-2 HM9-074-2	Fast recovery (10 ns), 5 x 5	5.80 7.00	4.70 6.05	4.30 5.50
HM1-075-2 HM9-075-2	Medium recovery (25 ns), 5 x 5	4.65 5.20	4.00 4.45	3.70 3.85
HM1-077-2 HM9-077-2	General purpose (50 ns), 5 x 5	4.45 5.00	3.90 4.30	3.65 3.85
HM1-080-2 HM9-080-2	Fast recovery (10 ns), 8 x 5	6.45 7.75	5.20 6.75	4.75 6.20
HM1-081-2 HM9-081-2	Medium recovery (25 ns), 8 x 5	5.15 5.80	4.45 4.95	4.10 4.40
HM1-084-2 HM9-084-2	General purpose (50 ns), 8 x 5	4.95 5.55	4.30 4.80	3.95 4.40
HM1-090-2 HM9-090-2	Fast recovery (10 ns), 4 x 10	6.45 7.75	5.20 6.75	4.75 6.20
HM1-091-2 HM9-091-2	Medium recovery (25 ns), 4 x 10	5.15 5.80	4.45 4.95	4.10 4.60
HM1-093-2 HM9-093-2	General purpose (50 ns), 4 x 10	4.95 5.55	4.30 4.80	3.95 4.40

*10 x 4.

DIGITAL COMMERCIAL DIODE MATRIX ARRAYS

Harris Number	Description	Net Each, Lots of 1-24	25-99	100-999
HM1-0104-5	t_{rr} = 100 ns, 10 x 4	$2.70	$2.35	$2.15
HM1-0110-5	t_{rr} = 100 ns, 4 x 10	2.70	2.35	2.15
HM1-0168-5	t_{rr} = 100 ns, 6 x 8	3.00	2.60	2.40
HM1-0186-5	t_{rr} = 100 ns, 8 x 6	3.00	2.60	2.40

DIGITAL MONOLITHIC INTERFACE CIRCUITS

Harris Number	Description	Net Each, Lots of 1-24	25-99	100-999
HD1-234-2 HD9-234-2	Low voltage hex interface inverter	$12.60 12.60	$ 9.10 9.10	$7.70 7.70
HD1-235-2 HD9-235-2	High voltage hex interface driver	16.20 16.20	11.70 11.70	9.90 9.90
HD1-534-5 HD9-534-5	Low voltage hex interface inverter	6.30 6.30	4.55 4.55	3.85 3.85
HD1-535-5 HD9-535-5	High voltage hex interface driver	6.30 6.30	4.55 4.55	3.85 3.85

HARRIS SEMICONDUCTOR Integrated Circuits

A DIVISION OF HARRIS-INTERTYPE CORPORATION

FIELD PROGRAMMABLE ROM (PROM™)

In 16-pin ceramic DIP (HPROM-0512, 24-pin); flat package also available. Prices do not include programming; quotations available on request.

Harris Number	Description	Net Each, Lots of		
		1-24	25-99	100-999
HPROM1-0512-2B	512-bit (64 x 8) bipolar PROM—wired-OR outputs, AND enable inputs	$ 40.50	$ 31.90	$ 23.50
HPROM1-0512-5B		32.00	24.50	18.00
HPROM1-0512-8		49.00	40.00	30.00
HPROM1-1024-2B	1024-bit (256 x 4) bipolar PROM—3-state	60.00	51.00	44.00
HPROM1-1024-5B		40.00	30.00	22.00
HPROM1-1024-8		69.00	59.00	51.50
HPROM1-1024A-2B	1024-bit (256 x 4) bipolar PROM—open collector	60.00	51.00	44.00
HPROM1-1024A-5B		40.00	30.00	22.00
HPROM1-1024A-8		69.00	59.00	51.50
HPROM1-1256-2B	256-bit (256 x 1) bipolar PROM	39.00	29.50	24.50
HPROM1-1256-5B		24.50	17.50	14.75
HPROM1-2048-2	2048-bit (512 x 4) bipolar PROM—3-state	160.00	125.00	98.00
HPROM1-2048-5		98.00	80.00	65.00
HPROM1-2048-8		170.00	135.00	108.00
HPROM1-2048A-2	2048-bit (512 x 4) bipolar PROM—open collector	160.00	125.00	98.00
HPROM1-2048A-5		98.00	80.00	65.00
HPROM1-2048A-8		170.00	135.00	108.00
HPROM1-8256-2B	256-bit (32 x 8) bipolar PROM—expandable	26.70	21.30	16.00
HPROM1-8256-5B		15.00	12.00	9.00
HPROM1-8256-8		35.20	29.80	22.50

LINEAR INTEGRATED CIRCUITS

Harris Number	Description	Net Each, Lots of		
		1-24	25-99	100-999
HA2-909-2	Low noise operational amplifier	$10.20	$ 8.85	$ 7.50
HA9-909-2		29.70	21.45	18.15
HA2-909-8		17.20	14.10	11.45
HA9-909-8		37.70	27.50	22.70
HA2-909A-2		54.00	39.00	33.00
HA9-909A-2		59.40	42.90	36.30
HA2-911-5		4.80	4.15	3.50
HA9-911-5		7.95	6.85	5.80
HA2-2000-2	FET input preamplifier	8.85	7.70	6.50
HA2-2000A-2		14.95	12.95	10.95
HA2-2005-5		5.95	5.15	4.35
HA2-2005A-5		8.10	7.05	5.95
HA2-2050-2	High slew rate FET input operational amplifiers	26.25	22.80	19.25
HA2-2050A-2		32.70	28.40	24.00
HA2-2055-5		16.00	13.85	11.75
HA2-2055A-5		18.25	15.80	13.40
HA2-2060-2	Wide band FET input operational amplifier	21.00	18.20	15.40
HA2-2060A-2		27.20	23.60	19.90
HA2-2065-5		13.85	12.00	10.20
HA2-2065A-5		16.10	14.00	11.85
HA2-2101-2	General purpose operational amplifier	5.10	4.20	3.45
HA2-2101-8		11.10	8.70	6.45
HA2-2101A-2	High performance general purpose operational amp	6.00	4.95	4.07
HA2-2101A-8		12.00	9.45	7.07
HA2-2107-2	High performance general purpose operational amp internally compensated	13.25	10.90	8.95
HA2-2107-3		5.80	4.70	3.95
HA2-2107-8		19.25	15.40	11.95
HA1-2111-2	Voltage comparator	22.50	18.00	15.00
HA1-2111-8		28.50	22.50	18.00
HA2-2111-2		18.00	14.40	12.00
HA2-2111-8		24.00	18.90	15.00
HA2-2201A-4	Same as HA2-2101A	5.70	4.80	3.95
HA2-2207-4	Same as HA2-2107	8.00	6.60	5.40
HA1-2211-4	Voltage comparator	15.00	12.00	10.00
HA2-2211-4		11.25	9.00	7.50
HA2-2301A-5	Same as HA2-2101A	1.50	1.30	1.10
HA2-2307-5	Same as HA2-2107	1.50	1.30	1.10
HA1-2311-5	Voltage comparator	6.40	5.10	4.25
HA2-2311-5		4.85	3.90	3.25
HA1-2400-2	PRAM™ four-channel programmable amplifier	32.25	28.00	23.65
HA1-2400-8		39.25	33.25	27.60
HA1-2404-4		21.80	18.85	15.95
HA1-2405-5		14.25	12.35	10.45
HA2-2500-2	High slew rate operational amplifier internally compensated	25.10	21.80	18.50
HA2-2500-8		32.10	27.05	22.45
HA9-2500-2		33.50	27.00	24.80
HA9-2500-8		41.50	33.05	29.35
HA2-2502-2		17.65	15.30	12.95
HA2-2502-8		24.65	20.55	16.90
HA9-2502-2		25.50	20.50	18.80
HA9-2502-8		33.50	26.55	23.35
HA2-2505-5		10.20	8.85	7.50
HA9-2505-5		17.50	14.00	12.80
HA2-2510-2	High slew rate operational amplifier internally compensated	25.10	21.80	18.50
HA2-2510-8		32.10	27.05	22.45
HA9-2510-2		36.50	29.50	27.25
HA9-2510-8		44.50	35.55	31.80
HA2-2512-2	High slew rate operational amplifier internally compensated	$17.65	$15.30	$12.95
HA2-2512-8		24.65	20.55	16.90
HA9-2512-2		28.00	22.45	20.60
HA9-2512-8		36.00	28.50	25.15
HA2-2515-5		10.20	8.85	7.50
HA9-2515-5		19.50	15.40	14.00
HA2-2520-2	High slew rate operational amplifier	25.10	21.80	18.50
HA2-2520-8		32.10	27.05	22.45
HA9-2520-2		36.50	29.50	27.25
HA9-2520-8		44.50	35.55	31.80
HA2-2522-2		17.65	15.30	12.95
HA2-2522-8		24.65	20.55	16.90
HA9-2522-2		28.00	22.45	20.60
HA9-2522-8		36.00	28.50	25.15
HA2-2525-5		10.20	8.85	7.50
HA9-2525-5		19.50	15.40	14.00
HA2-2530-2	High slew rate wideband inverting amplifier	45.00	39.00	33.00
HA2-2535-5		19.50	16.90	14.30
HA2-2600-2	High impedance, high performance operational amplifier internally compensated	20.20	17.65	14.95
HA2-2600-8		27.20	22.90	18.90
HA9-2600-2		24.60	19.70	17.85
HA9-2600-8		32.60	25.75	22.40
HA2-2602-2		12.20	10.60	8.95
HA2-2602-8		19.20	15.85	12.90
HA9-2602-2		19.40	15.50	14.25
HA9-2602-8		27.40	21.55	18.80
HA2-2605-5		8.10	7.05	5.95
HA9-2605-5		14.20	11.40	10.70
HA1-2620-2*	Wide band, high impedance operational amplifier	20.20	17.65	14.95
HA1-2620-8*		27.20	22.90	18.90
HA1-2622-2*		12.20	10.60	8.95
HA1-2622-8*		19.20	15.85	12.90
HA1-2625-5*		8.10	7.05	5.95
HA1-2700-2*	High performance operational amplifier internally compensated	21.80	18.85	15.95
HA1-2700-8*		28.80	24.10	19.90
HA1-2704-4*		12.75	11.00	9.35
HA1-2705-5*		9.45	8.20	6.95
HA1-2800-2	High frequency phase locked loop	30.90	26.80	22.65
HA1-2805-5		13.40	11.60	9.85
HA1-2820-2	Low frequency phase locked loop	18.25	15.80	13.35
HA1-2825-5		8.63	7.50	6.35
HA2-2900-2	Chopper stabilized operational amplifier	120.00	104.00	88.00
HA2-2900-5		75.00	65.00	55.00
HA2-2904-4		97.50	84.50	71.50
HI1-0180-2	8-bit A/D encoder	24.10	21.00	17.70
HI1-0185-5		12.20	10.45	8.85
HI1-0910-2	10-bit D/A ladder network	20.80	18.20	15.60
HI1-0910-5		14.40	12.60	10.80
HI1-0910-8		27.80	23.45	19.55
HI1-1010-2		25.60	22.50	19.20
HI1-1010-5		19.20	16.80	14.40
HI1-1010-8		32.60	27.75	23.15
HI1-1080-2†	8-bit D/A converter high speed monolithic	70.50	62.00	59.95
HI1-1080-8†		80.50	69.50	65.20
HI1-1085-5†		32.95	29.10	27.95
HI1-1800-2	4-channel general purpose analog switch	18.75	16.25	13.75
HI1-1800-5		12.75	11.05	9.35
HI1-1800-8		25.75	21.50	17.70
HI1-1800A-2		23.25	20.15	17.05
HI1-1800A-5		15.75	13.65	11.55
HI1-1800A-8		30.25	25.40	21.00
HI1-1818-2	8-channel analog multiplexer	54.50	46.15	39.95
HI1-1818-5		41.75	35.40	29.95
HI1-1818-8		61.50	51.40	43.90
HI1-1818A-2		68.00	59.00	49.95
HI1-1818A-5		52.50	45.50	38.50
HI1-1818A-8		75.00	64.25	53.90
HI1-1828-2	Dual 4-channel analog multiplexer	54.50	46.15	39.95
HI1-1828-5		41.75	35.40	29.95
HI1-1828-8		61.50	51.40	43.90
HI1-1828A-2		68.00	59.00	49.95
HI1-1828A-5		52.50	45.50	38.50
HI1-1828A-8		75.00	64.25	53.90
2N4044	Dielectrically isolated NPN matched pairs (in 6-pin TO-5 type pkg.)	4.55	4.55	3.40
2N4045		3.00	3.00	2.30
2N4100		4.55	4.55	3.40
2N5117	Dielectrically isolated PNP matched pairs (in 6-pin TO-5 type pkg.)	5.95	5.95	4.40
2N5118		4.55	4.55	3.40
2N5119		3.00	3.00	2.30

*Available in Pkg. 2 at same price (HA2-2620-2); †Pkg. 9 at same price (HI9-1080-2).

LINEAR ANALOG MULTIPLEXERS

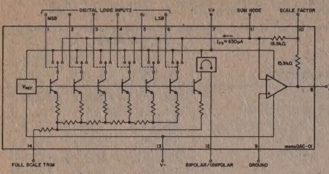
Harris Number	Description	Net Each, Lots of		
		1-24	25-99	100-999
HI1-506A-2	16-channel multiplexer	$ 80.60	$ 67.50	$ 57.20
HI1-506A-5		40.30	33.80	28.60
HI1-507A-2	Dual 8-channel multiplexer	80.60	67.50	57.20
HI1-507A-5		40.30	33.80	28.60
HS9-1000-2	Dual 8-channel or 16-channel multiplexer	360.00*	260.00*	200.00
HS9-1000-8		400.00*	280.00*	210.00

*Quantities of 1–9 and 10–99 respectively.

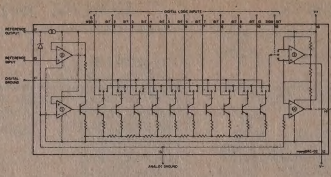
SEE PRECEDING PAGE FOR ILLUSTRATIONS AND ORDERING INFORMATION

PRECISION MONOLITHICS INCORPORATED

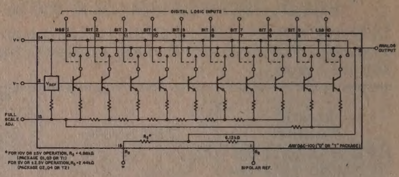
IC A/D AND D/A CONVERTERS



monoDAC-01 Series



monoDAC-02 Series



aimDAC-100 Series

Precision Monolithics manufactures the industry's largest line of complete IC D/A and A/D converters. All devices receive a minimum of 72 hours of power-burn-in at +125° C to insure excellent reliability and long-term stability. All PMI converters are complete with internal voltage reference and precision resistor ladder network and are completely tested and guaranteed to be within specifications shown over the entire operating temperature range. Ratings given for resolution, linearity and TC are maximum values.

monoDAC-01 6 BIT MONOLITHIC D/A CONVERTER SERIES

Complete 6-bit voltage output DAC features settling time of 3 μsec max. Pd = 250 mW at ±15 V; TTL, DTL compatible logic levels. Output voltages of 0 V to +10 V and ±10 V on bipolar models. Ideal for audio encoding/decoding, programmable power supplies, positioning controls and analog meter drives. **Package:** Suffix **P**, 14-pin hermetic DIP; suffix **S**, 14-pin epoxy-"B" DIP.

PMI Type	Temperature Range	Linearity	TC ppm/° C	Output Type	Net Each, Lots of			
					1-24	25-99	100-249	250-999
monoDAC-01AP	−55° C to +125° C	0.30%	40	Bipolar	$180.00	$144.00	$121.50	....
monoDAC-01P	−55° C to +125° C	0.45%	80	Bipolar	90.00	72.00	60.75	....
monoDAC-01BP	−55° C to +125° C	0.45%	120	Bipolar	60.00	48.00	40.50	....
monoDAC-01FP	−55° C to +125° C	0.45%	80	Unipolar	51.60	41.30	34.85	....
monoDAC-01CP	0° C to +70° C	0.45%	160	Bipolar	33.25	26.65	22.20	$22.20
monoDAC-01HP	0° C to +70° C	0.45%	160	Unipolar	26.95	21.00	17.50	17.50
monoDAC-01CS	0° C to +70° C	0.45%	160	Bipolar	18.75	15.00	12.50	12.50
monoDAC-01HS	0° C to +70° C	0.45%	160	Unipolar	13.95	11.10	9.25	9.25

monoDAC-02 8 AND 10 BIT PLUS SIGN MONOLITHIC D/A CONVERTER SERIES

Complete voltage output monolithic sign/magnitude coded DAC. 10 bit plus sign resolution, may also be used for 8 bit and lower resolution applications. Bipolar output, internal reference with external reference (multiplying) capability. Fast 1.5 μsec settling time; TTL, DTL and CMOS compatible logic levels. Pd = 300 mW max. at ±15 V. Excellent for all high accuracy instrumentation, control and communication applications. **Package:** 18-pin hermetic DIP. Linearity bits to ±½ LSB.

PMI Type	Temperature Range	Resolution Bits	Linearity		TC ppm/° C	Output Voltage	Net Each, Lots of		
			%	Bits			1-24	25-99	100-249
monoDAC-02ACU1	0° C to +70° C	10+1	0.05	10	60	0 to +10, ±10	$90.00	$72.00	$60.00
monoDAC-02ACU2	0° C to +70° C	10+1	0.05	10	60	0 to +5, ±5	90.00	72.00	60.00
monoDAC-02BCU1	0° C to +70° C	10+1	0.1	9	60	0 to +10, ±10	77.00	62.00	51.00
monoDAC-02BCU2	0° C to +70° C	10+1	0.1	9	60	0 to +5, ±5	77.00	62.00	51.00
monoDAC-02CCU1	0° C to +70° C	10+1	0.2	8	60	0 to +10, ±10	67.50	54.00	45.00
monoDAC-02CCU2	0° C to +70° C	10+1	0.2	8	60	0 to +5, ±5	67.50	54.00	45.00

monoDAC-04 8 AND 10 BIT TWO'S COMPLEMENT MONOLITHIC D/A CONVERTER SERIES

Complete 10 bit resolution voltage output monolithic D/A converter is similar to monoDAC-02 above, but features two's complement digital coding for direct interface with computers. Coding easily converted to straight or offset binary codes. **Package:** 18-pin hermetic DIP.

monoDAC-04ACU1	0° C to +70° C	10	0.05	10	60	±10	$90.00	$72.00	$60.00
monoDAC-04ACU2	0° C to +70° C	10	0.05	10	60	0 to +10, ±5	90.00	72.00	60.00
monoDAC-04BCU1	0° C to +70° C	10	0.1	9	60	±10	77.00	62.00	51.00
monoDAC-04BCU2	0° C to +70° C	10	0.1	9	60	0 to +10, ±5	77.00	62.00	51.00
monoDAC-04CCU1	0° C to +70° C	10	0.2	8	60	±10	67.50	54.00	45.00
monoDAC-04CCU2	0° C to +70° C	10	0.2	8	60	0 to +10, ±5	67.50	54.00	45.00

aimDAC-100 8 AND 10 BIT FAST CURRENT OUTPUT D/A CONVERTER SERIES

Complete current output binary-coded DAC. 10-bit resolution, may also be used for 8 bit and lower resolution applications. Operates from ±6 V to ±18 V. Pd = 300 mW max. at ±15 V. Fast 375 nsec max. settling time; 0 to 2 mA output current is ideal for direct use in ADC applications. Internal summing resistor is provided for easy conversion to voltage using external op-amp. For 0 to +10 V and ±5 V applications, order suffix **Q1, Q3** or **T1;** for 0 to +5 V and ±2.5 V applications, order suffix **Q2, Q4** or **T2. Q1** and **Q2** suffix types operate over −55° C to +125° C range; parameters shown are specified over −25° C to +85° C range. Q3 and Q4 types for industrial applications. All units are TTL and DTL compatible logic input levels. **Package:** 16-pin DIP; suffix **Q3** and **Q4** hermetic DIP; suffix **T1** and **T2** epoxy-"B" DIP; 24-pin Flat-Pak available; prices on request. Linearity bits to ±½ LSB.

PMI Type	Temperature Range	Resolution Bits	Linearity		TC ppm/° C	Net Each, Lots of			
			%	Bits		1-24	25-99	100-249	250-999
aimDAC100-AAQ1 (and Q2)	−55° C to +125° C	10	0.05	10	15	$200.00	$160.00	$135.00	....
aimDAC100-ACQ1 (and Q2)	−55° C to +125° C	10	0.05	10	60	78.75	63.00	52.50	....
aimDAC100-ADQ1 (and Q2)	−55° C to +125° C	10	0.05	10	120	63.00	50.40	42.00	....
aimDAC100-BAQ1 (and Q2)	−55° C to +125° C	10	0.1	9	15	150.00	120.00	100.00	....
aimDAC100-BBQ1 (and Q2)	−55° C to +125° C	10	0.1	9	30	100.00	80.00	67.00	....
aimDAC100-BCQ1 (and Q2)	−55° C to +125° C	10	0.1	9	60	65.55	51.80	43.70	....
aimDAC100-CCQ1 (and Q2)	−55° C to +125° C	10	0.2	8	60	56.70	45.00	37.80	....
aimDAC100-DDQ1 (and Q2)	−55° C to +125° C	10	0.3	7	120	35.70	28.50	23.80	....
aimDAC100-ACQ3 (and Q4)	0° C to +70° C	10	0.05	10	60	48.75	39.00	32.50	$32.50
aimDAC100-BCQ3 (and Q4)	0° C to +70° C	10	0.1	9	60	35.75	28.50	23.75	23.75
aimDAC100-CCQ3 (and Q4)	0° C to +70° C	10	0.2	8	60	30.00	24.00	20.00	20.00
aimDAC100-DDQ3 (and Q4)	0° C to +70° C	10	0.3	7	120	28.25	22.50	18.75	18.75
aimDAC100-ACT1 (and T2)	0° C to +70° C	10	0.05	10	60	39.00	31.25	26.00	26.00
aimDAC100-BCT1 (and T2)	0° C to +70° C	10	0.1	9	60	25.50	20.50	17.00	17.00
aimDAC100-CCT1 (and T2)	0° C to +70° C	10	0.2	8	60	18.00	14.50	12.00	12.00
aimDAC100-DDT1 (and T2)	0° C to +70° C	10	0.3	7	120	15.00	12.00	9.95	9.95

monoAD124 12 BIT SUCCESSIVE APPROXIMATION A/D CONVERTER SERIES

Complete 12 bit high speed ADC in miniature 40-pin DIP. Versatile, low power ADC provides serial and parallel outputs in binary, offset binary and two's complement codings. User may choose internal or external reference, input ranges of 0 to +5 V, 0 to +10 V, ±2.5 V, ±5 V and ±10 V, and number of bits encoded by pin selection. Encoding time: 6 bits in 8 μsec; 8 bits in 10 μsec; 10 bits in 15 μsec; 12 bits in 24 μsec. Operates from ±15 V and +5 V supplies; total power required, 800 mW max. Package: Miniature 40-pin DIP; 2.00" x 0.60" x 0.22"; pin spacing is on 0.100" centers.

PMI Type	Temperature Range	Resolution Bits	Linearity		TC ppm/° C	Net Each, Lots of		
			%	Bits*		1-24	25-99	100-249
monoAD124-09CW3	0° C to +70° C	12	0.1	9	60	$220.00	$175.00	$145.00
monoAD124-08CW3	0° C to +70° C	12	0.2	8	60	190.00	150.00	125.00
monoAD124-08DW3	0° C to +70° C	12	0.2	8	120	165.00	135.00	110.00

*To ±½ LSB.

PRECISION MONOLITHICS INCORPORATED HIGH PERFORMANCE LINEAR CIRCUITS

Precision Monolithic's operational amplifiers and precision voltage comparators are engineered to provide the ultimate in performance without compromise in specification or requirement for external components. All devices, including the **Superior Second Source line,** are fabricated using PMI's exclusive "Triple-Passivation" process which provides extremely high reliability, long term stability of parameters and freedom from "popcorn" noise. All specifications shown (Min./Max.) are at ±15 V, 25° C unless otherwise noted. **Suffix:** First letter in suffix indicates temperature range: None, **A**, **F** and **G** (monoOP-01J, monoOP-05AJ), −55° C to +125° C; **B**, −25° C to +85° C; **C**, **E** and **H**, 0° C to +70° C. Final letter in suffix indicates package: **J**, 8-pin TO-99; **K**, 10-pin TO-100; **P** and **Y**, 14-pin hermetic DIP. Flat-Pak available, prices on request.

HIGH PERFORMANCE OPERATIONAL AMPLIFIERS

monoOP-01 FAST SLEWING, FAST SETTLING SERIES

Fully protected, internally compensated high speed op-amp settles to 0.1% in 1.0 μsec max.; slews at 18 V/μsec. Input range ±12 V, output delivers ±10 V into 2K ohm load. Fits standard 741 socket.

Gain = 50 V/mV min. except -01GJ, -01GY, 25; -01CJ, -01CY, 25.

PMI Type	Maximum V_{OS} mV	Maximum I_{OS} nA	Maximum I_B nA	Max. P_d mW	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
monoOP-01J	0.7	2.0	30	60	$60.00	$48.00	$40.00*
monoOP-01Y	0.7	2.0	30	60	75.00	60.00	50.00*
monoOP-01FJ	2.0	5.0	50	90	13.50	10.75	8.95
monoOP-01FY	2.0	5.0	50	90	27.00	21.50	17.95
monoOP-01GJ	5.0	20.0	100	90	4.65	3.75	3.10
monoOP-01GY	5.0	20.0	100	90	14.00	11.10	9.25
monoOP-01HJ	0.7	2.0	30	60	17.65	14.10	11.75
monoOP-01HY	0.7	2.0	30	60	30.00	24.00	19.95
monoOP-01EJ	2.0	5.0	50	90	5.10	4.05	3.35
monoOP-01EY	2.0	5.0	50	90	12.00	9.50	7.95
monoOP-01CJ	5.0	20.0	100	90	2.95	2.35	1.95
monoOP-01CY	5.0	20.0	100	90	7.50	6.00	4.95

*100–249 quantity.

monoOP-05 INSTRUMENTATION SERIES

Typical long-term stability of better than 2.5 μV/month allows replacement of chopper-stabilized amplifiers and elimination of chopper noise. Ideal for all small signal instrumentation applications. Input range, ±14.0 V; output capability, ±12.0 V into 1K ohm load. Noise = 0.6 μV p-p max. (-05CJ, -05CY, 0.65). CMRR = 114 dB min. except as otherwise noted. Direct replacement in 725- and 108-type sockets for easy performance improvement.

PMI Type	Maximum V_{OS} mV	Maximum TCV_{OS} μV/°C	Maximum I_B nA	Min. Gain V/mV	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
monoOP-05AJ	0.15	0.5	2.0	300	$67.50	$54.00	$44.95*
monoOP-05AY	0.15	0.5	2.0	300	81.00	64.75	53.95*
monoOP-05J	0.5	1.0	3.0	200	30.00	24.00	19.95
monoOP-05Y	0.5	1.0	3.0	200	40.50	32.50	26.95
monoOP-05EJ*	0.5	0.6	4.0	200	22.50	18.00	14.95
monoOP-05EY*	0.5	0.6	4.0	200	30.00	24.00	19.95
monoOP-05CJ*	1.3	1.5	7.0	120	12.00	9.50	7.95
monoOP-05CY*	1.3	1.5	7.0	120	15.75	12.50	10.50

*CMRR = 110 dB min. *100–249 quantity.

monoOP-10 MATCHED DUAL INSTRUMENTATION SERIES

Extremely tight matching of V_{OS} and TCV_{OS} allows realization of very high performance instrumentation amplifiers, dual tracking voltage references, low drift active filters, etc., without hand selection. Matching of CMRR's allows exceptional common-mode noise rejection. Also useful for applications where space is critical ΔPSRR = 100 dB min., -10AY; 94 dB min., -10EY, -10Y. Channel separation = 126 dB min. (120 dB, -10CY). Characteristics of individual amplifiers similar to monoOP-05 Series listed above.

PMI Type	Maximum ΔV_{OS} mV	Maximum $TC\Delta V_{OS}$ μV/°C	Min. ΔCMRR dB	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
monoOP-10AY*	0.18	0.8	114	$90.00	$72.00	$60.00*
monoOP-10Y	0.5	1.2	106	60.00	48.00	40.00
monoOP-10EY*	0.5	0.9	106	37.50	30.00	25.00
monoOP-10CY	....	....	....	24.00	19.25	16.00

*$TCI_{OS}+$ = 50 pA/° C max. *100–249 quantity.

monoMAT-01 MATCHED DUAL TRANSISTORS

Monolithic dual NPN transistors with extremely tight matching and temperature tracking characteristics for use in amplifiers, voltage regulators, preamps, etc. Very low noise and high current gain at low collector currents allow use in micropower circuits; linear V_{be} vs. log I_C makes monoMAT-01 excellent for log-antilog amplifier and multiplier circuitry. Six-pin TO-99 type package allows direct replacement of all monolithic dual transistors and many JEDEC (2N) part numbers.

PMI Type	Maximum I_b* nA	Maximum I_{OS}* nA	Minimum *B**	Minimum LV_{CEO} V	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
monoMAT-01AH†	20	0.6	500	45	$9.00	$7.20	$6.00
monoMAT-01GH‡	40	3.2	250	45	3.75	3.00	2.50
monoMAT-01H†	30	0.8	330	60	7.50	6.00	5.00
monoMAT-01FH‡	40	3.2	250	60	5.60	4.50	3.75

*Values at I_C = 10 μA. †V_{OS} = 0.1 mV max.; TCV_{OS} = 0.5 μV/° C max. ‡V_{OS} = 0.5 mV max.; TCV_{OS} = 1.8 μV/° C max.

SUPERIOR SECOND SOURCE OPERATIONAL AMPLIFIERS

Highly improved performance versions of popular industry standard operational amplifiers allow instant upgrading of systems without special selections. Direct replacements; no redesign required. All devices have PMI's exclusive "Triple-Passivation" process for best noise, reliability and long term stability.

SSS725 Series: Provides tremendous improvements of all DC input specs and noise.

SSS741 Series: Provides vastly improved input specs plus 1.2 V/μsec slew rate; 2.2 MHz bandwidth for applications requiring greater output speed.

SSS747 (Dual 741) Series: Also provides improved input and output performance over standard types.

PMI Type SSS-	Maximum V_{OS} mV	Maximum I_{OS} nA	Maximum I_B nA	Minimum CMRR dB	Minimum PSRR dB	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
725AJ*	0.1	1	70	120	114	$76.25	$66.00	$50.75*
725AP*	0.1	1	70	120	114	102.75	82.25	68.50*
725J†	0.5	5	80	120	106	32.50	25.95	21.60
725P†	0.5	5	80	120	106	43.75	35.00	29.25
725BJ†	0.75	5	80	110	106	21.00	16.75	13.95
725BP†	0.75	5	80	110	106	28.25	22.75	18.85
725EJ*	0.5	5	80	120	106	24.50	19.50	16.30
725EP*	0.5	5	80	120	106	33.00	26.50	22.00
725CJ‡	1.3	13	110	100	100	10.15	8.10	6.75
725CP‡	1.3	13	110	100	100	13.50	10.75	9.00
741J	2.0	5	50	80	80	17.25	13.75	11.50
741P	2.0	5	50	80	80	23.25	18.60	15.50
741GJ	5.0	25	100	70	77	6.00	4.75	3.95
741GP	5.0	25	100	70	77	7.50	6.00	4.95
741BJ	2.0	5	50	80	80	7.65	6.15	5.10
741BP	2.0	5	50	80	80	10.25	8.25	6.85
741CJ	6.0	25	100	70	77	2.10	1.70	1.40
741CP	6.0	25	100	70	77	2.85	2.30	1.90
747K	2.0	5	50	80	80	45.00	36.00	30.00
747P	2.0	5	50	80	80	60.00	48.00	40.00
747GK	5.0	20	100	70	77	15.00	12.00	10.00
747GP	5.0	20	100	70	77	19.50	15.50	13.00
747BK	2.0	5	50	80	80	22.50	18.00	15.00
747BP	2.0	5	50	80	80	30.00	24.00	20.00
747CK	5.0	20	100	70	77	9.00	7.25	6.00
747CP	5.0	20	100	70	77	12.00	9.75	8.00

*TCV_{OS} = 0.6 μV/° C max. †TCV_{OS} = 1.0 μV/° C max. ‡TCV_{OS} = 1.5 μV/° C max. *100–249 quantity.

monoCMP-01 AND monoCMP-02 PRECISION VOLTAGE COMPARATORS

Monolithic voltage comparators combining high speed with outstanding DC input parameters and ease of application. Can be operated from ±15 V or single +5 V supply. High current TTL output needs no pull-up resistor, has fanout of 8 loads. Convenient offset nulling, free from oscillation. Direct replacement for 111-type for performance improvements. Select monoCMP-01 for fastest response; monoCMP-02 for best DC accuracy. Response time = 150 nsec max., -01 Series; 230 nsec max., -02 Series. TCV_{OS} = 1.0 μV/° C typ. (-01CJ, -01CY, -02CJ, -02CY, 1.2 μV/° C).

PMI Type	Maximum V_{OS} mV	Maximum I_{OS} nA	Maximum I_b nA	Min. Gain V/mV	Net Each, Lots of 1-24	Net Each, Lots of 25-99	Net Each, Lots of 100-999
monoCMP-01J	0.8	25	600	200	$18.00	$14.50	$12.00
monoCMP-01Y	0.8	25	600	200	21.75	17.50	14.50
monoCMP-01EJ	0.8	25	600	200	11.25	9.00	7.50
monoCMP-01EY	0.8	25	600	200	13.50	10.75	9.00
monoCMP-01CJ	2.8	80	900	100	4.95	3.95	3.25
monoCMP-01CY	2.8	80	900	100	6.35	5.10	4.25
monoCMP-02J	0.8	3.0	50	200	22.50	18.00	15.00
monoCMP-02Y	0.8	3.0	50	200	28.75	23.00	19.25
monoCMP-02EJ	0.8	3.0	50	200	15.00	12.00	10.00
monoCMP-02EY	0.8	3.0	50	200	18.75	15.00	12.50
monoCMP-02CJ	2.8	15.0	100	100	4.95	3.95	3.25
monoCMP-02CY	2.8	15.0	100	100	6.35	5.10	4.25

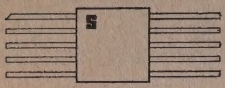
monoDRV-01 HIGH VOLTAGE DISPLAY DRIVER

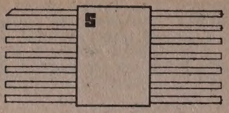
Designed to drive the cathode segments of high voltage gas discharge numerical displays such as Burroughs Panaplex*, Nixie* and Sperry types. Contains suitable networks for interface with MOS logic and DC restoration in multiplexed applications. Each section has minimum breakdown voltage of 145 V. Packaged in 14-pin DIP, each device contains five sections; two devices required for typical seven-to-ten segment display. Can also be used as high breakdown NPN transistor array. Temperature range, −25° C to +85° C.

*Registered Burroughs Corp. trademark.

PMI Type monoDRV-01Y—Net Each, Lots of 1–24.....**$4.50**
Net Each, Lots of: 25–99.......**$3.50**; 100–999....... **2.95**

Signetics BIPOLAR DIGITAL INTEGRATED CIRCUITS


Q, W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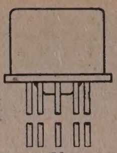
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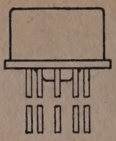
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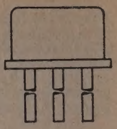
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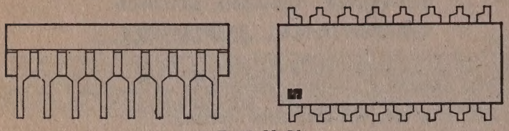
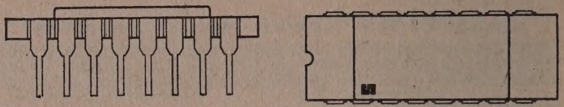

A, B, F, N, Y


I

7400/5400 SERIES

The 74/54XX logic family is medium speed TTL, and high speed TTL integrated circuits. The family includes a multiple number of functions in a variety of packages. The 74XX devices are characterized for the limited temperature range of 0° C to +70° C. The 54XX devices are characterized for the full military temperature range of −55° C to +125° C.

Prefix Indicates Temperature Range: N or **NE**, 0° C to +70° C; **S** or **SE**, −55° C to +125° C.

Final Suffix Indicates Package Type: Signetics Packages are as follows: **A**, 14-Lead Dual In-Line, Molded. **B**, 16-Lead Dual In-Line, Molded. **DA**, TO-3 Solid Header. **DB**, TO-5 Solid Header. **F**, 14-Lead, 16-Lead and 24-Lead Dual In-Line Cerdip. **I**, 14-Lead, 16-Lead, 18-Lead, 22-Lead, 24-Lead, 28-Lead and 40-Lead Dual In-Line Ceramic. **K**, 10-Lead, TO-5 Header, Tall Can. **L**, 10-Lead, TO-5 Header, Short Can. **N, NX**, 24-Lead, Dual In-Line, Molded. **Q**, 10-Lead, 14-Lead, 16-Lead and 24-Lead Flat, Ceramic. **T**, 8-Lead, TO-5 Header. **V**, 8-Lead, Dual In-Line, Molded. **W**, 10-Lead, 14-Lead and 16-Lead Flat, Cerpac. **XA**, 18-Lead, Dual In-Line, Molded. **XC**, 22-Lead, Dual In-Line, Molded.

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
N7400A	Quad 2-input positive NAND gate	$ 0.60	$ 0.48	$ 0.31
N7400F		2.33	1.75	1.21
S5400A		2.33	1.85	1.50
S5400F		3.05	2.45	1.80
S5400J		5.31	4.23	3.43
N7401A	Quad 2-input positive NAND gate with open collector output	.60	.48	.31
N7401F		2.33	1.75	1.21
S5401A		2.33	1.85	1.50
S5401F		3.05	2.45	1.80
S5401J		5.31	4.23	3.43
N7402A	Quad 2-input positive NOR gate	.60	.48	.31
N7402F		2.33	1.75	1.21
S5402A		2.67	2.12	1.72
S5402F		3.35	2.70	2.00
S5402Q		6.10	4.86	3.94
N7403A	Quad 2-input positive NAND gate with open collector output	.60	.48	.31
N7403F		2.33	1.75	1.21
S5403A		2.33	1.85	1.50
S5403F		3.35	2.70	2.00
N7404A	Hex inverter	.75	.60	.40
N7404F		2.80	2.20	1.78
S5404A		2.91	2.32	1.88
S5404F		3.80	3.05	2.50
S5404W		6.64	5.28	4.28
N7405A	Hex inverter with open collector output	.75	.60	.40
N7405F		2.80	2.20	1.78
S5405A		2.91	2.32	1.88
S5405F		3.80	3.05	2.50
S5405W		6.64	5.28	4.28
N7406A	Hex inverter buffer/driver with open collector high voltage outputs	3.50	2.79	1.77
N7406F		4.70	4.25	3.44
S5406A		5.25	4.18	3.39
S5406F		11.96	9.52	7.73
S5406Q		11.96	9.52	7.73
N7407A	Hex buffer/driver with open collector high voltage outputs	3.50	2.79	1.77
N7407F		4.70	4.25	3.44
S5407A		5.25	4.18	3.39
S5407F		11.96	9.52	7.73
S5407Q		11.96	9.52	7.73
N7408A	Quad 2-input positive AND gates	.78	.63	.40
N7408F		2.33	1.75	1.21
S5408A		2.55	2.03	1.65
S5408F		3.95	3.20	2.70
S5408Q		5.82	4.64	3.76
N7409A	Quad 2-input AND gate with open collector outputs	.78	.63	.40
N7409F		2.33	1.75	1.21
S5409A		2.55	2.03	1.65
S5409F		3.95	3.20	2.70
S5409Q		5.82	4.63	3.76
N7410A	Triple 3-input positive NAND gate	.60	.48	.31
N7410F		2.33	1.75	1.21
S5410A		2.33	1.85	1.50
S5410F		3.05	2.45	1.80
S5410J		5.31	4.23	3.43
N7411A	Triple 3-input positive AND gate	.78	.63	.40
N7411F		2.33	1.75	1.21
S5411A		2.55	2.03	1.65
S5411F		3.95	3.20	2.70
S5411J		5.82	4.64	3.76
N7413A	Dual NAND Schmitt trigger	$ 2.43	$ 1.93	$ 1.50
N7413F		3.50	2.80	2.27
S5413A		6.40	5.10	4.50
S5413F		4.40	4.07	3.52
S5413Q		8.31	6.62	5.30
N7414A		4.30	3.32	2.50
N7414F		6.72	5.36	3.90
N7416A	Hex inverter buffer/driver with open collector high voltage outputs	2.92	2.32	1.64
N7416F		4.00	3.20	2.59
S5416A		4.34	3.48	2.82
S5416F		9.96	7.93	6.43
S5416Q		9.96	7.93	6.43
N7417A	Hex buffer/driver with open collector high voltage outputs	2.92	2.32	1.64
N7417F		4.00	3.20	2.59
S5417A		4.34	3.48	2.82
S5417F		9.96	7.93	6.43
S5417Q		9.96	7.93	6.43
N7420A	Dual 4-input positive NAND gate	.60	.48	.31
N7420F		2.33	1.75	1.21
S5420A		1.99	1.58	1.29
S5420F		3.05	2.45	1.80
S5420J		4.50	3.58	2.91
N7421A	Dual 4-input positive AND gate	.78	.63	.40
N7421F		2.33	1.75	1.21
S5421A		2.55	2.03	1.65
S5421F		3.05	2.45	1.80
S5421J		5.82	4.64	3.76
N7426A	Quad 2-input high voltage interface NAND gate	1.04	.85	.47
N7426F		2.33	1.75	1.21
S5426A		2.80	2.23	1.80
S5426F		3.20	2.55	1.87
N7430A	8-input positive NAND gate	.60	.48	.31
N7430F		2.33	1.75	1.21
S5430A		1.99	1.58	1.29
S5430F		3.05	2.45	1.80
S5430J		4.50	3.58	2.91
N7432A	Quad 2-input positive-OR gate	.81	.65	.48
N7432F		1.73	1.37	1.00
S5432A		2.84	2.20	1.81
S5432F		4.65	3.71	2.70
S5432W		6.84	5.44	4.50
N7437A	Quad 2-input positive NAND buffer	1.27	1.01	.75
N7437F		3.20	2.50	2.02
S5437A		2.59	2.21	2.01
S5437F, W		7.42	5.91	4.38
N7438A	Quad 2-input positive NAND buffer with open collector output	1.27	1.01	.75
N7438F		3.20	2.50	2.02
S5438A		2.59	2.21	2.01
S5438F, W		7.42	5.91	4.38
N7439A	Quad 2-input positive NAND buffer with open collector output	1.39	1.11	.85
N7439F		3.20	2.50	2.02
S5439A		2.84	2.43	2.21
S5439F, Q		8.16	6.50	4.81
N7440A	Dual 4-input positive NAND buffer	.60	.48	.31
N7440F		2.10	2.00	1.62
S5440A		2.67	2.12	1.72
S5440F		3.50	2.80	2.10
S5440Q		6.10	4.86	3.94
N7441B	BCD-to-decimal decoder/driver with blanking	5.40	4.32	2.60
S5441B		23.81	18.96	15.40
N7442B	BCD-to-decimal decoder	3.36	2.68	1.45
N7442F		11.00	9.00	7.29
S5442B		11.90	9.48	7.69
S5442F, R		27.05	21.54	17.49
N7443B	Excess 3-to-decimal decoder	4.75	3.76	1.45
N7443F		11.00	9.00	7.29
S5443B		11.90	9.48	7.69
S5443F, R		27.05	21.54	17.49
N7444B	Excess 3-gray-to-decimal decoder	4.75	3.76	1.45
N7444F		11.00	9.00	7.29
S5444B		11.90	9.48	7.69
S5444F, R		27.05	21.54	17.49
N7445B	BCD-to-decimal decoder/driver with 30 V output	5.95	4.72	2.63
N7445F		15.00	12.10	9.80
N7446B	BCD-to-seven segment decoder/driver with 30 V output	6.30	5.05	2.20
N7446F		14.30	11.00	8.91
S5446F		29.75	23.69	19.24

7400/5400 SERIES (CONT'D)

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N7447B	BCD-to-seven segment decoder/driver with 15 V output	$ 2.85	$ 2.27	$ 1.68
N7447F		12.80	10.60	8.59
S5447F		27.05	21.54	17.49
N7448B	BCD-to-seven segment decoder/driver	4.75	3.76	1.76
N7448F		12.80	10.60	8.59
N7450A	Expandable dual 2-wide 2-input AND-OR-INVERT gates	.60	.48	.31
N7450F		2.33	1.75	1.21
S5450A		2.33	1.85	1.50
S5450F		3.05	2.45	1.80
S5450J		5.31	4.23	3.43
N7451A	Expandable dual 2-wide 2-input AND-OR-INVERT gates	.60	.48	.31
N7451F		2.33	1.75	1.21
S5451A		2.33	1.85	1.50
S5451F		3.05	2.45	1.80
S5451J		5.31	4.23	3.43
N7453A	Expandable 4-wide 2-input AND-OR-INVERT gate	.60	.48	.31
N7453F		2.33	1.75	1.21
S5453A		2.33	1.85	1.50
S5453F		3.05	2.45	1.80
S5453J		5.31	4.23	3.43
N7454A	4-wide 2-input AND-OR-INVERT gate	.60	.48	.31
N7454F		2.33	1.75	1.21
S5454A		2.33	1.85	1.50
S5454F		3.05	2.45	1.80
S5454J		5.31	4.23	3.43
N7460A	Dual 4-input expander	.60	.48	.31
N7460F		2.33	1.75	1.21
S5460A		1.74	1.39	1.12
S5460F		2.75	2.20	1.60
S5460J		3.98	3.17	2.57
N7470A	Positive edge-triggered J-K flip-flops (AND inputs)	1.00	.80	.56
N7470F		3.00	2.40	1.94
S5470A		3.49	2.78	2.26
S5470F		5.00	4.00	3.00
S5470J		7.97	6.34	5.15
N7472A	J-K master-slave flip-flops (AND inputs)	.93	.63	.44
N7472F		3.00	2.40	1.94
S5472A		3.25	2.59	2.11
S5472F		4.70	3.80	2.95
S5472J		7.43	5.92	4.80
N7473A	Dual J-K master-slave flip-flops	1.55	1.25	.67
N7473F		5.00	4.00	3.24
S5473A		5.36	4.26	3.47
S5473F		7.80	6.25	5.20
S5473J		12.21	9.72	7.90
N7474A	Dual D-type edge-triggered flip-flops	1.35	1.10	.67
N7474F		5.00	4.00	3.24
S5474A		4.66	3.71	3.01
S5474F		6.30	5.05	4.00
S5474J		10.61	8.44	6.85
N7475B	Quadruple bistable latches	2.73	1.85	1.25
N7475F		6.00	4.60	3.73
S5475B		8.19	6.52	5.25
S5475F		8.85	7.10	5.10
N7476B	Dual J-K master-slave flip-flop with preset and clear	1.75	1.40	.71
N7476F		3.00	2.60	2.15
S5476B		5.65	4.50	3.65
S5476F		8.25	6.60	5.30
S5477Q	Quadruple bistable latch	18.71	14.89	12.10
N7480A	Gated full adder	2.10	1.68	1.09
N7480F		3.20	2.60	2.11
S5480A		6.28	5.00	4.06
S5480F, Q		14.28	11.37	9.24
N7483B	4-bit binary full adder (look ahead carry)	3.40	2.70	1.86
N7483F		7.60	6.05	4.90
S5483B		14.82	11.80	9.58
S5483F, R		26.64	21.22	17.20
N7485B	4-bit magnitude comparators	5.00	4.03	2.98
N7485F		8.03	6.40	4.70
S5485B		9.00	7.20	5.30
S5485F		10.91	8.70	6.15
S5485W		25.63	20.41	15.82
N7486A	Quad 2-input exclusive-OR gate	1.10	.86	.67
N7486F		2.00	1.10	.92
S5486F, J		9.88	7.86	6.37
N7490A	Decade counter	3.04	2.42	1.32
N7490F		3.70	2.95	2.38
S5490A		9.57	7.62	6.20
S5490F, Q		21.78	17.35	14.10
N7491A	8-bit shift register	4.33	3.45	1.86
N7491F		6.70	5.35	4.31
S5491A		12.96	10.32	8.38
S5491F		21.78	17.35	14.10
S5491Q		21.22	16.89	13.72
N7492A	Divide-by-twelve counter (divide-by-two and divide-by-six)	3.03	2.40	1.32
N7492F		3.70	2.95	2.38
S5492A		9.57	7.62	6.20
S5492F, Q		21.78	17.35	14.10
N7493A	4-bit binary counter	2.18	1.74	1.28
N7493F		3.70	2.95	2.38
S5493A		9.57	7.62	6.20
S5493F		21.78	17.35	14.10
S5493Q		21.78	17.35	14.10

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N7494B	4-bit shift register (parallel-in, serial-out)	$ 5.57	$ 4.43	$ 1.50
N7494F		5.75	4.05	3.28
S5494F		21.78	17.35	14.10
S5494R		23.32	18.57	15.10
N7495A	4-bit universal shift registers (parallel-in, parallel-out)	3.45	2.75	1.50
N7495F		5.75	4.05	3.28
S5495A		10.27	8.17	6.64
S5495F		21.78	17.35	14.10
N7496B	5-bit shift registers (parallel-in, parallel-out)	2.33	1.85	1.39
N7496F		8.10	6.50	5.26
S5496B		12.31	9.80	7.95
S5496F, R		27.62	21.99	17.87
N74100F	4-bit bistable latches	9.73	7.74	6.27
N74100N		5.57	4.43	3.27
S54100N		13.68	10.90	8.45
S54100F		26.57	21.16	17.45
S54100W		31.50	26.90	20.65
N74107A	Dual J-K master-slave flip-flops	1.55	1.25	.67
N74107F		2.45	1.95	1.37
S54107A		5.36	4.26	3.47
S54107F		12.21	9.72	7.90
N74121A	Monostable multivibrator	1.65	1.30	.67
N74121F		7.80	7.20	5.83
S54121A		8.10	6.45	5.24
S54121F		10.40	8.20	6.42
S54121Q		14.57	11.61	9.42
N74122A	Retriggerable monostable multivibrator with clear	1.95	1.58	.99
N74122F		6.00	4.62	3.78
N74123B	Dual retriggerable monostable multivibrator with clear	4.78	3.80	2.70
N74123F		8.50	6.00	4.86
S54123B		17.29	13.70	9.80
S54123F		20.45	12.10	11.00
N74141B	BCD-to-decimal decoder/driver	4.34	3.45	2.40
S54141B		14.53	11.60	9.42
N74145B	BCD-to-decimal decoder/driver with 15 V output	4.71	3.76	1.87
N74145F		13.40	10.80	8.75
N74150F	16-line to 1-line data selector/multiplexer	12.00	9.50	7.69
N74150N		6.98	5.57	3.78
S54150F		24.57	20.81	16.20
S54150N		17.81	14.19	10.89
S54150P		25.51	20.31	16.40
N74151B	8-line to 1-line data selector/multiplexer	5.12	4.08	3.10
N74151F		9.50	4.80	3.89
S54151B		12.79	12.05	10.76
S54151F, W		16.03	12.77	10.30
S54152W	8-line to 1-line data selector/multiplexer	16.03	12.77	10.30
N74153B	Dual 4-line to 1-line data selector/multiplexer	4.67	3.70	2.95
N74153F		7.80	6.90	5.59
S54153F,R		16.03	12.77	9.90
N74154F	4-line to 16-line decoder/demultiplexer	9.80	7.80	6.32
N74154N		5.74	4.57	3.56
S54154F		21.60	17.20	13.95
S54154N		13.20	10.51	8.53
S54154P		21.60	17.20	13.95
N74155B	Dual 2-line to 4-line decoder/demultiplexer (with open collector output)	4.45	3.55	2.82
N74155F		6.00	5.00	3.90
S54155B		6.69	5.33	4.32
S54155F		8.10	7.40	6.10
S54155W		15.23	12.13	8.30
N74156B	Dual 2-line to 4-line decoder/demultiplexer (with open collector output)	4.45	3.55	2.82
N74156F		6.00	5.00	3.90
S54156B		6.69	5.33	4.32
S54156F		8.10	7.40	6.10
S54156W		15.23	12.13	8.30
N74157B	Quadruple 2-input data selector/multiplexer	3.12	2.49	2.20
N74157F		3.70	3.40	2.75
S54157B, F		7.81	6.22	5.75
S54157W		15.23	12.13	9.83
N74158B	Quadruple 2-input data selector/multiplexer	3.30	2.49	2.20
N74158F		3.70	3.40	2.75
S54158F		7.81	6.22	5.00
S54158W		15.23	12.13	9.83
N74160B	Synchronous decade counter	3.55	2.83	2.20
N74160F		9.00	7.00	5.00
S54160B		7.00	6.10	5.10
S54160F		18.02	14.35	9.94
S54160W		28.84	22.96	13.14
N74161B	Synchronous 4-bit binary counter	3.55	2.83	2.20
N74161F		9.00	7.00	5.00
S54161B		7.00	6.10	5.10
S54161F		18.02	14.35	9.94
S54161W		28.84	22.96	13.14
N74162B	Fully synchronous decade counter	3.55	2.83	2.20
N74162F		9.00	7.00	5.00
S54162B		7.00	6.10	5.10
S54162F		18.02	14.35	9.94
S54162W		28.84	22.96	13.14
N74163B	Fully synchronous 4-bit binary counter	3.55	2.83	2.20
N74163F		9.00	7.00	5.00
S54163B		7.00	6.10	5.10
S54163F		18.02	14.35	9.94
S54163W		28.84	22.96	13.14

Signetics BIPOLAR DIGITAL INTEGRATED CIRCUITS

7400/5400 SERIES (CONT'D)

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N74164A	8-bit parallel-out serial shift registers	$ 6.55	$ 5.22	$ 3.98
N74164F		10.00	7.10	5.75
S54164A		11.80	10.50	8.70
S54164F, W		14.50	12.00	9.94
N74165B	Parallel-load 8-bit shift register	6.55	5.22	4.05
N74165F		10.00	7.10	5.75
S54165F		20.02	15.94	11.10
N74166B	8-bit shift register	6.55	5.22	3.98
N74166F		7.00	6.10	4.94
S54166F		20.02	15.94	11.10
S54166R		23.73	18.64	16.20
N74170B	4 x 4 register file	8.70	6.93	5.10
N74170F		10.88	8.60	6.90
S54170B		12.40	11.00	10.05
S54170F		21.76	17.33	12.00
S54170W		16.00	14.50	12.00
N74174B	Hex D-type flip-flop with clear	4.73	3.76	2.90
N74174F		5.91	4.70	3.85
N74175B	Quadruple D-type edge-triggered flip-flops	4.00	3.19	2.58
N74175F		5.01	3.99	3.25
S54175B		7.00	6.05	4.80
S54175F		10.01	7.97	6.00
S54175W		15.50	14.00	11.00
N74180A	8-bit odd/even parity generator/checker	4.36	3.48	1.91
N74180F		4.60	3.66	2.20
S54180A		14.17	11.28	9.15
S54180F		10.00	9.10	6.50
S54180Q		25.51	20.31	16.50
N74181F	High-speed arithmetic logic	29.00	23.12	18.73
N74181N		23.72	18.91	13.90
S54181F, W		46.44	39.00	23.10
N74182B	Look-ahead carry generator	5.21	4.15	3.01
N74182F		6.00	5.20	4.21
S54182B		8.02	6.39	4.95
S54182F		15.55	13.10	9.00
S54182R		18.00	15.65	13.00
N74192B	Synchronous decade up/down counter with preset inputs	7.97	6.35	5.00
N74192F		16.50	12.55	10.16
S54192B		17.01	13.54	10.61
S54192F		25.51	20.31	18.08
S54192W		38.75	30.86	25.08
N74193B	Synchronous 4-bit binary up/down counter with preset inputs	7.97	6.35	5.00
N74193F		16.50	12.55	10.16
S54193B		17.01	13.54	10.61
S54193F		25.51	20.31	18.08
S54193W		38.75	30.86	25.08
N74194B	4-bit bidirectional universal shift registers	3.55	2.83	2.00
S54194B		7.50	6.25	5.00
S54194F		10.48	8.34	6.40
S54194W		16.77	13.35	10.00
N74195B	4-bit parallel-access shift reg.	4.30	3.95	3.45
N74198F	8-bit parallel-in, parallel-out, bidirectional shift register	15.60	11.18	9.05
N74198N		7.70	6.15	4.50
S54198F		35.51	28.19	15.05
S54198W		36.65	28.19	15.75
N74199F	8-bit parallel-in, parallel-out shift register (J-K inputs to first stage)	15.60	11.10	9.05
N74199N		7.70	6.15	4.50
S54199F		35.51	28.19	15.05
S54199W		36.65	28.19	15.75
N74H00A	Quadruple 2-input positive NAND gate	.95	.74	.38
N74H00F		2.91	1.90	1.20
S54H00A		2.91	2.32	1.88
S54H00F		4.05	3.45	2.90
S54H00Q		6.64	5.28	4.29
N74H01A	Quadruple 2-input positive NAND gate with open collector output	.95	.74	.38
N74H01F		2.91	1.90	1.20
S54H01A		2.91	2.32	1.88
S54H01F		4.05	3.45	2.90
S54H01Q		6.64	5.28	4.29
N74H04A	Hex inverter	1.07	.86	.47
N74H04F		3.35	2.30	2.10
S54H04A		3.64	2.90	2.35
S54H04F		4.80	4.05	3.50
S54H04W		8.29	6.60	5.36
N74H05A	Hex inverter with open collector output	1.07	.86	.47
N74H05F		3.35	2.30	2.10
S54H05A		3.64	2.90	2.35
S54H05F		4.80	4.05	3.50
S54H05Q		8.29	6.60	5.36
N74H08A	Quadruple 2-input positive AND gate	1.07	.86	.47
N74H08F		2.91	2.30	1.20
S54H08A		3.19	2.54	2.06
S54H08F		4.95	4.20	3.50
S54H08Q		7.28	5.80	4.70
N74H10A	Triple 3-input positive NAND gate	.95	.74	.38
N74H10F		2.91	2.30	1.20
S54H10A		2.91	2.32	1.88
S54H10F		4.95	4.20	3.50
S54H10W		7.28	5.80	4.70
N74H11A	Triple 3-input positive AND gate	.95	.75	.38
N74H11F		2.91	2.30	1.20
S54H11A		3.19	2.54	2.06
S54H11F		4.95	4.20	3.50
S54H11W		7.28	5.80	4.70

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N74H20A	Dual 4-input positive NAND gate	$ 0.95	$ 0.74	$ 0.38
N74H20F		2.91	2.30	1.20
S54H20A		2.46	1.96	1.59
S54H20F		4.05	3.45	2.70
S54H20Q		5.63	4.48	3.64
N74H21A	Dual 4-input positive AND gate	.95	.75	.38
N74H21F		2.91	2.30	1.20
S54H21A		3.19	2.54	2.06
S54H21F		4.05	3.45	2.90
S54H21Q		7.28	5.80	4.70
N74H22A	Dual 4-input positive NAND gate with open collector output	.95	.74	.38
N74H22F		2.91	2.30	1.20
S54H22A		2.46	1.96	1.59
S54H22F		4.05	3.45	2.90
S54H22Q		5.63	4.48	3.64
N74H30A	8-input positive NAND gate	.95	.74	.38
N74H30F		2.91	2.30	1.20
S54H30A		2.46	1.96	1.59
S54H30F		4.05	3.45	2.90
S54H30Q		5.63	4.48	3.64
N74H40A	Dual 4-input positive NAND buffer	.95	.75	.38
N74H40F		2.91	2.30	1.20
S54H40A		3.19	2.54	2.06
S54H40F		4.50	3.80	2.60
S54H40Q		7.28	5.80	4.70
N74H50A	Expandable dual 2-wide 2-input AND-OR-INVERT gate	.95	.74	.38
N74H50F		2.91	2.30	1.20
S54H50A		2.91	2.32	1.88
S54H50F		4.05	3.45	2.90
S54H50Q		6.64	5.28	4.29
N74H51A	Dual 2-wide 2-input AND-OR-INVERT gate	.95	.74	.38
N74H51F		2.91	2.30	1.20
S54H51A		2.91	2.32	1.88
S54H51F		4.05	3.45	2.90
S54H51Q		6.64	5.28	4.29
N74H52A	Expandable 2-2-2-3-input AND-OR gate	.95	.74	.38
N74H52F		2.91	2.30	1.20
S54H52A		2.91	2.32	1.88
S54H52F		4.05	3.45	2.90
S54H52Q		6.64	5.28	4.29
N74H53A	Expandable 2-2-2-3-input AND-OR-INVERT gate	.95	.74	.38
N74H53F		2.91	2.30	1.20
S54H53A		2.91	2.32	1.88
S54H53F		4.05	3.45	2.90
S54H53Q		6.64	5.28	4.29
N74H54A	4-wide 2-input AND-OR-INVERT gate	.95	.74	.38
N74H54F		2.91	2.30	1.20
S54H54A		2.91	2.32	1.88
S54H54F		4.05	3.45	2.90
S54H54Q		6.64	5.28	4.29
N74H55A	Expandable 2-wide 4-input AND-OR-INVERT gates	.95	.74	.38
N74H55F		2.91	2.30	1.20
S54H55A		2.91	2.32	1.88
S54H55F		4.05	3.45	2.90
S54H55Q		6.64	5.28	4.29
N74H60A	Dual 4-input expander	.95	.74	.38
N74H60F		2.91	2.30	1.20
S54H60A		2.18	1.74	1.41
S54H60F		3.75	3.20	2.10
S54H60Q		4.97	3.96	3.21
N74H61A	Triple 3-input expander	.95	.74	.38
N74H61F		2.91	2.30	1.20
S54H61A		2.18	1.74	1.41
S54H61F		3.75	3.20	2.10
S54H61Q		4.97	3.96	3.21
N74H62A	3-2-2-3-input AND-OR-expander	.95	.74	.38
N74H62F		2.91	2.30	1.20
S54H62A		2.18	1.74	1.41
S54H62F		3.75	3.20	2.10
S54H62Q		4.97	3.96	3.21
N74H70F		4.66	3.76	2.89
N74H71A	J-K master-slave flip-flop (AND-OR inputs)	1.46	1.16	.84
N74H71F		4.66	3.76	2.89
S54H71A		4.66	3.71	3.01
S54H71F		6.70	5.80	4.60
S54H71Q		10.61	8.44	7.02
N74H72A	J-K master-slave flip-flop (AND inputs)	1.25	1.00	.71
N74H72F		4.66	3.76	2.89
S54H72A		4.66	3.71	3.01
S54H72F		6.70	5.80	4.60
S54H72Q		10.61	8.44	7.02
N74H73A	Dual J-K master-slave flip-flop	2.07	1.65	.98
N74H73F		6.80	5.60	4.00
S54H73A		7.58	6.03	4.89
S54H73F		8.80	7.25	5.85
S54H73Q		17.25	13.73	11.42
N74H74A	Dual D-type edge-triggered flip-flop	2.07	1.65	.98
N74H74F		5.50	4.20	3.10
S54H74A		5.83	4.64	3.76
S54H74F		6.80	6.05	5.00
S54H74Q		10.53	8.38	6.97
N74H76B	Dual J-K master-slave flip-flop with preset and clear	2.25	1.80	.99
N74H76F		7.80	5.16	4.00
S54H76B		8.01	6.38	5.18
S54H76B		9.00	7.50	5.80

Signetics BIPOLAR DIGITAL INTEGRATED CIRCUITS

7400/5400 SERIES (CONT'D)

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
N74H101A N74H101F S54H101F S54H101W	J-K negative edge-triggered flip-flop with AND-OR inputs (50 MHz)	$ 1.36 4.40 6.80 10.61	$ 1.09 3.50 5.71 8.44	$ 0.84 2.70 4.64 7.20
N74H102A N74H102F S54H102F S54H102W	J-K negative edge-triggered flip-flops with AND inputs (50 MHz)	1.36 4.40 6.80 10.61	1.09 3.50 5.71 8.44	.84 2.70 4.64 7.20
N74H103A N74H103F S54H103A S54H103F S54H103R	Dual J-K negative edge-triggered flip-flop (50 MHz)	2.14 7.00 7.58 17.25 14.00	1.70 5.90 6.03 13.73 11.75	1.20 4.50 4.80 8.00 8.00
N74H106B N74H106F S54H106B S54H106F S54H106W	Dual J-K negative edge-triggered flip-flop (50 MHz) with preset and clear	1.85 8.00 8.01 18.14 12.18	1.45 6.00 6.38 14.44 10.01	1.02 4.70 5.00 7.00 7.00
N74H108A N74H108F S54H108F S54H108Q	Dual J-K negative edge-triggered flip-flop (50 MHz)	2.14 7.70 17.25 14.00	1.70 5.90 13.73 11.75	1.20 4.50 8.00 8.00

SCHOTTKY-CLAMPED 74S SERIES

N74S00A	Quadruple 2-input positive NAND gate	$ 1.39	$ 1.11	$0.86
N74S03A	Quadruple 2-input positive NAND gate with open collector output	1.39	1.11	.86
N74S04A	Hex inverter	1.69	1.35	1.04
N74S05A	Hex inverter with open collector output	2.65	2.11	1.64
N74S10A	Triple 3-input positive NAND gate	1.39	1.11	.86
N74S11A	Triple 3-input positive AND gate	1.39	1.11	.86
N74S15A	Triple 3-input positive AND gate with open collector output	1.39	1.11	.86
N74S20A	Dual 4-input positive NAND gate	1.39	1.11	.86
N74S22A	Dual 4-input positive NAND gate with open collector output	1.39	1.11	.86
N74S40A	Dual 4-input positive NAND buffers	1.39	1.11	.86
N74S64A	4-2-3-2-input AND-OR-INVERT gate	1.39	1.11	.86
N74S65A	4-2-3-2-input AND-OR-INVERT gates with open collector output	1.39	1.11	.86
N74S74A	Dual D-type edge-triggered flip-flop	2.79	2.22	1.73
N74S112A	Dual J-K negative edge-triggered flip-flop	3.20	2.55	1.98
N74S113A	Dual J-K negative edge-triggered flip-flops (80 MHz) with preset	3.20	2.55	1.98
N74S114A	Dual J-K negative edge-triggered flip-flops (80 MHz) w/ common clock, common clear	3.20	2.55	1.98
N74S140A	Dual 4-input positive NAND line drivers	1.80	1.44	1.11
N74S151B	8-input data selectors/multiplexers	9.60	7.65	5.41
N74S153B	Dual 4-line to 1-line data selectors/multiplexers	7.27	5.80	4.10
N74S157B	Quadruple 2-line to 1-line data selectors/multiplexers (non-inverting)	6.84	5.45	3.85
N74S158B	Quadruple 2-line to 1-line data selectors/multiplexers (inverting)	6.84	5.45	2.85
N74S174B	Hex D-type flip-flops with clear	13.09	10.44	7.70
N74S175B	Quadruple D-type flip-flops with clear	10.00	8.30	6.00
N74S194B	4-bit bidirectional universal shift registers	10.47	8.35	6.20
N74S251B	8-input data selectors/multiplexers with tristate outputs	9.60	7.65	5.41
N74S253B		13.00	10.50	8.75
N74S257B	Quadruple 2-line to 1-line data selectors/multiplexers with tristate outputs (non-inverting)	6.84	5.45	3.85
N74S258B	Quadruple 2-line to 1-line data selectors/multiplexers with tristate outputs (inverting)	6.84	5.45	3.85

8000 SERIES

BIPOLAR DIGITAL TTL

Cross-family compatibility in integrated circuits with Signetics Designer's Choice Logic (DCL). Family consists of the following compatible sub-families:

8100—Special purpose sub-systems. **8200**—Integrated monolithic sub-systems (MSI). **8400**—DTL flexibility at lower power consumption and higher fan-out than any other DTL family. **8800**—Classical high level TTL circuit design is utilized to provide low propagation delays and high noise immunity. **8H00**—High speed version of the 8800. **8T00**—Interface elements. The 8000 Series is available in commercial (prefix **N**) and military (prefix **S**) temperature ranges and a wide variety of package types.

SSI GATES

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
N8415A N8415J	Dual 5-input NAND gate with bare collector outputs	$ 2.25 4.29	$ 1.80 3.43	$ 1.45 2.86
N8416A N8416J	Dual 4-input NAND gate*	2.25 4.29	1.80 3.43	1.45 2.86
N8417A N8417J	Dual 3-input NAND gate with bare collector outputs*	2.25 4.29	1.80 3.43	1.45 2.86
N8440A N8440J	Dual AND-OR-INVERT gate	2.25 4.29	1.80 3.43	1.45 2.86
N8455A N8455J	Dual 4-input NAND gate driver	2.50 4.65	2.00 3.72	1.60 3.10
N8470A N8470J	Triple 3-input NAND gate	2.25 4.29	1.80 3.43	1.45 2.86
N8471A N8471J	Triple 3-input NAND gate with bare collector outputs	2.25 4.29	1.80 3.43	1.45 2.86
N8480A N8480J	Quad 2-input NAND gate	2.25 4.29	1.80 3.43	1.45 2.86
N8481A N8481J	Quad 2-input NAND gate with bare collector outputs	2.25 4.29	1.80 3.43	1.45 2.86
N8490A N8490J	Hex inverter	2.85 5.10	2.30 4.08	1.90 3.40
N8706A N8706J	Dual 5-input diode expander	1.80 2.90	1.40 2.30	1.15 1.90
N8731A N8731J	Quad 2-input diode expander	1.80 2.90	1.40 2.30	1.15 1.90
N8806A N8806J	Dual 4-input expander	1.03 2.65	.92 2.11	.79 1.71
N8808A N8808J	8-input NAND gate	1.27 2.99	1.01 2.38	.85 1.93
N8815A N8815J	Dual 4-input NOR gate	1.45 4.06	1.16 3.23	.98 2.63
N8816A N8816J	Dual 4-input NAND gate	1.27 2.99	1.01 2.38	.85 1.93
N8840A N8840J	Dual AND-OR-INVERT gate*	1.27 3.54	1.01 2.82	.85 2.28
N8848A N8848J	AND-OR-INVERT gate*	1.27 3.54	1.01 2.82	.85 2.28
N8855A N8855J	Dual 4-input power gate	1.45 4.06	1.16 3.23	.98 2.63
N8870A N8870J	Triple 3-input NAND gate	1.27 3.54	1.01 2.82	.85 2.28
N8875A N8875J	Triple 3-input NOR gate	1.45 4.06	1.16 3.23	.97 2.63
N8880A N8880J	Quad 2-input NAND gate	1.27 3.54	1.01 2.82	.85 2.28
N8881A N8881J	Quad 2-input NAND gate with bare collector outputs	1.27 3.54	1.01 2.82	.85 2.28
N8885A N8885J	Quad 2-input NOR gate	1.45 4.06	1.16 3.23	.98 2.63
N8890A N8890Q	Hex inverter	1.60 4.42	1.28 3.52	1.07 2.86
N8891A N8891Q	Hex inverter with bare collector outputs	1.60 4.42	1.28 3.52	1.07 2.86
N8H16A N8H16J	Dual 4-input NAND gate	1.97 3.75	1.57 2.99	1.28 2.43
N8H70A N8H70J	Triple 3-input NAND gate	2.33 4.86	1.85 3.87	1.50 3.14
N8H80A N8H80J	Quad 2-input gate	2.33 4.42	1.85 3.52	1.50 2.86
N8H90A N8H90Q	Hex inverter	2.91 5.54	2.32 4.41	1.88 3.58
N8T18A N8T18J	Dual 2-input NAND interface gate	4.15 14.10	3.31 11.25	2.76 9.40
N8T80A N8T80W	Quad 2-input NAND interface gate with bare collector outputs	4.15 14.10	3.31 11.25	2.76 9.40
N8T90A N8T90W	Hex inverter interface element with bare collector outputs	4.15 14.10	3.31 11.25	2.76 9.40

*Element incorporates fan-in expansion provision.

signetics BIPOLAR DIGITAL INTEGRATED CIRCUITS

8000 SERIES BIPOLAR DIGITAL TTL (CONT'D)

SSI FLIP-FLOPS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N8424A	Dual low power, RS/T binary flip-flop	$ 5.90	$4.70	$3.80
N8424J		8.76	7.00	5.84
N8425A	Dual AC binary flip-flop	5.90	4.70	3.80
N8425J		8.76	7.00	5.84
N8821J	Dual J-K binary flip-flop	8.14	6.47	5.25
N8822A		3.00	2.56	2.15
N8822J		8.14	6.47	5.25
N8824B		3.20	2.72	2.28
N8824R		8.33	6.66	5.55
N8825A	Multiple input J-K binary flip-flop	2.10	1.68	1.41
N8825J		5.31	4.23	3.43
N8826A	Dual high speed J-K binary flip-flop	3.00	2.56	2.15
N8826J		8.14	6.47	5.25
N8827A		3.00	2.56	2.15
N8827J		8.14	6.47	5.25
N8828A	Dual high speed D-type binary flip-flop	2.80	2.24	1.88
N8828J		7.07	5.63	4.57
N8829A	AND input J-K binary flip-flop	1.75	1.56	1.31
N8829J		4.95	3.94	3.20
N8H21A	Dual J-K binary flip-flop	6.07	4.83	3.92
N8H21Q		11.50	9.15	7.43
N8H22B		6.43	5.12	4.15

SSI ONE-SHOT

N8162A	One-shot multivibrator	$4.34	$3.46	$2.81
N8162J		9.72	7.74	6.29
N8T20B		7.50	6.00	5.00
N8T20F		8.25	6.60	5.50
N8T22A		3.00	2.40	2.00
N8T22F		3.75	3.00	2.50

MSI SCHOTTKY CLAMPED 82S SERIES

N82S06B	256-bit RAM (256 x 1) tristate outputs	$26.70	$19.80	$14.75
N82S06I		30.25	22.50	16.15
N82S07B	256-bit RAM (256 x 1) open collectors	26.70	19.80	14.75
N82S07I		30.25	22.50	16.15
N82S16B	Synchronous high-speed binary counter	40.00	28.00	19.95
N82S16I		45.00	32.70	22.80
N82S17B		40.00	28.00	19.95
N82S17I		45.00	32.70	22.80
N82S21F	64-bit high-speed write-while-read RAM (32 x 2)	9.35	8.15	7.05
N82S26I	1024-bit programmable ROM (256 x 4 PROM, w/OC)	49.00	46.30	41.60
N82S29I	N82S26I with tristate outputs	53.90	52.00	45.60
N82S30B	8-input multiplexer	7.13	5.70	4.75
N82S33B	2-input 4-bit multiplexer	6.44	5.15	4.28
N82S34B	2-input 4-bit multiplexer	6.44	5.15	4.28
N82S41A	Quad exclusive-OR	5.10	4.08	3.40
N82S50A	Binary-to-octal decoder	8.10	6.48	5.40
N82S52B	BCD-to-decimal decoder	8.10	6.48	5.40
N82S62A	9-bit parity generator and checker	11.40	9.12	7.60
N82S66B	2-input 4-bit multiplexer	6.44	5.15	4.28
N82S67B	2-input 4-bit multiplexer	6.44	5.15	4.28
N82S70A	4-bit shift register	7.86	6.28	5.24
N82S71B	4-bit shift register	7.86	6.28	5.24
N82S90A	Presettable high-speed decade counter	4.75	3.75	3.15
N82S91A	Presettable high-speed binary counter	4.75	3.75	3.15

MSI REGISTERS/LATCHES

N8200N	Dual 5-bit buffer register	$ 9.29	$ 7.42	$ 6.19
N8200P		21.50	17.15	14.30
N8201N	Dual 5-bit buffer register with D complement	9.29	7.42	6.19
N8201P		21.50	17.15	14.30
N8202N	10-bit buffer register	9.29	7.42	6.19
N8202P		21.50	17.15	14.30
N8203N	10-bit buffer register with D complement	9.29	7.42	6.19
N8203P		21.50	17.15	14.30
N8270A	4-bit shift register	3.14	2.50	2.09
N8270F		5.13	4.10	3.42
N8270Q		14.57	11.61	9.41
N8271B		3.14	2.50	2.09
N8271F		5.68	4.55	3.79
N8271R		16.03	12.77	10.35
N8273B	10-bit serial-in, parallel-out	5.00	4.05	3.34
N8273F		6.00	4.80	4.00
N8273R		13.10	10.60	8.74
N8274B	10-bit parallel-in, serial-out shift register	5.00	4.05	3.34
N8274F		6.22	4.98	4.15
N8275B	Quad latch	3.33	2.66	2.22
N8275F		3.99	3.19	2.66
N8275R		12.47	9.91	8.05
N8276A	8-bit shift register	7.47	6.13	4.99
N8276F		8.10	6.48	5.40
N8277B	Dual 8-bit shift register	11.17	8.70	7.45
N8277F		13.42	10.74	8.95

MSI MULTIPLEXERS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N8230B	8-input digital multiplexer	$ 3.39	$ 2.71	$ 2.26
N8230F		4.06	3.25	2.71
N8230R		8.90	7.09	5.76
N8231B	8-input digital multiplexer with bare collector outputs	3.39	2.71	2.26
N8231F		4.06	3.25	2.71
N8231R		8.90	7.09	5.76
N8232B	8-input digital multiplexer	3.39	2.71	2.26
N8232F		4.06	3.25	2.71
N8232R		8.90	7.09	5.76
N8233B	2-input, 4-bit digital multiplexer	3.30	2.64	2.20
N8233F		3.96	3.17	2.64
N8233R		8.90	7.09	5.76
N8234B	2-input, 4-bit digital multiplexer with bare collector outputs	3.30	2.64	2.30
N8234F		3.96	3.17	2.64
N8234R		8.90	7.09	5.76
N8235B	2-input, 4-bit digital multiplexer with bare collector outputs	3.30	2.64	2.30
N8235F		3.96	3.17	2.64
N8235R		8.90	7.09	5.76
N8263N	3-input, 4-bit digital multiplexer	10.92	8.74	7.28
N8263P		23.90	19.15	15.95
N8264N	S8263 with bare collector outputs	10.92	8.74	7.28
N8264P		23.90	19.15	15.95
N8266B	2-input, 4-bit digital multiplexer	4.20	3.35	2.72
N8266F		4.89	3.91	3.26
N8266R		8.90	7.09	5.76
N8267B	2-input, 4-bit digital multiplexer with bare collector outputs	4.20	3.35	2.72
N8267F		4.89	3.91	3.26
N8267R		8.90	7.09	5.76

MSI COUNTERS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N8280A	Presettable decade counter/storage register	$ 2.70	$ 2.16	$ 1.80
N8280F		3.90	3.12	2.60
N8280Q		14.53	11.57	9.40
N8281A	Presettable binary counter/storage register	2.70	2.16	1.80
N8281F		3.90	3.12	2.60
N8281Q		14.53	11.57	9.40
N8284A	Binary synchronous up/down counter	4.26	3.41	2.84
N8284F		5.05	4.04	3.37
N8284Q		20.98	16.78	13.98
N8285A	BCD synchronous up/down counter	4.26	3.41	2.84
N8285F		5.05	4.04	3.37
N8285Q		20.98	16.78	13.98
N8288A	Presettable divide-by-12 counter/storage register	2.70	2.16	1.80
N8288F		3.90	3.12	2.60
N8288Q		14.53	11.57	9.40
N8290A	High speed presettable decade counter	2.70	2.16	1.80
N8290F		5.28	4.22	3.52
N8290Q		15.98	12.73	10.33
N8291A	High speed presettable binary counter	2.70	2.16	1.80
N8291F		5.28	4.22	3.52
N8291Q		15.98	12.73	10.33
N8292A	Low power presettable decade counter	4.39	3.52	2.93
N8292F		5.28	4.22	3.52
N8292Q		15.98	12.73	10.33
N8293A	Low power presettable binary counter	4.39	3.52	2.93
N8293F		5.28	4.22	3.52
N8293Q		15.98	12.73	10.33

MSI DECODERS/DISPLAY DRIVERS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
N8250A	Binary-to-octal decoder	$ 3.90	$ 3.12	$ 2.60
N8250F		4.21	3.37	2.81
N8250J		12.50	10.00	8.40
N8251B	BCD-to-decimal decoder	3.90	3.12	2.60
N8251F		4.21	3.37	2.81
N8252B	BCD-to-decimal decoder (9301 direct replacement)	3.90	3.12	2.60
N8252F		4.21	3.37	2.81
N8T01B	Nixie* decoder/driver (68 V, 5 mA)	4.99	4.19	3.66
N8T04B	Seven-segment decoder/driver*	4.22	3.38	2.81
N8T04F		6.84	5.47	4.56
N8T04R		19.30	15.40	13.00
N8T05B	Seven-segment decoder/driver†	5.10	4.08	3.40
N8T05F		6.12	4.90	4.08
N8T05R		17.20	13.90	11.75
N8T06B	Seven-segment decoder/driver‡	5.70	4.56	3.80
N8T06F		6.15	4.92	4.10
N8T06R		13.05	10.44	8.70

*Bare collector outputs; active low—40 mA current sink. †Bare collector outputs; active high—2.5 mA current source. ‡Active high; bare collector outputs.

*Registered Burroughs Corp. trademark.

Signetics BIPOLAR DIGITAL INTEGRATED CIRCUITS

8000 SERIES (CONT'D)

MSI PARITY-FUNCTIONS

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
N8241A	Quad exclusive-OR	$ 2.43	$ 2.00	$ 1.62
N8241F		2.91	2.33	1.94
N8241Q		6.56	5.22	4.24
N8242A	4-bit comparator with open collector outputs	2.43	2.00	1.62
N8242F		2.91	2.33	1.94
N8242Q		6.56	5.22	4.24
N8262A	9-bit parity generator and checker	5.60	4.46	3.62
N8262F		6.52	5.22	4.35
N8262Q		17.01	13.54	10.90
N8269A	4-bit comparator (DM8200)	8.92	7.12	5.67
N8269F		10.20	8.16	6.80
N8269Q		23.30	18.65	14.85

MSI ARITHMETIC ELEMENTS

N8260N	Arithmetic logic element	$15.27	$12.22	$10.18
N8260P		46.90	37.50	31.25
N8261A	Fast carry extender	1.89	1.51	1.26
N8261F		2.28	1.82	1.52
N8261Q		5.00	4.20	3.35
N8268A	Full adder	3.15	3.01	2.45
N8268Q		9.52	7.58	6.15

MSI SCALER (ASYNCHRONOUS SHIFT REGISTER)

N8243N	8-bit position scaler with bare collector outputs	$10.44	$ 8.35	$ 6.96
N8243P		33.00	26.50	21.95

MSI MEMORIES

N8205Y	4096-bit ROM (512 x 8)	$44.25	$35.50	....
N8220B	High speed content addressable memory (CAM)	15.00	12.00	$10.00
N8222B	8-bit content addressable memory	27.80	22.25	18.55
N8222R		33.45	26.75	22.30
N8223B	256-bit field programmable read only memory (FROM)	13.20	10.80	8.00
N8223F		15.00	12.00	9.00
N8225B	64-bit bipolar scratch pad memory (16 x 4 RAM)	10.70	8.60	6.94
N8225F		36.60	29.30	24.40
N8228I	4096-bit ROM (1024 x 4)	35.50	30.00	25.00

MSI INTERFACE ELEMENTS

See Decoders/Display Drivers for 8T01, 8T04, 8T05 and 8T06 description and pricing; see SSI Gates for 8T18, 8T80 and 8T90 description and pricing; see SSI One-Shot for 8T20 and 8T22 description and pricing.

N8T09A	Quad bus driver (tristate outputs)	$ 2.35	$ 1.88	$ 1.57
N8T09F		2.82	2.26	1.88
N8T10B	Quad D-type bus flip-flop (tristate outputs)	7.50	6.00	5.00
N8T10F		8.70	6.96	5.80
N8T13B	Dual line driver	4.32	3.45	2.88
N8T13F		5.19	4.15	3.46
N8T13R		4.80	3.84	3.20
N8T14B	Triple line receiver/Schmitt trigger	5.43	4.34	3.62
N8T14F		6.52	5.22	4.35
N8T14R		8.88	7.10	5.92
N8T15A	Dual communications EIA/MIL line driver	5.63	4.50	3.75
N8T15F		6.75	5.40	4.50
N8T16A	Dual communications EIA/MIL line receiver	5.63	4.50	3.75
N8T16F		6.75	5.40	4.50
N8T16W		14.10	11.25	9.40
N8T23B	Dual line driver for IBM 360/370 interface	5.17	4.14	3.45
N8T23F		5.70	4.56	3.80
N8T24B	Triple line receiver for IBM 360/370 interface	6.22	4.98	4.15
N8T24F		7.15	5.72	4.77
N8T25V	Dual MOS sense amplifier with latch (tristate outputs)	4.27	3.42	2.85
N8T26B	Quad bus driver/receiver (tristate outputs)	5.85	4.68	3.90
N8T26I		8.70	6.96	5.80

HIGH SPEED ECL II SERIES

Pin-for-pin interchangeable with Motorola MECL II series.

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
N1004A	Dual 4-input OR/NOR gate	$1.65	$1.32	$1.10
N1005A		1.65	1.32	1.10
N1006A		1.65	1.32	1.10
N1010A	Quad 2-input OR/NOR gate	1.65	1.32	1.10
N1011A		1.65	1.32	1.10
N1012A		1.65	1.32	1.10
N1013A	85 MHz coupled J-K flip-flop	3.30	2.64	2.20
N1014A	Dual R-S flip-flop (positive clock)	3.30	2.64	2.20

HIGH SPEED ECL II SERIES (CONT'D)

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
N1015A	Dual R-S flip-flop (negative clock)	$3.30	$2.64	$2.20
N1016A	Dual R-S flip-flop (single rail, positive clock)	3.30	2.64	2.20
N1017A	Sat. logic to ECL translator	4.12	3.30	2.75
N1024A	Expandable dual 2-input OR/NOR gate	1.65	1.32	1.10
N1025A	Dual 4–5 input expander	1.65	1.32	1.10
N1027A	120 MHz AC coupled J-K flip-flop	4.95	3.96	3.30
N1033A	Dual R-S flip-flop (single rail, negative clock)	3.30	2.64	2.20
N1039B	ECL-to-saturated logic quad translator	5.79	4.63	3.86

HIGH SPEED ECL 10,000 SERIES

Operating Temperature Range: −30° C to +85° C. Pin-for-pin interchangeable with Motorola MECL 10,000 Series.

Signetics Type	Description	Net Each, Lots of 1-24	25-99	100-999
10100F	Quad 3-input NOR gate	$ 1.88	$ 1.67	$ 1.41
10101B	Quad 2-input OR-NOR gate	1.78	1.56	1.33
10101F	Quad 2-input OR-NOR gate	2.09	1.84	1.57
10102B	Quad 2-input NOR gate	1.78	1.56	1.33
10102F	Quad 2-input NOR gate	2.09	1.84	1.57
10105B	Triple 2-3-2-input OR-NOR gate	1.78	1.56	1.33
10105F		2.09	1.84	1.57
10106B	Triple 4-3-3-input NOR gate	1.78	1.56	1.33
10106F		2.09	1.84	1.57
10107B	Triple 2-input exclusive OR-NOR gate	2.23	1.96	1.70
10107F		2.62	2.30	2.00
10109B	Dual 4-5-input OR-NOR gate	1.78	1.56	1.33
10109F		2.09	1.84	1.57
10110B	Dual 3-input 3-output OR gate	2.23	1.96	1.70
10110F		2.62	2.30	2.00
10111B	Dual 3-input 3-output NOR gate	2.23	1.96	1.70
10111F		2.62	2.30	2.00
10112B	Dual 3-input 1-OR/2-NOR output gate	2.23	1.96	1.70
10112F		2.62	2.30	2.00
10113B	Quad exclusive OR gate	2.93	2.59	2.23
10113F		3.45	3.05	2.62
10115B	Quad differential line receiver	1.78	1.56	1.33
10115F		2.09	1.84	1.57
10116B	Triple differential line receiver	1.78	1.56	1.33
10116F		2.09	1.84	1.57
10117B	Dual 2-wide 2-3-input OR-AND/OR-AND-INVERT gate	2.23	1.96	1.70
10117F		2.62	2.30	2.00
10118B	Dual 2-wide 3-3-input OR-AND gate	2.23	1.96	1.70
10118F		2.62	2.30	2.00
10119B	4-wide 4-3-3-3-input OR-AND gate (dual)	2.23	1.96	1.70
10119F		2.62	2.30	2.00
10121B	4-wide 3-3-3-3-input OR-AND/OR-AND-INVERT gate	2.23	1.96	1.70
10121F		2.62	2.30	2.00
10124B	Quad TTL to ECL translator	5.00	4.40	4.00
10124F		5.63	4.95	4.50
10125B	Quad ECL to TTL translator	5.00	4.40	4.00
10125F		5.63	4.95	4.50
10130F	Dual D-type clocked latch	5.58	4.91	4.23
10131F	Dual D-type master slave flip-flop	7.05	6.20	5.37
10132F	Dual multiplexer-latch with reset	6.00	5.28	4.80
10133F	Quad D-type latch (gated outputs)	7.73	6.80	5.90
10134F	Dual multiplexer-latch (independent select)	6.00	5.28	4.80
10136F	Universal hexadecimal counter	17.79	15.66	13.55
10137F	Universal decimal counter	17.79	15.66	13.55
10160F	12-bit parity checker-generator circuit	8.55	7.52	6.50
10161F	1-of-8 demultiplexer-decoder	6.77	5.96	5.13
10162F		6.77	5.96	5.13
10164F	8-line-to-1-line multiplexer with enable	6.77	5.96	5.13
10170F	9-bit parity circuit with 2-carry inputs	7.70	6.76	5.85
10171F	Dual 1-of-4 demultiplexer/decoder	7.15	6.30	5.42
10172F		7.15	6.30	5.42
10173F	Quad 2-to-1 multiplexer/latch	7.75	6.82	6.20
10174F	Dual 4-line-to-1-line multiplexer with enable	6.77	5.96	5.13
10210F	High performance 10110	3.93	3.45	3.00
10211F	High performance 10111	3.93	3.45	3.00
10212F	High performance 10112	3.54	3.10	2.70

Signetics LINEAR INTEGRATED CIRCUITS AND MOS PRODUCTS

LINEAR INTEGRATED CIRCUITS

The following types available in military temperature ranges and in other package types. Write or phone for information.

COMPARATORS AND SENSE AMPLIFIERS

Signetics Type	Description	Net Ea., Lots	
		1-24	25-99
NE526A	Analog voltage comparator	$ 6.25	$5.00
NE526F		11.25	9.00
NE526K		7.80	6.25
NE527A	High speed voltage comparator	3.00	2.40
NE527I		4.00	3.30
NE527K		3.00	2.40
NE529A		3.00	2.40
NE529I		4.00	3.50
NE529K		3.00	2.40
μA710CA	Differential voltage comparator	.92	.73
μA710CV		.90	.79
μA710CF		1.00	.93
μA710CT		.93	.74
μA711CA	Dual voltage comparator	.90	.79
μA711CK		.90	.79
μA711CF		1.00	.93

COMMUNICATIONS CIRCUITS

NE592A	Video amplifier	$ 2.00	$1.65
NE592F		2.50	2.00
NE592K		3.45	2.75
μA733CA	Differential video amplifier	2.00	1.65
μA733CK		2.00	1.65
μA733CF		2.00	1.65
NE510A	Dual differential amplifier	3.60	2.85
NE510F		4.25	3.40
PA239A	Dual low noise preamplifier	4.56	4.56
75450A	Dual peripheral driver	1.85	1.50
75451V		1.44	1.15
DM8880B	High voltage 7-segment decoder/driver	5.40	3.95

CONSUMER CIRCUITS

NE540L	Power driver	$3.35	$2.72
NE555F	Timer	2.10	1.75
NE555T		1.31	1.15
NE555V		1.13	.90

OPERATIONAL AMPLIFIERS

NE531T	High slew rate operational amplifier	$ 3.00	$ 2.40
NE531V		3.00	2.40
NE536T	FET input operational amplifier	3.37	2.70
LM301AN		.90	.82
LM307N	General purpose operational amplifier	1.11	.89
N5556F	Operational amplifier	5.20	4.15
N5556T		2.92	2.34
N5556V		2.70	2.16
N5558A	Dual operational amplifier	2.00	1.60
N5558F		4.15	3.50
N5558T		2.50	2.00
N5558V		2.00	1.60
μA709CV	Operational amplifier	.83	.79
μA709CT		.90	.79
μA740CT	FET input operational amplifier	10.00	10.00
μA741CA	High performance operational amplifier	.94	.94
μA741CV		.78	.78
μA741CT		.94	.94
μA741CF		3.00	3.00
μA747CA	Dual operational amplifier	1.92	1.92
μA747CK		3.30	2.20
μA747CF		5.00	5.00
μA748CT	High performance operational amplifier	1.02	.83
μA748CV		.90	.72
μA748CA		.97	.78

PHASE LOCKED LOOPS

NE560B	Phase locked loop	$ 9.40	$7.50
NE561B		9.40	7.50
NE562B		9.40	7.50
NE565A		3.75	3.00
NE565K		10.00	8.10
NE565F		10.00	8.10
NE566F	Function generator	3.25	2.50
NE566T		3.35	2.70
NE566V		3.00	2.40
NE567F	Tone decoder phase locked loop	6.75	5.90
NE567T		6.00	4.80
NE567V		6.00	4.80

VOLTAGE REGULATORS

NE550A	Precision voltage regulator	$1.30	$1.10
NE550L		1.50	1.20
LM309K	Five volt regulator	3.75	3.00
LM309DB		3.75	3.00
μA723CA	Precision volt regulator	1.38	1.38
μA723CL		1.40	1.40
μA723CF		1.88	1.78

SILICON GATE MOS
2500/2600 SERIES

P-channel MOS silicon gate process technology except 2600 Series which are low threshold N-channel silicon gate technology. DTL and TTL compatible except 2532, 2533 and 2548, TTL compatible. Operating Temperature Range: 0° C to +70° C. Package: Suffix **A**, 14-pin DIP; **B**, 16-pin DIP; **I**, 16-, 22-, -28-pin ceramic DIP; **K**, 10-pin TO-100; **N**, 24-pin DIP; **TA**, TO-99; **T**, 8-pin TO-5; **V**, 8-pin DIP. Ceramic DIP available for most types, please inquire.

CHARACTER GENERATORS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
2513N	High speed 64 x 7 x 5	$13.50	$10.80	$ 9.00
2516N	High speed 64 x 6 x 8	13.50	10.80	9.00
2526N	High speed 64 x 9 x 9 (static)	24.00	19.20	15.00

DYNAMIC SHIFT REGISTERS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
2502B	Quad 256-bit multiplexed	$ 8.85	$ 7.08	$ 5.90
2503TA	Dual 512-bit multiplexed	8.85	7.08	5.90
2503V	Dual 512-bit multiplexed	8.25	6.60	5.50
2504TA	Single 1024-bit multiplexed	8.85	7.08	5.90
2504V		8.25	6.60	5.50
2505K	512-bit recirculating	5.70	4.56	3.80
2506T	Dual 100-bit (bare drain)	4.05	3.24	2.70
2506V		2.85	2.28	1.90
2507T	Dual 100-bit (7.5K pulldown resistors)	4.05	3.24	2.70
2507V		2.85	2.28	1.90
2512K	1024-bit recirculating	8.25	6.60	5.50
2517T	Dual 100-bit (20K pulldown resistors)	4.05	3.24	2.70
2517V		2.85	2.28	1.90
2524V	512-bit recirculating	5.70	4.56	3.80
2525V	1024-bit recirculating	8.25	6.60	5.50
2548I		33.75	27.00	22.50

STATIC SHIFT REGISTERS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
2509A	Dual 50-bit—tristate output	$ 4.50	$ 3.60	$3.00
2509K		4.50	3.60	3.00
2510A	Dual 100-bit—tristate output	6.00	4.80	4.00
2510K		6.00	4.80	4.00
2511A	Dual 200-bit—tristate output	7.50	6.00	5.00
2511K		7.50	6.00	5.00
2518B	Hex 32-bit	6.00	4.80	4.00
2519B	Hex 40-bit	6.00	4.80	4.00
2521V	Dual 128-bit	6.75	5.40	4.50
2522V	Dual 132-bit	6.00	4.80	4.00
2527V	Dual 256-bit	7.20	5.76	4.80
2528V	Dual 250-bit	7.20	5.76	4.80
2529V	Dual 240-bit	7.20	5.76	4.80
2532B	Quad 80-bit	6.00	4.80	4.00
2533V	1024-bit	14.85	11.88	9.90

STATIC RAMS

Signetics Type	Description	Net Each, Lots of		
		1-24	25-99	100-999
2501B	Fully decoded 256 x 1	$ 6.00	$ 4.80	$ 4.00
2501I		9.00	7.20	6.00
25L01B	Fully decoded 256 x 1 (low power)	6.00	4.80	4.00
25L01I		9.00	7.20	6.00
2602B	Fully decoded 1024-bit—1 μs access and cycle time	24.00	19.70	16.00
2602I		28.40	23.30	19.00
2602-1B	Fully decoded 1024-bit—500 ns access and cycle time	30.72	24.57	20.48
2602-1I		35.22	28.17	23.48

OUR STOCKS ARE COMPLETE AND UP-TO-DATE.

ASK FOR INFORMATION ON NEW OR UNLISTED ITEMS.

litronix Optoelectronic Devices

VISIBLE RED LED—INDICATOR AND PANEL

Litronix Number	Lens Description	Features	Net Each, Lots of 1-99	100-999	1000 Up
ARL-18	Red clear	8 diode array position indicator stackable in any quantity	$4.60	$3.80	$2.95
RL-2*	Red diffusive	Front panel mounting; molded plastic package	.90	.65	.50
RL-2-02	Red clear		.90	.65	.50
RL-4	Water clear	High contrast background; bright point source light; isolated pkg.	1.15	.77	.69
RL-4-02	Red clear		1.15	.77	.69
RL-4-05	Water clear	TO-18 pkg.; high luminance point source	1.00	.71	.65
RL-5	Water clear	Coaxial header package	1.15	.77	.69
RL-7	White diffusive	TO-18 isolated island package	1.15	.77	.69
RL-7-01	Red diffusive		1.15	.77	.69
RL-20*†	Red diffusive	High luminance; large full flood radiating area	.90	.65	.50
RL-20-02	Red clear		.90	.65	.50
RL-21‡	Red diffusive	Extra wide viewing angle—180°	.90	.65	.50
RL-21-02	Red clear		.90	.65	.50
RL-50*	Water clear	Subminiature axial lead frame package for maximum strength at minimum linear spacing	.62	.45	.39
RL-50-01	Red diffusive		.62	.45	.39
RL-50-02	Red clear		.62	.45	.39
RL-209*†	Red diffusive	Subminiature radial lead; low cost	.59	.39	.35
RL-209-02	Red clear		.59	.39	.35
RL-T1*†	Red diffusive	Identical to RL-209 except flangeless	.59	.39	.35
RL-T1-02	Red clear		.59	.39	.35
RL-4403	Red diffusive	High luminance; large full flood area; (RL-4440, less luminance)	.90	.65	.48
RL-4440	Red diffusive		.50	.37	.33
RL-4484§	Red diffusive	Miniature commercial grade	.55	.37	.33
RL-4850	Red diffusive	Commercial panel mount	.55	.37	.33
RL-5054-1	Red diffusive	Extra high luminance for back panel lighting; projects ½" spot	.90	.65	.48
RL-5054-2	Red diffusive		1.35	.85	.68

INFRARED AND VISIBLE ORANGE EMITTERS

Current regulated emitters also available; data and pricing on request.

OL-30	Orange	High brightness, front panel mtg.	$0.90	$0.65	$0.48
OL-31	Orange	High brightness, min. (T1 lamp)	.59	.39	.35
IRL-40♯	Clear	TO-46 header w/clear epoxy dome	1.65	1.40	1.25
IRL-60	Clear	Subminiature axial lead	.78	.54	.49

*White diffusive (-03); †Water clear diffusive (-04); ‡White diffusive lens available at same price. §Pkg. similar to RL-209. ♯For sense-source applications.

OPTO-ISOLATORS

Optically coupled pair employing infrared LED and NPN phototransistor.

Litronix Number	Break-down V	Net Each, Lots of 1-99	100-999	1000 Up	Litronix Number	Break-down V	Net Each, Lots of 1-99	100-999	1000 Up
IL-1	2500	$2.25	$1.38	$1.20	ILA-55*	1500	$2.50	$1.70	$1.55
IL-5	2500	2.40	1.55	1.40	ILD-74	1500	2.90	1.90	1.70
IL-12	1000	1.35	1.10	.95	ILQ-74	1500	5.75	3.75	3.30
IL-15	1500	1.60	1.15	1.05	ILCA2-30†	....	2.75	1.90	1.70
IL-16	1500	2.15	1.40	1.25	ILCA2-55†	....	3.15	2.15	1.95
IL-74	1500	1.30	1.05	.90	ILCT-6	1500	4.60	3.50	2.50
ILA-30*	1500	2.30	1.55	1.40					

*Infrared emitter and photo darlington. †LED and photo darlington transistor.

SINGLE DIGIT NUMERIC DISPLAYS—COMMON ANODE

Litronix Number	Char. Ht., In.	Description	Net Ea., Lots 1-99	100-999
DL-6	0.6	7-segment, DP left—vertical connector mount	$20.00	$16.50
DL-61	0.6	±1 polarity-overflow version of DL-6	19.00	15.50
DL-62	0.6	7-segment, DP left—oversize DIP (0.6" pin spacing)	9.00	7.50
DL-63	0.6	±1 polarity-overflow version of DL-62	9.00	7.50
DL-1A	0.27	Red lens version of DL-10	9.00	7.50
DL-1001A	0.27	Red lens version of DL-101	9.00	7.50
DL-10	0.27	7-segment, DP left—standard 14-pin DIP, clear lens	9.00	7.50
DL-101	0.27	±1 polarity-overflow version of DL-10, clear lens	9.00	7.50
DL-10A	0.27	Low cost, low power, high brightness version DL-10	6.30	5.25
DL-101A	0.27	±1 polarity-overflow version of DL-10A	6.30	5.25
DL-8*	0.25	7-segment stagger lead, DP left	8.90	7.35
DL-81	0.25	±1 polarity-overflow version of DL-8	8.50	7.00
DL-4†	0.19	7-segment, DP right—magnifier 14-pin DIP	4.85	3.90
DL-402†	0.19	DP right version DL-4	4.85	3.90
DL-410	0.19	7-segment, DL-10 pins, DP left	4.85	3.90
DL-411	0.19	Isolated DP version DL-410	4.85	3.90

MULTIPLE DIGIT NUMERIC DISPLAYS—COMMON CATHODE

Seven-segment, DP right; standard 12-pin DIP except as otherwise noted.

DL-33‡	0.115	Triple; direct view hybrid	$ 5.80	$ 4.75
DL-33B‡	0.160	Triple; magnified hybrid	6.10	4.95
DL-33MMB‡	0.085	Triple; magnified monolithic	4.85	3.85
DL-337	0.106	Triple; magnified monolithic	5.50	4.50
DL-34	0.125	Quad; standard 14-pin DIP	16.00	13.20
DL-44	0.190	Dual; magnifier construction	8.50	6.80

ALPHA-NUMERIC DISPLAY

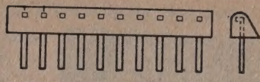
DL-57	0.32	5 x 7 dot matrix, DP left—standard 14-pin DIP	$13.00	$11.00

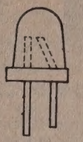
DATA-LIT 700 SERIES NUMERIC DISPLAYS—COMMON ANODE

DL-707	0.30	7-segment, solid bar, DP left, 14-pin DIP	$3.90	$3.25
DL-707R	0.30	7-segment, solid bar, DP right, 14-pin DIP	3.90	3.25
DL-701	0.30	±1 polarity-overflow version of DL-707	3.90	3.25
DL-704	0.30	Common cathode version of DL-707	3.90	3.25
DL-747	0.630	7-segment; DL-62 compatible; DP left	5.25	4.35

*Specify DL-8C, colon, no DP; -8R, DP right. †Common cathode. ‡Also available with two digits and minus sign; pricing on request.

LPT-100 SERIES SILICON PHOTOTRANSISTORS ALSO AVAILABLE—DATA AND PRICING ON REQUEST


ARL-18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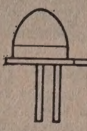
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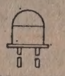
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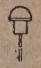
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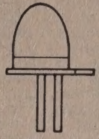
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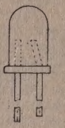
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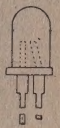
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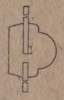
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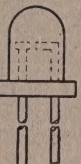
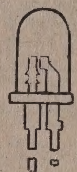
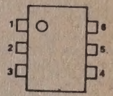

OL-31, RL-209


OL-30, RL-4403 thru RL-5054-2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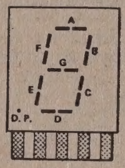
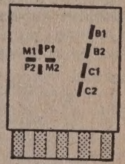

DL-6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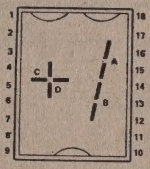
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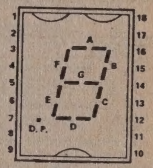
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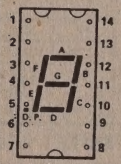
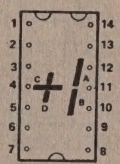
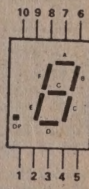

DL-1A, DL-10, DL-10A


DL-101, DL-101A, DL-1001A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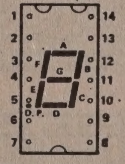
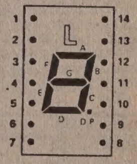
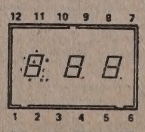
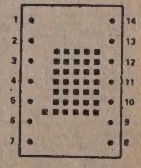

DL-4, DL-402, DL-410, DL-411


DL-704, DL-707


DL-33, DL-33B


DL-57

FELIX™ FIELD EFFECT LIQUID CRYSTAL AC DISPLAYS

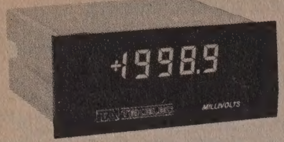
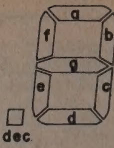


Photo illustrates application of Felix display in a panel meter by Tekelec, Inc. In this application, the Felix display retains all the advantages of other display systems, but vastly improves visual contrast. (Photo courtesy of Tekelec, Inc.).

Display Digit

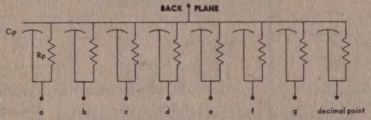


FELIX FIELD EFFECT LIQUID CRYSTAL DISPLAYS

Felix liquid crystal displays from Ilixco produce superior optical properties because of their bi-level characteristics. The Felix display system has two distinct optical states so that display segments are fully off at 3 volts and completely on at 7 volts. Bi-level refers to the two levels of optical activity present in specially organized liquid crystals. In the quiescent state the level is referred to as a 90° rotation of the plane of polarized light. That is, when a liquid crystal organized in this manner is inserted between a polarizer and an analyzer which are parallel, the light transmission will be a minimum. The other level of the bi-level system is zero degrees rotation of the plane of polarized light which occurs upon the application of a well definedvoltage, giving maximum transmission. Extremely low voltage threshold provides full compatibility with TTL and MOS devices. Power consumption of the ON segment is less than ½ microwatt. Display units are available with integral light background for use in ambient light, or with a diffuser for operations in which backlight is provided. Two standard AC displays are available for a wide variety of applications in digit display units, BLM 7041A and BLM 7080A. Both are low cost, low power units with excellent optical characteristics. **Applied Voltage Rating:** ±40 volts peak. **Oper. Temperature:** 0° to 70° C. **Storage Temp.:** −20° to 70° C. **Contrast Ratio:** Display type, normally open, reflective, 7 V, 25:1 minimum, 30:1, typical, 40:1, max.; normally closed, transmissive, 7 V, 40:1 minimum, 50:1 typical, 100:1 max. **Light Attenuation:** Display type, normally open, reflective, at 0 V, 0.4; at 7 V, 2.0 optical density. Normally closed, transmissive, at 0 V, 2.5; at 7 V, 0.4 optical density.

ELECTRICAL DATA

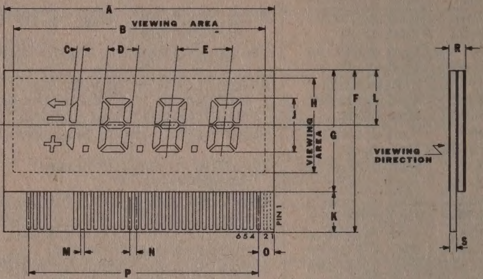
Cp—Segment to back plane capacitance.
Rp—Parallel resistance.
Decimal point parallel resistance is approximately 7 x Rp.
Decimal point capacitance is approximately 1/7 of Cp.



Parameter	Ilixco No. BLM 7041A	Ilixco No. BLM 7080
Height	.4″	.8″
Rp (off segment or AC operation, F-1 kHz)	10^8 ohms	10^8 ohms
Cp (capacitance per segment) V off maximum	15 pF 2 V rms	60 pF 2 V rms
Operating life at 10 VAC rms, f-60 Hz	18 months	18 months
Rise and decay time at 25° C	50 msec	50 msec

MECHANICAL DATA

Reflective displays are specified by the addition of the suffix **R**, and transmissive displays by the suffix **T**. Example, BLM 7041A**R** is a four digit reflective display and BLM 7041A**T** is a four digit transmissive display.



DISPLAY COLOR

Transmissive displays—color depends on light source or filters. Excellent results can be obtained with green, blue, red, white. Reflective displays—blue or black digits on a light background.

PIN CONNECTIONS

Ilixco No. BLM-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
7041A-3.5	. . .	. . .	b	g	c	d	BP	e	f	a	*	b	g	c	d
7041A-4	. . .	. . .	b	g	c	d	BP	e	f	a	*	b	g	c	d
7041A-4.5	b	g	c	BP	d	e	f	a	*	b	g	c	BP	d	e
7080A-3.5	a	b	c	d	BP	e	g	f	*	a	b	c	d	BP	e
7080-4	a	b	c	d	BP	e	g	f	*	a	b	c	d	BP	e

Ilixco No. BLM-	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
7041A-3.5	BP	e	f	a	*	b	g	c	d	BP	e	f	a	*	1
7041A-4	BP	e	f	a	*	b	g	c	d	BP	e	f	a	*	b
7041A-4.5	f	a	*	b	g	c	BP	d	e	f	a	*	b	g	c
7080A-3.5	g	f	*	a	b	c	d	BP	e	g	f	*	. . .	. . .	1
7080A-4	g	f	*	a	b	c	d	BP	e	g	f	*	a	b	c

Ilixco No. BLM-	31	32	33	34	35	36	37	38	39	40
7041A-3.5	. . . .	. . . .	. . . .	BP	+	−	←	. . . .	. . . .	. . . .
7041A-4	g	c	d	BP	e	f	a	*	. . . .	. . . .
7041A-4.5	BP	d	e	f	a	*	1	BP	+	−
7080A-3.5	*	BP	−	+	←	. . . .	. . . .	. . . .	. . . .	. . . .
7080-4	d	BP	e	g	f	*	. . . .	. . . .	. . . .	. . . .

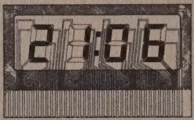
*Decimal.

DIMENSION TABLE

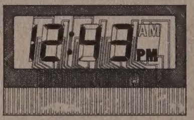
Ilixco No.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S
BLM 7041A-3.5	2.000	1.780	.050	.220	.400	1.200	.900	.590	.400	.300	.410	.030	.050	.115	1.700	.110	.048
BLM 7041A-4	2.000	1.780	.050	.220	.400	1.200	.900	.590	.400	.300	.410	.030	.050	.115	1.750	.110	.048
BLM 7041A-4.5	2.000	1.780	.050	.200	.380	1.200	.900	.590	.360	.300	.410	.030	.050	.015	1.950	.110	.048
BLM 7080A-3.5	3.690	3.475	.100	.440	.800	1.750	1.480	1.100	.800	.270	.690	.060	.100	.100	3.500	.110	.048
BLM 7080A-4	3.690	3.475	.100	.440	.800	1.750	1.480	1.100	.800	.270	.690	.060	.100	.100	3.500	.110	.048

FELIX FIELD EFFECT LIQUID CRYSTAL DISPLAYS FOR LOW POWER DIGITAL CLOCKS

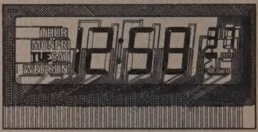
Provides the high degree of readability needed in digital clock applications and with only a fraction of the power requirement of other display systems. Up to 40-to-1 contrast in normal lighting. Effective readability under all lighting conditions. No washout under direct sunlight. Visibility good at a full 90° angle using transmissive type display (white or light colored numbers against a dark background). Operate with less than ½ microwatt of power. The three models shown are available as transmissive or reflective displays. Custom designs available on request.



BLM 6052
24-Hr. Clock



BLM 6053
12-Hr. Clock with AM/PM Indicator



BLM 7052 12-Hr. Clock w/Days, AM/PM, Alarm Ind.

PIN CONNECTIONS

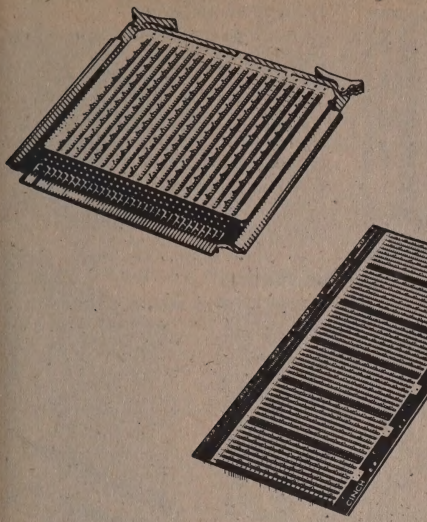
Ilixco No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
BLM 6052	. . .	. . .	b	g	c	q	BP	e	f	a	. . .	b	g	c	d	BP	e	f	a	:	b	g	c	d	BP	e
BLM 6053	. . .	. . .	. . .	. . .	AM	BP	PM	a	b	c	d	BP	e	g	f	a	b	c	d	BP	e	g	f	:	a	b
BLM 7052	a sec 10	b sec 10	c sec 10	e sec	f sec	a sec	b sec	g sec	c sec	d sec	PM	BP	@	AM	d sec 10	e sec 10	g sec 10	f sec 10	a	b	c	BP	d	e	g	f

Ilixco No.	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
BLM 6052	f	a	. . .	b	g	c	d	BP	e	f	a	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
BLM 6053	c	d	BP	e	g	f	1	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
BLM 7052	a	b	c	BP	d	e	g	f	:	a	b	c	d	BP	e	g	f	1	Fr	Sa	Su	BP	We	Tu	Mo	Th

DIMENSION TABLE

Ilixco No.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S
6052	2.000	1.780	.050	.220	.400	1.200	.900	.590	.400	.300	.410	.030	.050	.115	1.700	.110	.048
6053	2.000	1.780	.050	.220	.400	1.200	.900	.590	.400	.300	.410	.030	.050	.115	1.400	.110	.048
7052	2.750	2.480	.050	.250	.385	1.350	1.060	.740	.500	.250	.500	.030	.050	.165	2.550	.110	.048

CINCH INTEGRATED CIRCUIT LOGIC BOARDS



INTEGRATED CIRCUIT LOGIC BOARDS FOR DUAL INLINE DEVICES

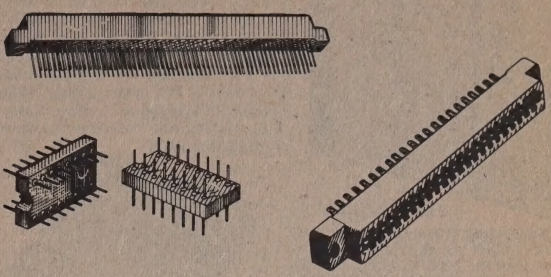
Printed circuit backplanes, .125″ thick, suitable for bread boarding, contain socket contacts designed to accept the leads of standard dual inline plug-in devices. The contacts, with .025″ square Wire-Wrap* tails, are assembled on .100″ x .300″ centers, and are arranged in 14 or 16 pin patterns, or in continuous rows, to accommodate various size devices with 24 or 36 leads. The boards are double-sided containing both voltage and ground planes, and each configuration has a discreet number of active or dummy contacts connected to these planes.

*Registered Gardner-Denver trademark.

Cinch Part No.	Contact Pattern	Ground and Power Pins	No. of Patterns	Overall Size, Inches	Net Each, Lots of 1-4
60-HPG1-30	14	14, 7	30	6.875 x 2.675	**$ 53.00**
60-HPG1-60	14	14, 7	60	6.875 x 5.375	**102.00**
60-HPG1-90	14	14, 7	90	6.875 x 8.075	**150.00**
60-HPG1-120	14	14, 7	120	6.875 x 10.775	**200.00**
60-HPG1-150	14	14, 7	150	6.875 x 13.475	**250.00**
60-HPG1-180	14	14, 7	180	6.875 x 16.175	**300.00**
60-HPG2-30	14	Dummy	30	6.875 x 2.675	**56.00**
60-HPG2-60	14	Dummy	60	6.875 x 5.375	**109.00**
60-HPG2-90	14	Dummy	90	6.875 x 8.075	**161.50**
60-HPG2-120	14	Dummy	120	6.875 x 10.775	**215.00**
60-HPG2-150	14	Dummy	150	6.875 x 13.475	**265.00**
60-HPG2-180	14	Dummy	180	6.875 x 16.175	**320.00**
60-HPG3-30	16	16, 8	30	6.875 x 2.675	**58.00**
60-HPG3-60	16	16, 8	60	6.875 x 5.375	**112.50**
60-HPG3-90	16	16, 8	90	6.875 x 8.075	**167.50**
60-HPG3-120	16	16, 8	120	6.875 x 10.775	**225.00**
60-HPG3-150	16	16, 8	150	6.875 x 13.475	**275.00**
60-HPG3-180	16	16, 8	180	6.875 x 16.175	**335.00**
60-HPG4-30	16	Dummy	30	7.475 x 2.675	**62.50**
60-HPG4-60	16	Dummy	60	7.475 x 5.375	**120.00**
60-HPG4-90	16	Dummy	90	7.475 x 8.075	**180.00**
60-HPG4-120	16	Dummy	120	7.475 x 10.775	**240.00**
60-HPG4-150	16	Dummy	150	7.475 x 13.475	**300.00**
60-HPG4-180	16	Dummy	180	7.475 x 16.175	**355.00**
60-HUP-9	*	Dummy	9	6.875 x 2.675	**57.50**
60-HUP-18	*	Dummy	18	6.875 x 5.375	**110.00**
60-HUP-27	*	Dummy	27	6.875 x 8.075	**170.00**
60-HUP-36	*	Dummy	36	6.875 x 10.775	**220.00**
60-HUP-45	*	Dummy	45	6.875 x 13.475	**275.00**
60-HUP-54	*	Dummy	50	6.875 x 16.200	**335.00**
60-HC-1	14	14, 7	60	7.353 x 7.000	**120.00**
60-HC-2	14	Dummy	60	7.353 x 7.000	**125.00**
60-HC-3	16	16, 8	60	7.353 x 7.000	**130.00**
60-HC-4	16	Dummy	60	7.353 x 7.000	**135.00**
60-HUC-1	*	Dummy	20	7.353 x 7.000	**150.00**
60-HMC-1	14, 16	†	48, 12	7.353 x 7.000	**120.00**
60-HP4-60	14	Dummy	60	5.850 x 7.000	**120.00**
60-HP4-30	14	Dummy	30	5.850 x 4.300	**65.00**
60-HP6-60	16	Dummy	60	5.850 x 7.600	**135.00**
60-HP6-30	16	Dummy	30	5.850 x 4.600	**75.00**
60-HC4-60	14	Dummy	60	5.850 x 7.500	**125.00**
60-HC4-30	14	Dummy	30	5.850 x 4.800	**75.00**
60-HC6-60	16	Dummy	60	5.850 x 8.100	**140.00**
60-HC6-30	16	Dummy	30	5.850 x 5.100	**80.00**

*Continuous row of 50 contacts per row. †Ground and power pins in 14 pin pattern are 14 and 7 and in 16 pin pattern 16 and 8.

INPUT/OUTPUT CONNECTORS AND ACCESSORY HARDWARE



Two types of PC edge connectors are available for input/output to the various types of IC logic boards. They are a 22 position dual readout type with solder eyelet and a 61 position dual readout type with Wire-Wrap tails. The 22 position connector interfaces with the 60-HC4 and -HC6 series and the 61 position with the 60-HC, -HUC-1 and the -HMC-1.

Cinch Part No.	Description	Net Each, Lots of				
		1-4	5-9	10-24	25-49	50-99
50-44A-60	22-Position edge connector for ⅛″ board; solder tab terminals	**$ 7.94**	**$ 6.94**	**$ 6.20**	**$5.15**	**$4.96**
50-122W-60	61-Position edge connector for ⅛″ board; Wire Wrap terminals	**13.20**	**11.80**	**10.90**	**9.00**	**8.75**

INPUT/OUTPUT PLUGS

For all boards, pin contact input/output plugs are available. These plugs are 14 or 16 pin types with contacts arranged on the same centers as the socket contact patterns on the logic boards. The connectors are supplied individually or cabled in 12″, 24″ or 36″ lengths, terminated at one or both ends. The .18″ dia. pins are phosphor bronze, with gold over nickel plating and the insulator is nylon.

Cinch Part No.	No. of Pos.	Input/Output Plug Cable Length and Description	Net Each, Lots of		
			1-99	100-499	500-999
PA-1412-T	14	12″, terminated one end	**$3.57**	**$3.23**	**$2.68**
PA-1412-DE	14	12″, terminated both ends	**6.11**	**5.18**	**4.89**
PA-1424-T	14	24″, terminated one end	**4.34**	**3.92**	**3.47**
PA-1424-DE	14	24″, terminated both ends	**7.06**	**5.99**	**5.65**
PA-1436-T	14	36″, terminated one end	**5.10**	**4.61**	**4.08**
PA-1436-DE	14	36″, terminated both ends	**8.01**	**6.79**	**6.41**
PA-1612-T	16	12″, terminated one end	**4.19**	**3.55**	**3.35**
PA-1612-DE	16	12″, terminated both ends	**7.19**	**6.10**	**5.75**
PA-1624-T	16	24″, terminated one end	**5.06**	**4.29**	**4.05**
PA-1624-DE	16	24″, terminated both ends	**8.29**	**7.03**	**6.63**
PA-1636-T	16	36″, terminated one end	**5.94**	**5.04**	**4.75**
PA-1636-DE	16	36″, terminated both ends	**9.39**	**7.96**	**7.51**
P-14-S	14	Unwired, solder contacts	**1.26**	**1.10**	**.96**
P-16-S	16	Unwired, solder contacts	**1.49**	**1.30**	**1.13**
P-14-C	14	Unwired, crimp contacts	**1.12**	**.98**	**.85**
P-16-C	16	Unwired, crimp contacts	**1.34**	**1.17**	**1.02**

ADAPTER PLUGS

A series of adapters are also available which are designed to plug into the socket contact pattern on the logic boards offering various means of terminating the boards. The AP-14-C and -16-C have slotted tail contacts to provide for the attachment of wires by soldering and the AP-14-B and -16-B have solder cup contacts for the same purpose. The AP-14-A and -16-A adapters have round pins on both ends to accept a pulg gable socket connector.

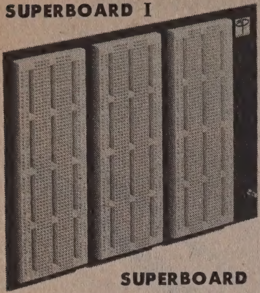
Cinch Part No.	Description	Net Each, Lots of		
		1-99	100-499	500-999
AP-14-A	14-position adapter plug with double-ended pin	**$1.20**	**$1.05**	**$0.94**
AP-16-A	16-position adapter plug with double-ended pin	**1.36**	**1.19**	**1.06**
AP-14-B	14-position adapter plug with solder cup pin	**1.20**	**1.05**	**.94**
AP-16-B	16-position adapter plug with solder cup pin	**1.36**	**1.19**	**1.06**
AP-14-C	14-position adapter plug with slotted end pin	**1.20**	**1.05**	**.94**
AP-16-C	16-position adapter plug with slotted end pin	**1.36**	**1.19**	**1.06**

DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

A P PRODUCTS Integrated Circuit Accessories
Breadboards, Terminal Strips, Test Clips, Test Probes

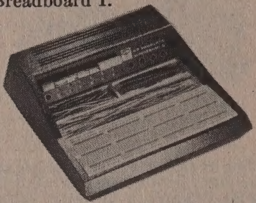
FOR DEVELOPMENT BREADBOARDING

SUPERBOARD I



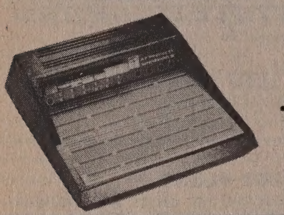
Fully assembled board has 2,520 solderless, plug-in tie points in three Super-Strips (see description below). Has low-impedance distribution system and integral ground plane. Accepts up to 24 14-pin DIP's plus LSI packages, other DIP sizes, TO-5's, discrete components and patch cords with lead diameters to .032″. Size, materials, plating and turret post same as Breadboard I.

SUPERBOARD II



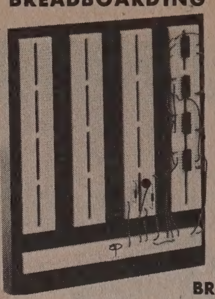
Completely assembled, ready to use Superboard packaged in handsome high-impact plastic case. Incorporates the universally accepted Super-Strip described at bottom of page. Contains regulated +5 volt at 1 amp power supply. Ground and +5 volts are internally distributed to color-coded bus strips. Contains six buffered switches, two momentary, four toggle action. Has four input-buffered LED indicators. Handy storage compartment contains assortment of interconnection wires.

SUPERBOARD III



Ideally suited for analog and digital circuit building. Has twice the circuit capacity of Superboard II. Includes two power supplies—regulated ±15 volt at 100 mA; +5 volt at 1 amp. Ground and +5 volts are distributed as in Superboard II; dual 15-volt supply outputs are brought out to plug-in sockets. Contains buffered switches and LED indicators as in Superboard II. Strips are mounted on integral ground plane.

BREADBOARD I



Requires no soldering, no assembling, no special patch cords. Contains 2,264 solderless, plug-in tie points. Integral ground plane minimizes unwanted voltage spikes. Accepts up to 32 14-pin DIP's or any mix of DIP's, TO-5's or discrete components with lead diameters to .032″. Uses A P terminal strips. Uses any solid wire up to No. 20 AWG for patching. Has 7″ x 9″ NEMA grade G-10 glass epoxy base. Gold-plated 2 oz. copper ground plane. Has turret post on front for direct attachment to ground plane.

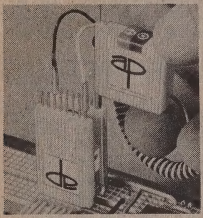
BREADBOARD II

Fully assembled breadboard has 2,696 solderless, plug-in tie points. Incorporates low-impedance distribution system with integral grnd plane into BBI design. Low-inductance, high distributed capacitance design. Integral ground plane minimizes unwanted voltage spikes. Has same DIP capacity as Breadboard I. Accepts any mix of DIP's, TO-5's, discrete components or solid wire patch cords with lead diameters to .032″. System consists of four terminal strips and three distribution strips (see description below) plus two levels of printed circuits and three front-mounted binding posts. Distribution strip buses are internally connected to corresponding color binding posts. Size, materials and plating same as Breadboard I.

AP No.	Description	Net Each, Lots of 1-9	10-24	25-49	50-99
923600	Breadboard I	$ 94.00	$ 90.00	$ 85.50	$ 82.75
923605	Breadboard II	120.00	114.50	108.00	104.75
923606	Superboard I	60.00	58.00	54.00	53.00
923607	Superboard II	100.00	96.00	91.00	88.00
923608	Superboard III	150.00	144.00	136.50	132.00

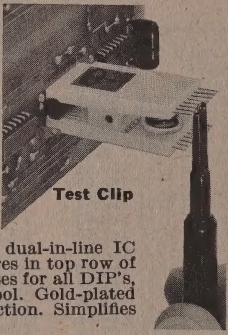
FOR IC TROUBLESHOOTING

DIGITAL TEST PROBES



Digital Probe

For positive detection and visual display of Logic "1" and Logic "0" voltage levels of DIP circuits in DTL, TTL and related logic groups. Provides high input impedance that eliminates loading. Attaches to A P test clip or .025″ square posts. Derives operating power from unit under test, no batteries involved. Overvoltage protection in DTP-II model.



Test Clip

IC TEST CLIPS

For positive, non-shorting electrical connection to leads on dual-in-line IC packages. Oscilloscope probes hang free on longer terminal wires in top row of test clip and do not interfere with terminals in bottom row. Sizes for all DIP's, e.g., TC-14 fits 14-pin DIP, etc. Excellent DIP-removal tool. Gold-plated phosphor bronze spring contacts are designed for wiping action. Simplifies testing, troubleshooting and QC inspection.

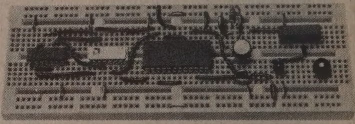
AP No.	Description	Net Each, Lots of 1-4	5-9	10-24	25-49
923650	Test probe I	$39.00	$36.75	$34.50	$32.75
923651	Test probe I with TC	45.00	41.25	38.75	37.25
923655	Test probe II	55.00	50.50	46.25	43.00
923656	Test probe II with TC	61.00	55.50	51.00	47.75
923660	Test probe II fuses (6 Pak)	5.50	5.50	5.50	5.50
		1-49	50-99	100-499	500-999
923695	Test clip TC8	$ 7.00	$ 6.50	$ 6.05	$ 5.60
923698	Test clip TC14	7.25	6.90	6.60	6.25
923700	Test clip TC16	6.00	5.70	5.40	4.90
923702	Test clip TC16 LSI	8.50	7.95	7.50	7.15
923703	Test clip TC18	9.50	8.75	8.35	7.60
923704	Test clip TC20	11.00	10.10	9.45	9.00
923705	Test clip TC22	11.00	10.10	9.45	9.00
923714	Test clip TC24	13.50	12.40	12.10	10.70
923718	Test clip TC28	14.50	13.40	12.55	11.70
923720	Test clip TC36	19.00	17.60	16.20	15.10
923722	Test clip TC40	20.00	18.35	17.20	16.10

TERMINAL STRIPS

Universal breadboarding matrix of 512 solderless, plug-in tie points. Full length double strip accepts up to eight 14-pin DIP's. All strips accept DIP's, TO-5's, discrete components, or any solid wire patch cords with lead diameters up to .032″. Sizes from 27 to 128 terminals with 4 tie points each, 1 tie point for component lead, 2 for input-output wires, 1 for test probe. Contacts are gold-plated beryllium copper. Body constructed of rugged acetal copolymer. High-temperature models available for testing up to 150° C.

DISTRIBUTION STRIPS

Distribution system of solderless, plug-in tie points. Ideal for circuits requiring two supply voltages and a ground return; also for signal distribution as in transfer, reset, shift, and clock lines. Low impedance. Breakdown voltage between buses exceeds 800 volts. Available in two sizes—half length 3-bus; full length dual 3-bus. Provides 24 tie points per bus. Accepts lead wires up to .032″ dia. Solder tails optional. Materials same as terminal strips.



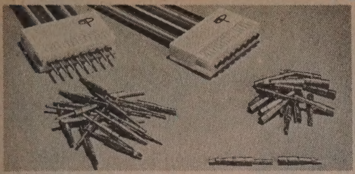
SUPER-STRIP

Universal breadboarding element has 840 solderless, plug-in tie points. Features integral low-impedance distribution system. Designed for use with LSI packages, all DIP's, TO-5's, discrete components, and jumper wires with lead diameters to .032″. Accepts up to eight 14-pin DIP's. Has 128 terminals of 5 tie points, and eight buses of 25 tie points. Materials are same as terminal strips.

AP No.	Description	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499	500-999
923725	Term. strip, full single	$ 7.75	$ 7.15	$ 6.65	$ 6.35	$ 6.10	$ 5.95
923726	Same as above, but hi-temp.	13.20	12.15	11.35	10.80	10.45	10.15
923727	Term. strip, ½ single	7.00	6.45	6.00	5.75	5.55	5.40
923730	Term. strip, full double	16.75	15.40	14.40	13.75	13.25	12.90
923731	Same as above, but hi-temp.	27.50	25.30	23.65	22.55	21.75	21.20
923733	Term. strip, ¾ double	14.50	13.35	12.50	11.90	11.45	11.15
923735	Term. strip, ½ double	12.75	11.30	10.95	10.45	10.05	9.80
923740	Distribution strip, full	11.00	10.10	9.45	9.00	8.70	8.45
923741	Distrib. strip, w/o tabs	8.75	8.05	7.55	7.20	6.90	6.75
923745	Distribution strip, ½	7.50	6.90	6.45	6.15	5.95	5.80
923746	Distrib. strip, ½ w/o tabs	6.00	5.50	5.15	4.90	4.75	4.60
923748	Super-strip	18.00	16.90	16.40	15.90	15.60	13.50

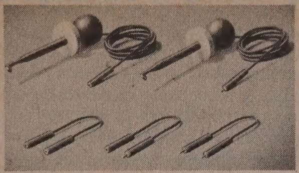
A P PRODUCTS Integrated Circuit Accessories IC Sockets, Patch Cords, Connectors, PC Cards & Files

FOR SPECIAL SYSTEMS AND PROTOTYPING



CONNECTOR PINS AND SOCKETS

Two sizes cover from .019″ to .035″ pin dia. Solder cup accepts up to 22 AWG wire. Has exceptionally secure grip. Units cannot be over-stressed, are practically indestructible. Pins are hard brass. Sockets are beryllium copper with brass sleeve, permit no contact damage. All are gold-over-nickel plated.



PATCH CORDS

PVC insulated 26 AWG stranded wire. Two pin sizes, .019″ and .030″. Two socket sizes, .019″–.028″, and .028″–.035″. E-Z Hook ends. Fit .025″ sq. posts and all A P plug-in hardware. Provides integral strain relief. Metal parts are gold-plated.

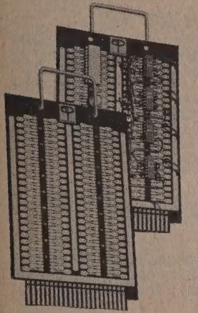
MINIATURE 8-PIN CONNECTORS

Designed for flat ribbon cable. Incorporate above pins and sockets. Part 923625, female, accepts .028″ to .035″ dia. pins. Used on A P test clips,. 025″ square posts, etc. Part 923627, female, accepts .019″ to .028″ dia. pins. Part 923626, male, has .030″ dia. pins. Used with Part 923625 female, terminal strips, etc. Part 923628, male, has .019″ dia. pins. Used with Part 923627 female, etc. Cover provides excellent strain relief. Body constructed of acetal copolymer.

AP No.	Description	Net per Pkg. of 100			
		1-9	10-24	25-49	50-99
923610	Connector sockets .019″/.028″	$27.50	$25.25	$23.00	$22.00
923612	Connector sockets .028″/.035″	27.50	25.25	23.00	22.00
923614	Connector pins .019″	22.00	20.25	19.25	17.50
923616	Connector pins .030″	22.00	20.25	19.25	17.50

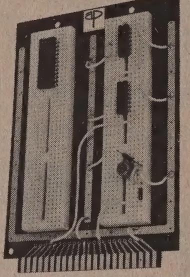
AP No.	Description	Net Each, Lots of			
		1-49	50-99	100-499	500-999
923625	8-pin connector .028″/.035″ (F)*	$2.75	$2.60	$2.50	$2.30
923626	8-pin connector .030″ (M)	2.20	2.05	1.95	1.90
923627	8-pin connector .019″/.028″ (F)	2.75	2.60	2.50	2.30
923628	8-pin connector .019″ (M)	2.20	2.05	1.95	1.90

*Attaches to test clip.



OMNICARDS

Mix any components with lead diameters up to .031″ dia. on continuous dual-in-line hole matrix. Pilot-hole solder points for easy front-surface soldering. Has 22 fingers on .156″ centers for single readout. Double-readout with ground plane optional. Available in 4⅜″ and 4½″ widths. Materials same as Unicards.



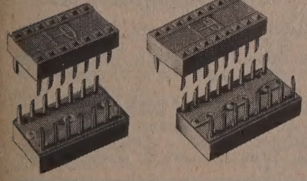
UNICARD I

Reusable, solderless, breadboarding PC card, 6⅜″ long. Accepts up to twelve 14-pin DIP's. Fits standard 5¼″ card racks. Employs two A P terminal strips (see description on other page) plus pre-drilled heavy bus and integral ground plane on NEMA grade G-10 glass epoxy board. 22-position double-readout finger pattern on .156″ centers. Circuits are gold-plated 2-oz. copper. Has low magnetic profile for high-speed circuitry. Extractor handle included.

AP No.	Description	Size, In.	Net Each, Lots of			
			1-9	10-49	50-99	100-499
923750	Omnicard w/o ground plane	4⅜	$ 9.25	$ 8.55	$7.85	$7.55
923751	Omnicard w/o ground plane	4½	9.25	8.55	7.85	7.55
923755	Omnicard with ground plane	4⅜	11.00	10.15	9.45	9.05
923756	Omnicard with ground plane	4½	11.00	10.15	9.45	9.05
923760	Omnicard extractor	.....	.50	.50	.50	.50

AP No.	Description	Size, Inches	Net Each, Lots of			
			1-9	10-24	25-49	50-99
923770	Unicard I	4⅜	$30.00	$28.90	$28.10	$26.30
923771	Unicard I	4½	30.00	28.90	28.10	26.30
923775	Unicard II	4⅜	53.50	50.65	47.90	44.60
923776	Unicard II	4½	53.50	50.65	47.90	44.60
923790	Extender card	4½ x 8½	24.00	22.10	20.75	19.65
923792	Extender card	4⅜ x 8½	24.00	22.10	20.75	19.65
923794	Extender card	4½ x 11	27.50	25.05	23.10	22.00
923796	Extender card	4⅜ x 11	27.50	25.05	23.10	22.00

FOR PRODUCTION ASSEMBLIES



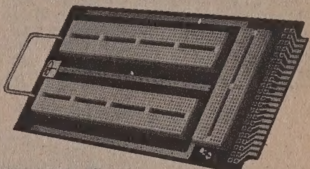
LOW PROFILE IC SOCKETS

The only socket with 2:1 withdrawal insertion ratio. Completely sealed, no solder wicking. Flux and solvents cannot enter contact area. Low profile, .150″ ht. includes standoff tabs on base for solder flush. Solder-tail configuration only. Mounts end to end on .100″ centers continuous line, or on .400″ centers row to row. Accommodates IC leads up to .16″ sq. or dia. Operating temp., −65° C to +150° C. Body, glass-filled polyester. Contacts, beryllium copper. Low contact resistance, 1.0 milliohm. Mounts in .032″ dia. holes (min.) on .100″ x .300″ centers.

AP No.	No. Pins	Body Color	Contact Plating	With-drawal Force	Net Each, Lots of			
					1-24	25-49	50-99	100-499
929601-01	14	Gray	Tin	6.4 lbs.	$0.86	$0.69	$0.57	$0.46
929601-02	14	Black	Gold	6.4 lbs.	1.12	.90	.75	.60
929602-01	16	Gray	Tin	7.3 lbs.	.95	.76	.64	.51
929602-02	16	Black	Gold	7.3 lbs.	1.23	.98	.82	.66

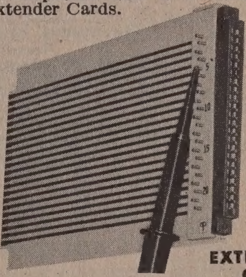
AP No.	Patch Cord Packaging Description	Net per Pkg.	
		1-49	50 Up
924961	.019″ dia. pin plug to pin plug, 20/pkg., assorted*	$13.20	$12.10
924962†	.030″ dia. pin plug to pin plug, 20/pkg., assorted*	13.20	12.10
924963	.019″/.028″ dia. socket to socket, 20/pkg., assorted*	15.40	14.20
924964†	.028″/.035″ dia. socket to socket, 20/pkg., assorted*	15.40	14.20
924965	.019″ dia. pin to .019″/.028″ socket, 20/pkg., assorted*	14.30	13.20
924966†	.030″ dia. pin to .028″/.035″ socket, 20/pkg., assorted*	14.30	13.20
924967	.019″ dia. pin plug to E-Z Hook, 10/pkg., 15″ long, 5 red and 5 black	13.80	12.70
924968†	.030″ dia. pin plug to E-Z Hook, 10/pkg., 15″ long, 5 red and 5 black	13.80	12.70
924969	.019″/.028″ dia. socket to E-Z Hook, 10/pkg., 15″ long, 5 red and 5 black	14.30	13.20
924970†	.028″/.035″ dia. socket to E-Z Hook, 10/pkg., 15″ long, 5 red and 5 black	14.30	13.20
924971	E-Z Hook to E-Z Hook, 10/pkg., 15″ long, 5 red and 5 black	16.00	14.75

*Length assortment: 9 at 2″; 6 at 4″; 3 at 6″; 2 at 9″; colors, black, red, yellow, blue. †Mate with A P breadboards, strips and test clips.



UNICARD II

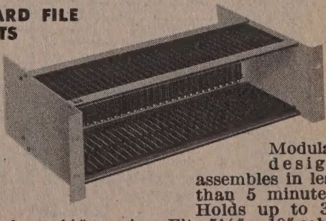
Same construction as Unicard I except two full-double terminal strips are used and half-double strip is added. Length, 9¾″. Accepts up to twenty 14-pin DIP's. Also added is front-mounted turret post for convenient ground termination and four rubber feet for protection during bench work. Compatible with A P Omnicards and Extender Cards.



PC EXTENDER CARDS

Exclusive turret posts, 22 on each side, allows testing of all 44 contact positions easily from the front, in card racks, and under power. Posts are staggered to allow non-shorting attachment of test probes. Probe will not slip off turret shape during hands-free testing. Double-readout connector has contacts on .156″ centers.

CARD FILE KITS



Modular design assembles in less than 5 minutes. Holds up to 32 cards on ½″ spacing. Fits 5¼″ x 19″ cabinet space. Accommodates 4⅜″ and 4½″ PC cards up to 6½″ long. Accepts standard 22-position, double-readout edge board connectors with contacts on .156″ centers.

AP No.	Description	Net Each, Lots of		
		1-9	10-24	25-49
923900	Card file kit	$30.80	$28.35	$26.50

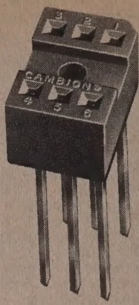
CAMBRIDGE THERMIONIC CORPORATION
CAMBION®

Integrated Circuit Accessories Sockets, Holders, Boards

DUAL IN-LINE IC SOCKETS

For 6, 8, 14, 16, 18, 22, 24, 36 and 40 pin dual in-line integrated circuits with either Wire-Wrap* or solder-tab terminations. One-piece molded diallyl insulators withstand high temperatures and provide excellent mechanical stability (Nos. -3777 and -3778 are one-piece molded glass-filled nylon with anti-moisture bosses). Phosphor bronze contacts accept flat or round pins up to .024″ dia. Standard terminal plating is **-03** gold for all Wire-Wrap; **-04** electrotin for all solder tab sockets. Sockets can be supplied with electrotin plating or Wire-Wrap pins or with gold plating on solder tab pins; prices on request. May be permanently mounted individually (rivet or screw) or press-mounted in PC boards or panels for production of breadboarding. Metric dimensional sockets for standard 14 and 16 pin DIPs are also available. *Reg. Gardner-Denver Co. TM.

Cambion Part No.	No. Contacts	Terminals	Inches		Net Each, Lots of			
			Overall Length	Term. Grid	1-9	10-99	100-499	500-999
703-3771-01-04-16	6	Solder tab	.334	.100 x .300	$0.82	$0.79	$0.55	$0.50
703-3881-01-03-16	6	Wire-Wrap	.334		.99	.95	.66	.60
703-3772-01-04-16	8	Solder tab	.434		.87	.84	.58	.53
703-3882-01-03-16	8	Wire-Wrap	.434		1.04	1.00	.70	.63
703-3777-01-04-12	14	Solder tab	.780		.79	.76	.53	.48
703-3788-01-04-16	14	Solder tab	.784		.98	.94	.66	.60
703-3897-01-03-16	14	Wire-Wrap	.784		1.16	1.11	.78	.71
703-3778-01-04-12	16	Solder tab	.834		.86	.83	.58	.52
703-3789-01-04-16	16	Solder tab	.884		1.05	1.01	.70	.64
703-3898-01-03-16	16	Wire-Wrap	.884		1.28	1.23	.86	.78
703-3787-01-04-16	18	Solder tab	.934		1.20	1.15	.80	.73
703-3895-01-03-16	18	Wire-Wrap	.934		1.53	1.47	1.03	.93
703-3785-01-04-16	22	Solder tab	1.180	.100 x .400	1.69	1.62	1.13	1.03
703-3892-01-03-16	22	Wire-Wrap	1.180		2.05	1.97	1.37	1.25
703-3790-01-04-16	24	Solder tab	1.280	.100 x .600	1.95	1.87	1.31	1.19
703-3896-01-03-16	24	Wire-Wrap	1.280		2.30	2.21	1.54	1.40
703-3783-01-04-16	28	Solder tab	1.480		2.18	2.09	1.46	1.33
703-3890-01-03-16	28	Wire-Wrap	1.480		2.52	2.42	1.69	1.54
703-3791-01-04-16	36	Solder tab	1.880		2.54	2.44	1.70	1.55
703-3893-01-03-16	36	Wire-Wrap	1.880		2.91	2.79	1.95	1.78
703-3766-01-04-16	40	Solder tab	2.080		2.77	2.66	1.86	1.69
703-3885-01-03-16	40	Wire-Wrap	2.080		3.15	3.00	2.11	1.92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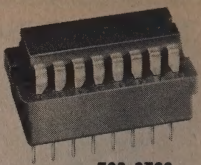
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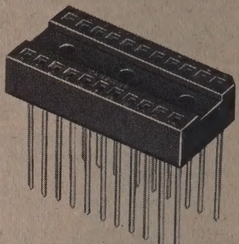
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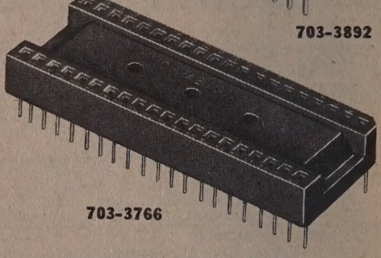
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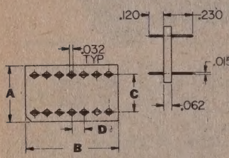
COMPONENT SOCKET ADAPTERS

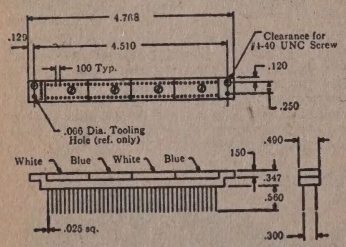


Component adapters plug into standard 14, 16, 24 or 36 pin dual in-line sockets as well as CAMBION's Integrated Socket strip. Larger width sizes for wider components straddle two sockets or socket strips. Terminal pairs are on .100″ or .200″ grid centers for varying component sizes; slotted for ease of parts mounting. Terminal is phosphor bronze, spring tempered per QQ-B-750 Comp. A. Finish is hard gold plate. Board material, .062″ type GEE glass epoxy per MIL-P-18177.

Cambion Part Number 702-	Dimensions, Inches				*	Net Each, Lots of		
	Board		Terminal Centers					
	A	B	C	D		1-9	10-49	50-99
3723-01-03-00	.450	.750	.300	.200	8	$0.63	$0.57	$0.50
3724-01-03-00	.950	.750	.800	.200	8	.63	.57	.50
3725-01-03-00	.450	.750	.300	.100	14	.95	.86	.76
3726-01-03-00	.950	.750	.800	.100	14	.95	.86	.76
3728-01-03-00	.450	.850	.300	.100	16	1.14	1.03	.91
3730-01-03-00	.950	.850	.800	.100	16	1.14	1.03	.91
3732-01-03-00	.750	1.235	.600	.200	12	.84	.76	.67
3734-01-03-00	.750	1.835	.600	.200	18	1.34	1.21	1.07

*No. of terminals.

80 PIN DUAL IN-LINE SOCKET STRIP



Molded diallyl body .025″ sq., Wire-Wrap posts and spring contacts, electro-tin plated. Mounts all dual in-line devices without a PC board. Flanges at the ends provide for independent mounting or into CAMBION mounting frame or relay rack drawers. Pins are replaced by removing the screw down covers. Socket strips accept five 14 pin DIPs, four or five 16 pin DIPs. Wider MSI or LSI DIPs can be mounted by bridging between two properly spaced strips.

Cambion Part No. 703-1000-01-04-00—
Net Each, 1–9............**$4.15**; 10–99..........**$4.00**
Net Each, 100–499.........**2.78**; 500–999.........**2.53**

Cambion Part No. 706-6050-01-00-00 Mounting Frame—Holds 21 socket strips (approx. 100 ICs). Size, 5″ x 11″ approximate. Net Each, 1–4...........**$16.80**; 5–9...........**$15.10**

Cambion Part No. 706-6051-01-00-00 Double Mounting Frame—Holds 2 rows of 21 socket strip each (approx. 200 IC total). Size, 10″ x 11″ approx. Net Each, 1–4........................**$24.70**
Net Each, 5–9...................................**22.20**

Cambion Part No. 706-6054-01-00-00 Mini Mounting Frame—Holds 6 socket strips (approx. 28 IC's). Size, 4″ x 5″ approx. Net Each, 1–4.............**$10.10**; 5–9.............**$9.10**

CAMBION drawer for 19″ relay rack 1¾″ h. or 3½″ h.; holds approx. 600 ICs. Information on request: 706-6000 Series.

PRECUT AND STRIPPED WIRE KIT

For wire-wrapping. Solid copper 30 AWG white insulated Kynar* wire, silver plated, ends stripped to tolerance. Kit contains 13 pkgs. of varied lengths from 1″ thru 9″. Per pkg.: 1″ thru 4.5″, 100 pcs.; 5″ thru 9″, 50 pcs. Also available 1.0″ thru 25.0″ lengths in black, red and white insulation on request.
*Reg. Pennsalt Chemicals Corp. TM.

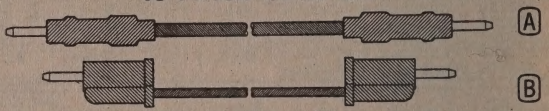
Cambion Part No. 718-1010-01-01-19—Net per Kit....**$40.80**

HAND WIRE WRAP TOOL

For wrapping solid copper 30 AWG wire. Low cost alternative to power equipment suitable for use in field repairs and by hobbyists and experimenters. Molded glass filled nylon. Size, 3.225″ x .480″ dia.

Cambion Part No. 435-1816-01-00-16—Net Each.......**$2.00**

IC PATCH CORD KIT



Contains 100 pieces (48 pcs., Fig. A; 52 pcs., Fig. B) pin patch cords .040″ dia. Red, blue and black in 2″, 4″, 6″ and 8″ lgths. Ideal for breadboarding requirements.

Cambion Part No. 446-3892-01-00-00—Net per Kit....**$57.80**

Cambion Part No. 446-3990-01-00-00—Contains 55 pieces stackable patch cords (Fig. B). Red, black and blue in 2″, 4″, 6″ and 8″ lengths. Net per Kit..............................**$34.50**

Cambion Part No. 446-3991-01-00-00—Contains 73 pieces stackable patch cords (Fig. B). Red, black and blue in 2″, 4″, 6″ and 8″ lengths. Net per Kit..............................**$46.00**

SOCKET TYPE HIGH DENSITY BREADBOARDS

16 pin dual-in-line sockets. Socket terminals connected via printed wiring to .040″ cage jacks. Use with Cambion IC patch boards. Power and ground planes included.

Cambion Part No. 705-1024-01-00-00—16 sockets. Board size, 6.5″ x 6.5″. Net Each, 1–4.......**$53.70**; 5–9.......**$51.00**

Cambion Part No. 705-1022-01-00-00—32 sockets. Board size, 6.5″ x 11.5″. Net Each, 1–4.......**$94.80**; 5–9.......**$90.10**

EXPERIMENTAL BREADBOARDS

Socket type breadboards for small circuit building applications. Socket terminal connected via printed wiring to .040″ cage jacks. Use with Cambion IC patch cords. Binding posts for power supply connections included. Size, 4.5″ x 6.5″.

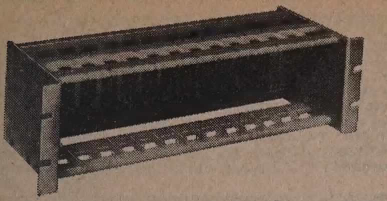
Cambion Part No.	Sockets	Pins/Socket	Accepts X-Pin DIPs	Net Ea., Lots	
				1-4	5-9
705-2105-02-00-00	4	18	6, 8, 14, 16, 18	$18.70	$17.80
705-2109-02-00-00	2†	22	22	18.50	17.60
705-2115-02-00-00	2	28	24, 28	17.50	16.60
705-2118-02-00-00	1*	40	24, 28, 36, 40	22.90	21.80

*Zero insertion force socket. †Includes decals for pin identification.

CAMBRIDGE THERMIONIC CORPORATION

CAMBION®

Integrated Circuit Accessories Card Files, Logic & Cambi-Cards



13 POSITION CARD FILE

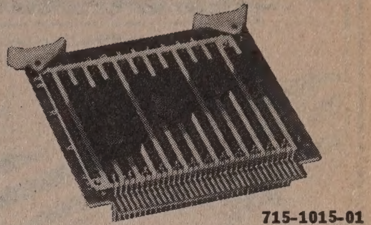
Designed to provide maximum flexibility in a choice of logic accessories. Thirteen position card file has 1¼″ card spacing. Complete with 13 Wire-Wrap connectors, voltage and ground power planes. Other styles and sizes available. Complete listing on request.

Cambion Part No.	For Card Size, In.	Net Each, Lots 1-4	Net Each, Lots 5-9	Cambion Part No.	For Card Size, In.	Net Each, Lots 1-4	Net Each, Lots 5-9
706-9002-02	4.5 x 9.25	$197.20	$177.50	706-9005-02	4.5 x 4.5	$194.30	$174.90

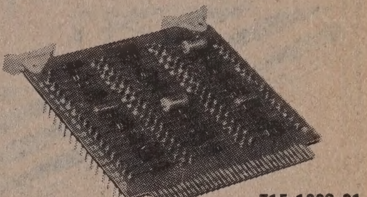
HIGH DENSITY WIRE-WRAP* CAMBI-CARDS®

Printed circuit boards designed to accept dual in-line IC sockets, in-line integrated circuits and discrete components in a tightly arranged package for Wire-Wrap interconnections. Each socket position on **715 Series** (on every other row on **714 Series**) has two auxiliary pins to permit connecting each IC to power and ground planes. Cards with sockets affixed; with sockets and spaces for discretes; for all discretes; copper-clad and blank cards; card extenders and general purpose cards without sockets but with grid patterns permitting mixing any combination of in-line ICs in any mounting pattern. All cards have edge connectors which plug into standard CAMBION card files, available with or without mating power planes. Board material—.062″ thick, double clad copper, epoxy glass cloth type FL-GE per MIL-P-13949. Pin plating, gold over phosphor bronze material.

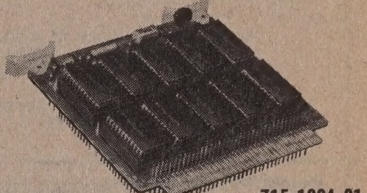
*Registered Gardner-Denver Co. TM



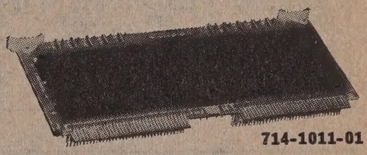
715-1015-01



715-1002-01



715-1004-01



714-1011-01

715 SERIES—70 PIN INPUT/OUTPUT CONNECTORS

All cards 4.5″ wide.

Cambion Part No.	Card Lgth. In.	No. of Sockets per Card	No. of Pins/ Socket	Net Each, Lots of 1-4	5-9	10-24
715-1000-01	4.5	Card extender	....	$ 37.70	$ 33.90	$30.20
715-1001-01	4.5	Blank comp. card	....	23.20	20.90	18.60
715-1002-01	4.5	Discretes only	....	39.00	35.10	31.20
715-1004-01	4.5	10 plus discretes	24	64.70	58.20	51.80
715-1005-01	4.5	16 plus discretes	16	64.80	58.30	51.80
715-1006-01	4.5	16 plus discretes	14	62.40	56.20	49.90
715-1011-01	4.5	24	16	64.80	58.30	51.80
715-1013-01	4.5	24	14	62.40	56.20	49.90
715-1015-01	4.5	Gen'l purpose (w/o sockets)	....	29.60	26.60	23.70
715-1016-01	4.5	Copper clad card	....	9.05	8.15	7.25
715-1100-01	9.25	Card extender	....	37.70	33.90	30.20
715-1101-01	9.25	Blank comp. card	....	27.70	24.90	22.20
715-1102-01	9.25	Discretes only	....	44.40	40.00	35.50
715-1104-01	9.25	25 plus discretes	24	112.00	100.80	89.60
715-1105-01	9.25	56 plus discretes	16	114.50	103.10	91.60
715-1106-01	9.25	56 plus discretes	14	109.80	98.80	87.80
715-1111-01	9.25	64	16	114.50	103.10	91.60
715-1113-01	9.25	64	14	109.80	98.80	87.80
715-1115-01	9.25	Gen'l purpose (w/o sockets)	....	39.20	35.30	31.40
715-1116-01	9.25	Copper clad card	....	10.00	9.00	8.00

714 SERIES—140 PIN INPUT/OUTPUT

All cards 9.75″ wide.

Cambion Part No.	Card Lgth. In.	No. of Sockets per Card	No. of Pins/ Socket	Net Each, Lots of 1-4	5-9	10-24
714-1011-01	4.5	54	16	$130.50	$117.50	$104.40
714-1013-01	4.5	54	14	121.10	109.00	96.90
714-1015-01	4.5	Gen'l purpose (w/o sockets)	....	42.30	38.10	33.80
714-1016-01	4.5	Copper clad card	....	19.00	17.10	15.20
714-1111-01	9.25	126	16	224.90	202.40	179.90
714-1113-01	9.25	126	14	194.30	174.90	155.40
714-1115-01	9.25	Gen'l purpose (w/o sockets)	....	47.70	42.90	38.20
714-1116-01	9.25	Copper clad board	....	19.00	17.10	15.20

LOGIC FUNCTION CARDS

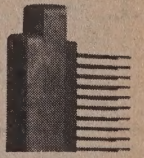
CAMBION offers a complete line of logic function cards, all of which may be used with above standard, 4½″ h., "714" and "715" series Wire-Wrap cards. Write for complete information on logic function cards.

UNIVERSAL PANELS

CAMBION universal panels support Wire-Wrap jacks arranged in columns .300″ apart which accept dual-in-line packages with .300″ and .600″ pin alignment. Separate power planes are provided on each side of the panels. Several Wire-Wrap pins are provided adjacent to each column with direct connection to the power planes. Panels are available with one through six sections. Each section has large power and ground terminals for connection to power supplies and for the mounting of bulk decoupling capacitors.

Cambion Part No.	Description	Net Each, Lots of 1-4	5-9
707-1040-01-00-00	Power panel (1-section)	$ 60.60	$ 54.50
707-1040-02-00-00	Power panel (2-section)	119.40	107.50
707-1040-03-00-00	Power panel (3-section)	178.50	160.70
707-1040-04-00-00	Power panel (4-section)	237.30	213.60
707-1040-05-00-00	Power panel (5-section)	296.40	266.80
707-1040-06-00-00	Power panel (6-section)	355.40	319.90

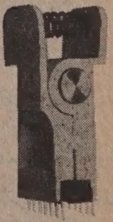
70 PIN CARD CONNECTOR



Cambion Part No.	Terminals	Net Each, Lots of 1-4	5-9	10-24
706-7029-01	Solder lug	$6.35	$5.70	$5.40
706-7015-01*	Wire-Wrap	7.45	6.70	6.35

*For use with CAMBION Power Planes.

IC INSERTION-EXTRACTION TOOL



Handy tool properly positions integrated circuits for insertion or extraction by securely gripping the IC between the leads and under the body. Practically any IC with 14 or 16 leads aligned on 0.300″ centers can easily be inserted or extracted regardless of tight packaging and without damage to the fragile IC leads. Basic material of insertion-extraction tool is plastic.

Cambion Part No. 706-3739-01—
Net Each, 1-4......**$0.97**; 5-9......**$0.87**
Net Each, 10-24......................**.82**

IC TESTERS

Provide easy test point access to 14 and 16 pin Dual-In-Line IC's under operating conditions. Tester is placed over top of IC and makes contact with the exposed portion of each lead.

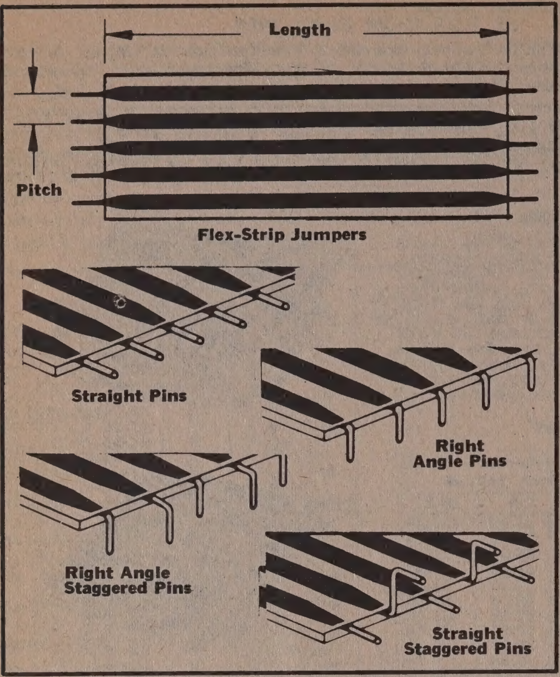
Cambion Part No. 706-1020-01-00-00 14-Pin Tester—
Net Each, 1-4..............**$2.22**; 5-9..............**$2.00**

Cambion Part No. 706-1019-01-00-00 16-Pin Tester—
Net Each, 1-4..............**$2.41**; 5-9..............**$2.17**

Ansley

Subsidiary of Thomas & Betts Corporation

FLEX-STRIP® JUMPERS



FLEX-STRIP JUMPERS

Flex-Strip flat cable jumpers are designed to meet all the requirements for flexing, ease of use, and lowest installed cost in electronic packaging. Available with four different kinds of insulation to accommodate every environment. The conductors are flat for flexibility. Contacts are round for easy insertion into board hole patterns or sockets. Flex-Strip jumpers are ready to use with no wire stripping, no cutting to length or preparation for soldering. Available in four different pin arrangements (see below). **Pin Length:** ⅛″. **Pin Diameter:** .012″ for .050″ pitch; .020″ for all others.

ORDERING INFORMATION

FS N - 1 2 A - 20

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

Ⓐ Product code.

Ⓑ Insulation Material: **N,** Nomex*
M, Mylar*
T, Teflon*
K, Kapton*

Ⓒ Conductor Pitch: **1,** .050″
2, .100″
3, .125″
4, .150″
5, .200″

Ⓓ Length: **1,** 1″
2, 2″
3, 3″

Ⓔ Pin Arrangement: **A,** Straight pins
B, Right angle pins
C, Right angle staggered pins
D, Straight staggered pins

Ⓕ Number of conductors.

Example: **FSN-12A-20** is a Flex-Strip jumper with Nomex insulation, .050″ conductor pitch, 2″ l., straight pins & 20 conductors.
*DuPont registered trademark.

FLEX-STRIP JUMPER PRICING

1—Multiply number of conductors per jumper x order quantity = total number of lines.
2—With this total number of lines, look in the column for price per line.
3—Multiply price per line x number of conductors per jumper = price per jumper.

EXAMPLE: 200 pieces of FSN-21C-20
1—200 x 20 = 4000 lines.
2—Price per line is **$0.09.**
3—$0.09 x 20 = **$1.80** each.

STRAIGHT PINS (SERIES A)

Number of Lines	Net per Line											
	1-Inch Length				2-Inch Length				3-Inch Length			
	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton
Under 1000	$0.10	$0.15	$0.20	$0.28	$0.11	$0.165	$0.22	$0.308	$0.12	$0.18	$0.24	$0.336
1000	.075	.113	.15	.21	.083	.124	.165	.231	.09	.136	.18	.252
2000	.07	.105	.14	.196	.077	.116	.154	.216	.084	.126	.168	.235
3000	.065	.098	.13	.185	.072	.108	.143	.20	.078	.118	.156	.218
4000	.06	.09	.12	.168	.066	.099	.132	.185	.072	.108	.144	.202
5000	.055	.083	.11	.154	.061	.091	.121	.169	.066	.10	.132	.185
10000	.05	.075	.10	.14	.055	.082	.11	.154	.06	.09	.12	.168

RIGHT ANGLE PINS (SERIES B)

Number of Lines	Net per Line											
	1-Inch Length				2-Inch Length				3-Inch Length			
	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton
Under 1000	$0.12	$0.18	$0.24	$0.336	$0.132	$0.198	$0.264	$0.37	$0.144	$0.216	$0.288	$0.403
1000	.09	.136	.18	.252	.099	.15	.198	.277	.108	.163	.216	.302
2000	.084	.126	.168	.235	.092	.139	.185	.258	.101	.151	.202	.282
3000	.078	.118	.156	.218	.086	.13	.172	.24	.094	.142	.187	.262
4000	.072	.108	.144	.202	.079	.119	.158	.222	.086	.13	.173	.242
5000	.066	.10	.132	.185	.073	.11	.145	.203	.079	.12	.158	.222
10000	.06	.09	.12	.168	.066	.099	.132	.185	.072	.108	.144	.202

RIGHT ANGLE STAGGERED PINS (SERIES C)

Number of Lines	Net per Line											
	1-Inch Length				2-Inch Length				3-Inch Length			
	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton
Under 1000	$0.15	$0.225	$0.30	$0.42	$0.165	$0.247	$0.33	$0.462	$0.18	$0.27	$0.36	$0.504
1000	.113	.17	.225	.315	.124	.187	.247	.346	.136	.204	.27	.378
2000	.105	.157	.21	.294	.115	.173	.231	.323	.126	.188	.252	.353
3000	.097	.147	.195	.273	.107	.162	.214	.30	.116	.176	.234	.327
4000	.09	.135	.18	.252	.099	.148	.198	.277	.108	.162	.216	.302
5000	.082	.124	.165	.231	.09	.136	.181	.254	.098	.149	.198	.277
10000	.075	.112	.15	.21	.082	.123	.165	.231	.09	.134	.18	.252

STRAIGHT STAGGERED PINS (SERIES D)

Number of Lines	Net per Line											
	1-Inch Length				2-Inch Length				3-Inch Length			
	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton	Nomex	Mylar	Teflon	Kapton
Under 1000	$0.15	$0.225	$0.42	$0.42	$0.165	$0.247	$0.462	$0.462	$0.18	$0.27	$0.504	$0.504
1000	.113	.17	.315	.315	.124	.187	.378	.378	.136	.204	.378	.378
2000	.105	.157	.294	.294	.115	.173	.323	.323	.126	.188	.353	.353
3000	.097	.147	.273	.273	.107	.162	.30	.30	.116	.176	.327	.327
4000	.09	.135	.252	.252	.099	.148	.277	.277	.108	.162	.302	.302
5000	.082	.124	.231	.231	.09	.136	.254	.254	.098	.149	.277	.277
10000	.075	.112	.21	.21	.082	.123	.231	.231	.09	.134	.252	.252

Ansley

Subsidiary of Thomas & Betts Corporation

FLEX-STRIP SOCKETS, BLUE STREAK CONNECTOR SYSTEM

FLEX-STRIP® LOW PROFILE SOCKET

Low profile socket for jumper disconnect available on strip reels of 1000 sockets. Socket is supplied on Kapton* carrier strip which permits the carrier to be left in position when the socket is soldered. Socket is a two-piece design having gold plated beryllium copper contacts inside a tinned copper cup. Cup allows socket to be wave or hand soldered from the underside without solder flow into contact area. Features include: Sockets on .100″ centers; low profile, .030″ above board; easily inserted by hand; no special tooling necessary; positive retention prior to soldering; fits hole size .050″ to .058″.

Ansley Number	Net per 100					
	100	500	1M	2.5M	5M	10M
741	$20.00	$15.00	$10.00	$8.00	$7.50	$7.00

*DuPont registered trademark.

FLEX-STRIP JUMPER SOCKET STRIPS

Pin socket strips for Flex-Strip jumpers provide reliable disconnect system. Features include: No solder wicking with anti-wicking wafer; 5, 14 and 20 positions standard; contacts on .100″ centers; .157″ above PC board; can be butted end to end and maintain .100″ center distance. **Insulator:** Glass filled nylon (type 6/6). **Color:** Black. **Contacts:** Beryllium copper. **Plating:** .00010″ gold per MIL-G-45204 type II. **Insulation Resistance:** 5000 megohms. **Contact Resistance:** 15 milliohms. **Operating Temperature:** −55° C to +155° C. Lead length, .138″.

Ansley No.*	Size, Inches	Net Each, Lots of					
		10	50	100	250	500	1000
742-5	.496 x .106 x .157	$0.75	$0.53	$0.46	$0.44	$0.41	$0.37
742-14	1.396 x .106 x .157	1.40	.98	.84	.70	.66	.63
742-20	1.996 x .106 x .157	2.00	1.40	1.20	1.00	.94	.90

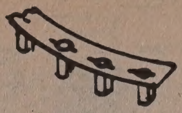
*No. of positions indicated by number after 742- (e.g., 742-5).

BLUE STREAK™ CABLE/CONNECTOR SYSTEM

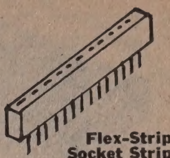
BLUE STREAK™ CABLE

Flat cable with all the advantages of space and weight reduction, flexibility, consistent electrical characteristics. Color coded for every fifth conductor. Compatible with self-stripping or insulating piercing connectors. Both sides of cable are ribbed for complete cable-to-connector positioning versatility. Polarized cable is self-extinguishing and is UL Recognized. **Conductor Size:** 28 AWG stranded; 28 AWG solid; 30 AWG solid. **Insulation:** Vinyl (PVC) self-extinguishing. **Temperature:** +105° C. **Insulation Resistance:** 1000 megohms/ft. **Size:** .034″ thick; .050″ between conductors; see width below.

Ansley Number	No. of Cond.	Type	Width, In.	Rolls per Ctn.	Net per 100-ft. Roll		
					1 Roll	5 Rolls	10 Rolls
171-14	14	28 AWG Stranded PVC Insulation	.700	10	$22.70	$19.30	$15.90
171-16	16		.800	10	25.90	22.00	18.15
171-20	20		1.000	10	32.40	27.55	22.70
171-26	26		1.300	10	42.10	35.80	29.50
171-34	34		1.700	5	55.10	46.80	38.55
171-40	40		2.000	5	64.80	55.10	45.35
171-50	50		2.500	5	81.00	68.85	56.70
172-14	14	30 AWG Solid PVC Insulation	.700	10	18.75	15.95	13.10
172-16	16		.800	10	21.45	18.20	15.00
172-20	20		1.000	10	26.80	22.80	18.75
172-26	26		1.300	10	34.85	29.60	24.40
172-34	34		1.700	5	45.55	38.75	31.90
172-40	40		2.000	5	53.60	45.55	37.50
172-50	50		2.500	5	67.00	56.95	46.90
173-14	14	28 AWG Solid PVC Insulation	.700	10	21.40	18.15	14.95
173-16	16		.800	10	24.35	20.65	17.05
173-20	20		1.000	10	30.45	25.95	21.40
173-26	26		1.300	10	39.60	34.65	27.75
173-34	34		1.700	5	51.90	44.00	36.25
173-40	40		2.000	5	60.80	51.95	42.50
173-50	50		2.500	5	76.50	64.60	53.20

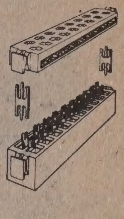


Flex-Strip Socket

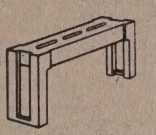


Flex-Strip Socket Strip

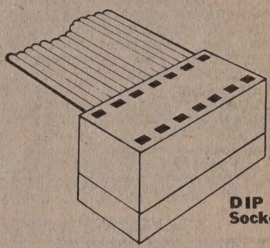
Blue Streak Cable



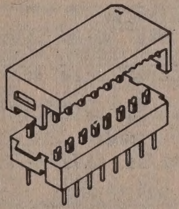
Wrap Post Transition Connector



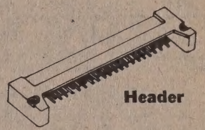
Strain Relief



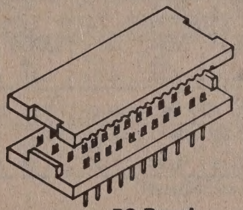
DIP Socket



DIP Plug



Header



PC Board Transition Connector

SERIES 609 CONNECTORS

For standard .025″ square wire wrapping posts on .100″ grid. Insulation piercing contacts eliminate need for stripping wire insulation. Controlled engagement length with mating pins. Permits visual inspection. Open ended cover permits daisy chain assemblies. Positive latch of cover to housing. Strain relief pulls directly on the housing and not on the cover. 25 connectors per carton. **Plastic Material:** Polyester (glass filled). **Contact Material:** Full hard phosphor bronze. **Plating:** 30 microinch gold over 30 microinch nickel. **Insertion Force:** 300 grams (individual contact). **Withdrawal Force:** 50 grams (individual contact). **Contact Rating:** 1 amp. **Dielectric Strength:** 1500 volts rms. **Temperature Rating:** 105° C.

WRAP POST TRANSITION CONNECTORS

Ansley Number	Contacts	Size, Inches	Net Each, Lots of			
			25	100	500	1000
609-5000	50	2.685 x .235 x .475	$5.16	$4.50	$3.90	$3.45
609-4000	40	2.185 x .235 x .475	4.12	3.60	3.15	2.75
609-3400	34	1.885 x .235 x .475	3.52	3.10	2.70	2.35
609-2600	26	1.485 x .235 x .475	2.70	2.35	2.10	1.80
609-2000	20	1.185 x .235 x .475	2.10	1.80	1.57	1.40

STRAIN RELIEF

609-5001	50	Installed Height .725	$0.30	$0.27	$0.26	$0.25
609-4001	40		.30	.27	.26	.25
609-3401	34		.30	.27	.26	.25
609-2601	26		.30	.27	.26	.24
609-2001	20		.30	.27	.26	.24

DIP SOCKETS

Ansley Number	Contacts	Size, Inches	Net Each, Lots of			
			25	100	500	1000
609-F141*	14	....	$1.40	$1.30	$1.15	$1.00
609-F161*	16	....	1.60	1.45	1.30	1.15

*50 connectors per carton.

DIP PLUGS

609-M141†	14	.762 x .420 x .248	$1.25	$1.10	$0.95	$0.85
609-M161†	16	.862 x .420 x .248	1.45	1.25	1.10	.95

†100 connectors per carton.

HEADERS

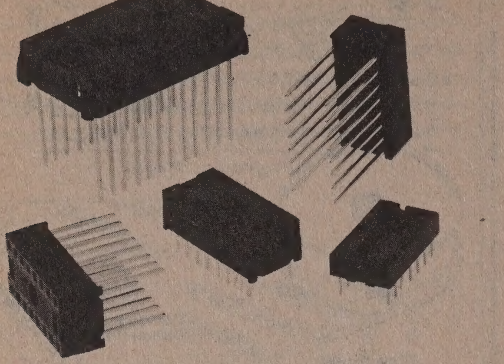
609-5002	50	3.260 x .680 x .350	$2.60	$2.25	$1.95	$1.75
609-4002	40	2.760 x .680 x .350	2.10	1.80	1.55	1.40
609-3402	34	2.460 x .680 x .350	1.75	1.55	1.35	1.20
609-2602	26	2.060 x .680 x .350	1.35	1.20	1.00	.90
609-2002	20	1.760 x .680 x .350	1.05	.90	.80	.70

PC BOARD TRANSITION CONNECTORS

609-5003	50	2.685 x .440 x .225	$2.60	$2.25	$1.95	$1.75
609-4003	40	2.185 x .440 x .225	2.10	1.80	1.60	1.40
609-3603	36	1.885 x .440 x .225	1.85	1.65	1.45	1.25
609-3403	34	1.485 x .440 x .225	1.80	1.60	1.40	1.20
609-2003	20	1.185 x .440 x .225	1.05	.90	.80	.70

SCANBE ELECTRONIC PACKAGING HARDWARE

ME-2 DUAL INLINE SOCKETS—14-, 16-, 24-PIN



Constructed of self-extinguishing, glass-filled nylon, UL Approved. Contacts are phosphor bronze per QQ-B-750, gold plated per MIL-G-45204, Type II, 20 μ inches, min. over 50 μ inches nickel. Contacts have .025″ square wrap post or solder terminals. Features include solder relief, anti-rock 4 post design, polarity identification, tapered entry channels. Mounting holes accommodate No. 2-56 Fillister head screw. Also features removable cap, sturdy cap latch, removable pin, and dual high-reliability wiping contacts. Current rating, 1 amp DC. Contact resistance, 8 milliohms, typical, contact surface to pin tip. Insertion force per pin, 100 gm (250 gm max). Extraction force per pin, 60 gm (30 gm min.). Size without terminals, 14-Pin, .745″ w. x .398″ d. x .275″ h.; 16-Pin, .845″ w. x .398″ d. x .275″ h.; 24-Pin, 1.30″ w. x .80″ d. x .275″ h. Black color standard. Standard sockets are available with 3 level, 2 level, or 1 level Wire Wrap• pins or solder terminations, gold or tin plated and black body. Write for more information.

3 LEVEL WRAP PINS, .635″ LENGTH

Scanbe No.	Net Each, Lots of					
	100-499	500-999	1000-1999	2000-4999	5000-9999	10,000-24,999*
ME-2-14-W-G-B	$0.55	$0.50	$0.45	$0.425	$0.40	$0.37
ME-2-16-W-G-B	.60	.55	.50	.47	.44	.395
ME-2-24-W-G-B	1.50	1.45	1.35	1.30	1.20	1.10

2 LEVEL WRAP PINS, .425″ LENGTH

ME-2-14-2W-G-B	$0.54	$0.49	$0.44	$0.415	$0.39	$0.365
ME-2-16-2W-G-B	.58	.53	.48	.45	.42	.375
ME-2-24-2W-G-B	1.43	1.39	1.28	1.23	1.13	1.03

1 LEVEL WRAP PINS, .310″ LENGTH

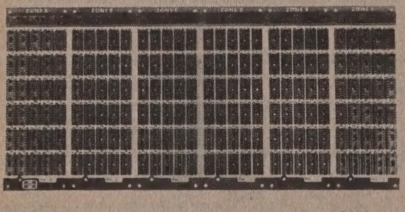
ME-2-14-1W-G-B	$0.53	$0.48	$0.43	$0.405	$0.38	$0.355
ME-2-16-1W-G-B	.57	.52	.47	.44	.41	.365
ME-2-24-1W-G-B	1.39	1.36	1.25	1.20	1.10	1.00

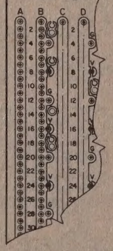
SOLDER TAIL TIN OR GOLD, .135″ LENGTH

ME-2-14-S-T-B	$0.39	$0.37	$0.34	$0.31	$0.29	$0.28
ME-2-16-S-T-B	.47	.44	.38	.37	.33	.32
ME-2-24-S-T-B	1.39	1.30	1.19	1.14	1.04	.94

*25,000 Up available on request.

UNIVERSAL SOCKET PANELS

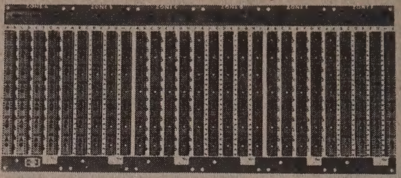


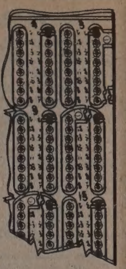


Features exclusive, plated through holes for mounting de-coupling capacitors. Each two zones accept 2 electrolytics, 8 tantalums, and 28 monolithic ceramics. Panels are modular construction. Available with 18, 36, or 54 rows. Each zone consists of 9 pin rows with 46 1/0 pins per zone. Vcc and gnd planes are on opposite sides of panels with 12 Vcc/gnd pins for every 2 rows. Panels accept 14, 16, 24, 36 and 40 lead DIPs, or any DIP with multiples of 0.300″ by 0.100″ lead pattern. Provides 50 contacts per row on 0.100″ centers. Rows spaced 0.300″ apart, accept any DIP with a 0.100″ by multiple of 0.300″ pin pattern. Size: Panel depth, 6.875″; panel thickness, .125″. Panel widths shown in tables below.

Scanbe No.	No. of Pin Rows	Panel Width	Net Each, Lots of		
			1-4	5-9	10-24
LPU-18	18	5.375″	$ 89.75	$ 85.25	$ 78.50
LPU-36	36	10.775″	176.50	167.50	154.50
LPU-54	54	16.175″	264.75	252.00	232.10

STANDARD SOCKET PANELS





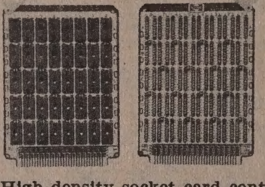
Panels feature exclusive plated through holes for mounting de-coupling capacitors. Each zone accepts 1 electrolytic, 4 tantalum, and 13 monolithic ceramics. Modular construction. Panels available in multiples of 30 sockets up to 180 sockets. Vcc and gnd. planes are on opposite sides of panels with 2 committed pins per socket. Patterns accept 14 or 16 pin DIPs. Panels provided with 30 to 180 sockets in zones of 30 sockets. Each zone has 46 1/0 pins. Size: Panel depth, 14-Pin, 6.875″; 16-Pin, 7.475″; panel thickness, .125″. Panel width shown in tables below.

STANDARD 14-PIN LOGIC PANELS

Scanbe No.	No. of Positions	Pins/Pattern	Panel Width	Net Each, Lots of		
				1-4	5-9	10-24
LPS-14VG-30	30	14	2.675″	$ 46.95	$ 44.62	$ 41.10
LPS-14VG-60	60	14	5.375″	93.00	88.30	81.35
LPS-14VG-90	90	14	8.075″	137.95	131.00	120.75
LPS-14VG-120	120	14	10.775″	174.25	165.00	150.25
LPS-14VG-150	150	14	13.475″	219.00	208.00	191.50
LPS-14VG-180	180	14	16.175″	259.90	246.90	228.00

STANDARD 16-PIN LOGIC PANELS

LPS-16VG-30	30	16	2.675″	$ 47.95	$ 45.75	$ 42.25
LPS-16VG-60	60	16	5.375″	96.10	91.25	84.10
LPS-16VG-90	90	16	8.075″	144.95	138.00	127.75
LPS-16VG-120	120	16	10.775″	183.25	174.50	159.25
LPS-16VG-150	150	16	13.475″	229.50	218.50	202.00
LPS-16VG-180	180	16	16.175″	272.95	259.90	241.00



"WRAP RACK" SYSTEMS

SOCKET CARDS

FOR

SOLDERLESS WRAP

High density socket card contains 40 16-pin ME-2 DIP sockets for 72-pin .100″ I/O connectors. Vcc and gnd. pin at each socket position allows complete flexibility in connecting socket pins to either plane. Card has provisions for mounting 16 monolithic ceramic and 8 tantalum capacitors while providing 72 I/O contacts and 12 test points. Cards are constructed of .062″ thick glass epoxy. Copper, solder plated circuitry on both sides. Sockets have .025″ sq. wire posts, .573″ in length. "Wrap" terminations are on a .300″ x .100″ grid and also accept discrete component headers when combinations of DIPs and discretes are required. Socket positions are identified on both sides of card and contacts are gold plated. In/Out "wrap" pins mounted and soldered at mating end of card provide compatible wiring transition from socket pins to input/output circuitry. Card size, 4½″ x 6″.

Scanbe No.	No. of Sockets	No. of Pins per Socket	Net Each, Lots of			
			1-4	5-9	10-24	25-49
11374	40	16	$59.25	$56.00	$53.25	$50.25

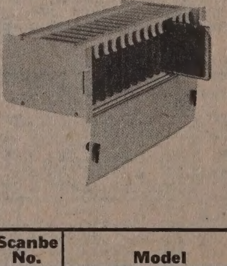
EXTENDER AND TERMINATION CARDS FOR SOCKET CARD NO. 11374

Scanbe No. 11303—Extended PC Card 72 Pin. Net Ea. . .**$32.00**
Scanbe No. 11305—Termination PC Card 72 Pin. Net. . . **17.50**

CONNECTOR, 72-PIN, FOR SOCKET CARD 11374

Double row, 72 contact Wire Wrap connectors.
Scanbe No. 11302—Net Each, 1–24. . . .**$7.25**; 25–49. . . .**$6.75**

CARD RACKS FOR 11374 CARD



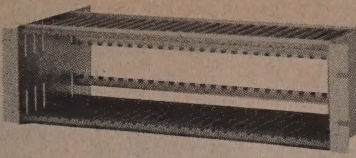
Holds 14 circuit cards. Ruggedly constructed, each rack consists of 28 nylon guides extending to rear mounted edge card Wire Wrap 11302. Racks have ⅛″ aluminum end plates for standard 19″ mounting. Card to card spacing of 1.200″ provides excellent ventilation for cooling purposes. Card guides and spaces are injection molded of MIL-M-20693A Type 4A nylon and are self-lubricating to provide smooth card insertion. Compatible with Socket Card No. 11374. Supplied with or without protective hinged front panel. Size, standard 5¼″ EIA rack.

Scanbe No.	Model	Net Each, Lots of			
		1-4	5-9	10-24	25-49
11321	With front panel	$35.00	$33.25	$31.50	$29.75
11322	Without front panel	28.50	27.07	25.65	24.23

•Reg. Gardner-Denver trademark.

SCANBE ELECTRONIC PACKAGING HARDWARE

CARD-MATE II CIRCUIT CARD AND CONNECTOR MOUNTING FILE KIT



Holds up to 27 circuit cards 6″ to 8″ long, 0.75″ to 6.25″ wide. Card spacing available in 1/8″ increments from .500″ minimum. Provides a completely integrated, economical circuit card support system. Use any type connector, inline or offset. Multi-slotted end plates adapt easily to different card sizes. Rack mounting is 19″ long, 8 3/4″ deep. Precision molded nylon and aluminum parts are fast and easy to assemble. Complete with 27 connector mounts. End plates available in heights 5 1/4″ and 7″. Separate end plates and hinged front cover with latch, not included in standard kit, available as extra parts.

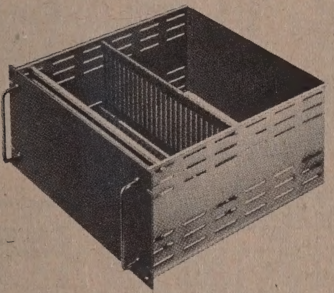
Scanbe No.	End Plate		Card Thickness	Card Width		Connector Mtg. Ctr.	
	Size	Mtg.		Min.	Max.	Min.	Max.
20725	5 7/32″	2 1/4″	1/16″	3/4″	4 1/2″	1.117″	4.117″
20726	5 7/32″	2 1/4″	3/32″	3/4″	4 1/2″	1.117″	4.117″
20727	6 31/32″	4″	1/16″	1″	6 1/4″	.625″	5.867″
20728	6 31/32″	4″	3/32″	1″	6 1/4″	.625″	5.867″

Card-Mate II File Kits—Net Each, Lots of 1–4 .... **$24.95**
Lots of: 5–9... **$23.45**; 10–24... **$22.00**; 25–49... **20.50**

CARD-MATE II SEPARATE END PLATES AND HINGED FRONT PANEL WITH LATCH

Scanbe No.	Description	Net per Pair, Lots of			
		1-4	5-9	10-24	25-49
21800	End Plate for Kit No. 20725	$11.50	$ 9.50	$9.00	$8.50
21801	End Plate for Kit No. 20727	12.00	10.00	9.50	9.00
21802-1	Front Panel for Kit No. 20725	6.00	5.00	4.75	4.50
21802-2	Front Panel for Kit No. 20727	6.60	5.50	5.20	4.95

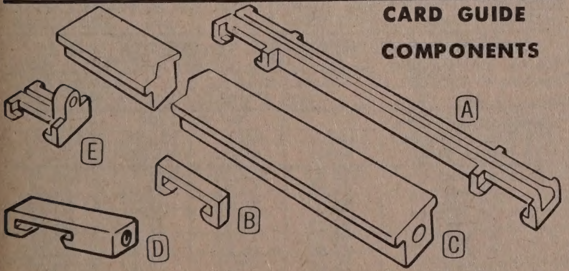
CARD-MATE II CIRCUIT CARD AND CONNECTOR MOUNTING DRAWER KIT



Contains all parts necessary for a completely integrated circuit card support system. Multi-slotted side plates adapt easily to different sized cards. Independent connector mounting brackets hold any size or type of connector, inline or offset. Precision molded nylon and rugged aluminum parts. Adjustable card rows fit almost any size card. Card capacity, 2 rows (card width, 7 3/4″ max.) 54 cards maximum; 1 row (card width 16 3/4″ max.) total 27 cards maximum. Maximum depth of cards, 7 1/2″. Card spacing is variable in 1/8″ increments from .500″ minimum. Standard RETMA size, 19″ rack mounting, 8 3/4″ panel x 18 1/16″ deep. Complete with connector mounts.

Scanbe No.	Card Thickness	Card Positions	Rows	Net Each, Lots of		
				1-4	5-9	10-24
20751	1/16″	54	2	$87.50	$79.50	$75.00
20752	3/32″	54	2	87.50	79.50	75.00

CARD GUIDE COMPONENTS



Standard card mounting components constructed of injection molded, vibration and shock dampening nylon. Exclusive connector mounting provision insures precise card/connector alignment. Sets can be easily assembled and spaced at any increment for constant or variable card spacing. Adaptable to most card sizes and configurations.

CARD GUIDE COMPONENTS (CONT'D)

CARD GUIDES (FIG. A)

Scanbe No.	Overall Lgth.	Scanbe No.	Overall Lgth.	Net Ea., 1-99	Net per 100		
					100-249	250-499	500-999
T-309-28	2.750″	T-309-48	4.750″	$0.15	$13.50	$12.00	$10.50
T-309-29	2.940″	T-309-51	5.125″	.15	13.50	12.00	10.50
T-309-34	3.437″	T-309-60	6.000″	.15	13.50	12.00	10.50
T-309-39	3.875″	T-309-65	6.500″	.15	13.50	12.00	10.50
T-309-42	4.187″	T-309-70	7.000″	.15	13.50	12.00	10.50
T-309-43	4.300″	T-309-75	7.500″	.15	13.50	12.00	10.50

CARD GUIDE SPACERS FOR SINGLE ROW OF CARDS TO MATE WITH T-901, T-902, T-903 MTG. BARS (FIG. B)

Scanbe No.	Spacer Width	Card Spacing	Net Each, 1-99	Net per 100		
				100-249	250-499	500-999
T-101-125	0.125″	0.625″	$0.10	$7.65	$7.20	$6.30
T-101-152	0.152″	0.650″	.10	7.65	7.20	6.30
T-101-173	0.173″	0.673″	.10	7.65	7.20	6.30
T-101-200	0.200″	0.700″	.10	7.65	7.20	6.30
T-101-250	0.250″	0.750″	.10	7.65	7.20	6.30
T-101-300	0.300″	0.800″	.10	7.65	7.20	6.30
T-101-375	0.375″	0.875″	.125	9.35	8.80	7.70
T-101-500	0.500″	1.000″	.125	9.35	8.80	7.70
T-101-750	0.750″	1.250″	.125	9.35	8.80	7.70
T-101-1000	1.000″	1.500″	.125	9.35	8.80	7.70

CARD GUIDE MOUNTING BARS (FIG. C)

Aluminum alloy, 17″ long, finished mounting bars for files mounting in 19″ racks. Also unfinished 24″ and 36″ long mounting bars, plated only, and untapped.

Scanbe No.	Mounting Bar Description	Net Each, Lots of			
		1-4	5-9	10-24	25-49
T-901, T-902, T-903, T-904	17″, Finished	$2.00	$1.70	$1.50	$1.40
XT-901, XT-902, XT-903, XT-904	24″ or 36″, Unfinished*	1.25 1.88	1.10 1.65	1.00 1.50	.90 1.35

*Specify 24″ or 36″ length.

SPACER STOP (FIG. D)

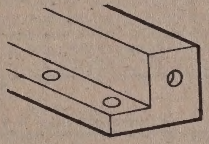
Mounted at a predetermined position on mounting bar where card guides are not run full length of mounting bars. Has aluminum collar, set screw.
Scanbe No. T-910—Net Ea., Lots of 1–9 . **$0.35**; 10–49 . **$0.30**

CONNECTOR MOUNTING FEET (FIG. E)

Nylon connector mounting feet with 4-40 mtg. screw insert. For Mounting Bar Types T-901, T-902, T-903. Height, to center of insert hole, A-305-A, .395″; A-305-B, .457″; A-305-C, .310″.

Scanbe No.	Net Each, 1-99	Net per 100		
		100-249	250-499	500-999
A-305-A, A-305-B, A-305-C	$0.23	$20.70	$18.40	$16.20

CONNECTOR MOUNTING BAR



Aluminum, 17″ long connector mounting bar. Drilled and tapped for 4-40 connector mounting screw. Has 34 holes on 1/2″ centers. For use with card guide component assemblies. Finish, conversion coat.
Scanbe No. 26480—Net Each, Lots of 1–4 .... **$5.60**
Lots of: 5–9 ..... **$5.25**; 10–24 ..... **$4.95**; 25–49 ..... **4.65**

SEMI-FINISHED END PLATES FOR CARD FILE

Flange notched for standard RETMA mounting. Requires drilling for card guide mounting bars.

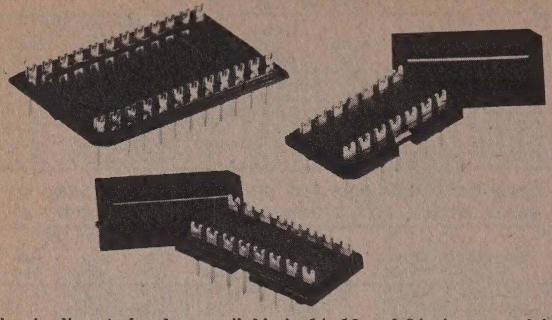
Scanbe No.	Size		Net per Pair, Lots of		
	Width	Height	4-10	12-24	26-48
26982-1	7″	5 7/32″	$3.00	$2.70	$2.55
26982-2	9″	7 31/32″	4.75	4.25	4.00
26982-3	11″	8 23/32″	5.25	4.72	4.55

SPECIAL SINGLE CARD GUIDE

For chassis or plate mounting. Has 3″ card guide slots. Made of rugged molded plastic. Provides stable card retention.
Scanbe No. 23176—Net Each, Lots of 2–4 . . **$0.90**; 6–8 . . **$0.83**
Lots of: 10–24 .... **$0.79**; 26–48 .... **$0.75**; 50–100 .... **.71**

SCANBE ELECTRONIC PACKAGING HARDWARE

DISCRETE HEADERS



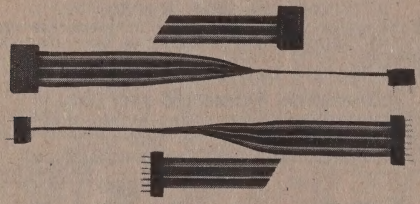
Plug-in discrete headers available in 14, 16 and 24 pin or special configurations. Headers plug into Scanbe's Series ME-2 sockets, or any standard socket. Body constructed of glass filled nylon; color, black. Contacts are full spring temper Grade A phosphor bronze with high ductility for reshaping ability. Plating is .00020″ nickel, QQ-N-290 and 50 μ inches gold per MIL-G-45204, Type II, Class 1. Optional covers available.

Scanbe No.	No. Pin Contacts	Body Size		Net Each, Lots of			
		Width	Depth	1-9	10-49	50-99	100-499
ME-2-14 Pin 11018-14-3	14	.795″	.495″	**$0.90**	**$0.70**	**$0.58**	**$0.50**
ME-2-16 Pin 11018-16-3	16	.895″	.495″	**.97**	**.76**	**.64**	**.55**
ME-2-24 Pin 11018-24-6	24	1.295″	.700″	**1.95**	**1.60**	**1.37**	**1.22**

COVERS FOR DISCRETE HEADERS

14/16 Pin Discrete Header Cover—Net Each	**$0.12**
24 Pin Discrete Header Cover—Net Each	**.15**

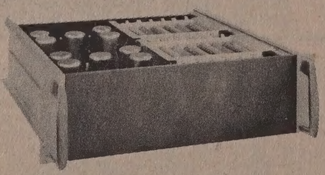
INTERCONNECT CABLES



Low-cost flat cable interconnect assemblies for quick, positive connection of one DIP socket to another. Two styles available. Top entry Style D has a molded-on plug on both ends. Side entry Style S has molded-on plug on one end only with cable stripped at other end. Body construction, glass filled nylon. Standard color, black. Contacts are full spring temper Grade A phosphor bronze with high ductility for reshaping ability. Plating is .0020″ nickel, QQ-N-290, and 50 μ inches gold per MIL-G-45204 Type II, Class 1. Standard length, 12″, Lengths up to 48″ available.

Scanbe No.	Description	Net Each, Lots of			
		1-9	10-49	50-99	100-499
ME-2-14 Pin Double					
11107-D-12-TE	Top Entry	**$4.25**	**$3.95**	**$3.65**	**$3.35**
11107-D-12-SE	Side Entry	**4.25**	**3.95**	**3.65**	**3.35**
ME-2-14 Pin Single					
11107-S-12-TE	Top Entry	**3.25**	**2.95**	**2.65**	**2.35**
11107-S-12-SE	Side Entry	**3.25**	**2.95**	**2.65**	**2.35**
ME-2-16 Pin Double					
11108-D-12-TE	Top Entry	**4.31**	**4.01**	**3.71**	**3.40**
11108-D-12-SE	Side Entry	**4.31**	**4.01**	**3.71**	**3.40**
ME-2-16 Pin Single					
11108-S-12-TE	Top Entry	**3.31**	**3.01**	**2.71**	**2.40**
11108-S-12-SE	Side Entry	**3.31**	**3.01**	**2.71**	**2.40**

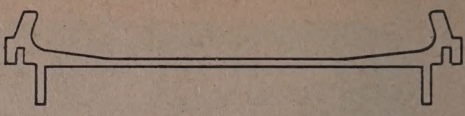
HORIZONTAL EQUIPMENT DRAWER KIT



Easily assembled kit has sturdy, extruded aluminum sides. Standard RETMA size: 7½″ or 5¼″ panel height, 18″ or 20″ depth. Complete with handles.

Scanbe No.	Size		Net Each, Lots of		
	Depth	Panel Height	1-4	5-9	10-24
25591-01	18″	5¼″	**$90.00**	**$75.00**	**$71.25**
25591-02	20″	5¼″	**96.00**	**80.00**	**76.00**
25591-03	Extra Panel, 7½″ high		**2.10**	....	....

EXTRUSIONS (2-FT. LENGTH ONLY)



High strength aluminum alloy extrusions offer a wide number of standard applications. Supplied in three basic configurations—side panel, corner trim, and lower side corner.

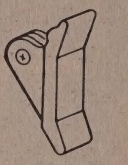
Scanbe No.	Description	Height	Overall Width	Width at Ctr.	Net Each
00082-1	Side Panel	5.210″	1¹⁄₁₆″	.078″	**$ 9.00**
00082-2	Side Panel	6.960″	1¹⁄₁₆″	.125″	**12.00**
00082-3	Side Panel	8.710″	1¹⁄₁₆″	.125″	**13.80**
00245	Corner Trim	....	⅞″	....	**3.00**
00246	Lower Side Corner	....	⅞″	....	**3.00**

SNAP-IN CIRCUIT CARD GUIDES

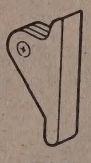
One piece molded nylon unit designed to mount on pre-drilled ¹⁄₁₆″ or ³⁄₃₂″ metal plates. Guides may be staggered for multi-row applications. Snap-in guides provide low cost, positive card mounting system, extremely rugged and functional. White nylon construction per MIL-M-20693, Type 4A. Size, .312″ w. x .297″ h. Lengths shown in table below.

Scanbe No.	Overall Length	Net Each, Lots of					
		1-99	100-249	250-499	500-999	1000-4999	5000-9999
23071-1	2½″	**$0.15**	**$0.14**	**$0.13**	**$0.12**	**$0.10**	**$0.09**
23071-2	3″	**.15**	**.14**	**.13**	**.12**	**.10**	**.09**
23071-3	4″	**.15**	**.14**	**.13**	**.12**	**.10**	**.09**
23071-4	4½″	**.17**	**.15**	**.14**	**.13**	**.11**	**.10**
23071-5	6″	**.17**	**.15**	**.14**	**.13**	**.11**	**.10**
23071-6	6½″	**.17**	**.15**	**.14**	**.13**	**.11**	**.10**

CIRCUIT CARD EJECTORS FOR EASY CARD REMOVAL



S-200



S-203

Unique circuit card ejectors can be used with most circuit card support systems. Attach to cards of either ¹⁄₁₆″ or ³⁄₃₂″ thickness. Ejector operates by lever action against the card guide which disengages the card from its connector. Provides quick and convenient removal of any individual card from the file, and adds system reliability by preventing damage to card components and connectors from improper card removal. Individual handle eliminates need for special extraction tools. Ejectors attach easily to cards with a mounting pin furnished with the ejector. Two ejectors, one on each side, are recommended for cards wider than their length to avoid bending stresses on connectors and guides.

Scanbe No.	Size		Height	For Card Thickness	Scanbe No.	For Card Thickness
	Width	Depth*				
S-200	.375″	.500″	1.125″	.062″	**S-200-100**	.093″
S-202	.250″	.500″	1.125″	.062″	**S-202-100**	.093″
S-203	.250″	.375″	1.093″	.062″	**S-203-100**	.093″
S-205	.312″	.500″	1.125″	.062″	**S-205-100**	.093″
S-208	.250″	.500″	1.062″	.062″	**S-208-100**	.093″

*Measured from center of mounting hole to extreme end.

CIRCUIT CARD EJECTORS PRICE SCHEDULE

Net Each, Lots of				Net Each, per 100			
1-49	50-99	100-499	500-999	1000-4999	5000-9999	10,000-19,999	20,000-24,999
$0.35	**$0.30**	**$0.25**	**$0.23**	**$21.00**	**$19.00**	**$17.00**	**$15.00**

POWER AND GROUND SOLDER CLIPS

Economical and easily assembled clips produced from Berylco® plated bright tin. To attach .025″ sq. pins to any plated circuitry.

Scanbe No.	Description	Size		Net per 100		
		Width	Depth	100-999	1000-4999	5000-9999
10612-01	Ground Clip	.163″	.075″	**$5.00**	**$4.25**	**$3.75**
10612-02	Power Clip	.273″	.075″	**5.00**	**4.25**	**3.75**

PRE-CUT AND STRIPPED 30-GAUGE WIRE

Pre-cut and stripped, 30 gauge, Blue Kynar• wire. Available in lengths, 4″ through 15″. Lengths supplied in 1″ increments only.

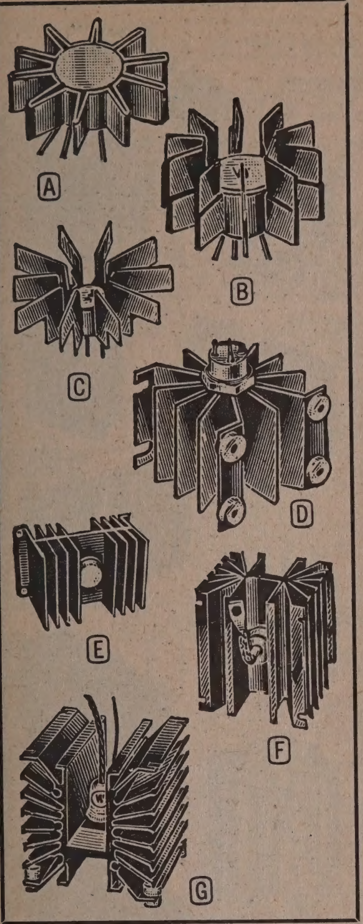
•Reg. Pennsalt Chemical trademark.

Scanbe (Description) Pre-Cut, Stripped, 30-Gauge Wire*	Net per 1000			
	1000-4999	5000-9999	10,000-24,999	25,000-49,999
4″ long	**$19.00**	**$14.25**	**$11.87**	**$10.68**
5″ long	**19.85**	**15.20**	**12.82**	**11.65**
6″ long	**21.82**	**17.00**	**14.72**	**13.53**
7″ long	**22.80**	**18.05**	**15.67**	**14.48**
8″ long	**24.70**	**19.85**	**17.57**	**16.83**
9″ long	**26.60**	**21.85**	**19.47**	**18.28**
10″ long	**28.50**	**23.75**	**21.37**	**20.66**
11″ long	**30.40**	**25.65**	**23.27**	**22.08**
12″ long	**32.30**	**27.55**	**25.17**	**23.98**
13″ long	**34.20**	**29.45**	**27.57**	**25.88**
14″ long	**36.10**	**31.35**	**28.97**	**27.78**
15″ long	**38.00**	**33.75**	**30.87**	**29.68**

*Order per description and desired length.

2048-73A

WAKEFIELD ENGINEERING INC. Semiconductor Coolers



THERMAL JOINT COMPOUND

Used between semiconductor and heat-sink; or for thermoelectric modules.

Wake-field No.	Size	Net Each, Lots of 1-9	10-24	25-49
120-S	4 gm	$ 0.37*	$ 0.30*	$0.25*
120-2	2 oz.	1.77	1.67	1.46
120-5	5 oz.	2.90	2.69	2.43
120-8	8 oz.	4.75	4.45	3.92
120-80	5 lb.	22.35	21.85	....

*Net Each, Lots 1-99, 100-499, 500-999.

VERTICAL MOUNTING ADAPTERS

Meet MIL-STD-202. Cond. B for vibration. Two required per sink. For insulation, use Teflon insulator 103, below.

No. 111—For 401 or 403.
Net Each, 1–99...**$0.21;** 100–499...**$0.17**
No. 113—For 421 or 423.
Net Each, 1–99...**$0.30;** 100–499...**$0.23**

TEFLON® INSULATORS

Type 105 accepts #10 mtg. hardware; all others, 6-32. ®DuPont TM

Type No.	For Sink Model Number	No. Req'd	Hypot kV*
101	501 502, 503, 504, 505	3 4	0.5
103	301 401	2 3	1.5
	302, 303, 403, 413, 421, 423, 431, 433, 621, 623, 641	4	1.5
105	441, 451, 465, 476, 486, 489	4	5.0
107	Same as 103		5.0

*At 60 Hz.

Wakefield Number	Net per Pkg. of 100 1-9	10-49	50-99
101	$13.70	$12.80	$12.25
103	5.25	5.00	4.70
105	21.00	19.60	18.65
107	21.00	19.60	18.65

SERIES 200 FEATHERWEIGHT DISSIPATORS

Unique fin design permits horizontal or vertical orientation with excellent natural convection performance in either position. In forced convection applications, the axis of the semiconductor may be oriented either perpendicular or parallel to the direction of air flow. Max. contact thermal impedance for the semiconductor case to the dissipator I.D. is 5° C/W for 201, 202, 203 and 222, 3° C/W for 204, 205, 207, 209 and 224, 2° C/W for 211, 213 and 215. Delta-T No. 120 thermal joint compound will reduce impedance by a factor of 8. Beryllium copper per MIL-C-81021 with black ebonol C finish per MIL-F-495; also available with no finish, prices on request.

Wakefield Model 160 Installation Tool—For 201, 202, 203, 204, 205, 207, 208, 209, 222 and 224. Net Each..**$1.50**

Wakefield Model 161 Installation Tool—For 211, 213 and 215. Net Each...... **1.50**

Wakefield Number	Fig.	Fits Case Dia., In.	Fits JEDEC Case Styles	Size, Inches I.D.	O.D.	H.	Net per Pkg. of 100 1-4	5-9	10-49
201-CB*	A	.161/.240	TO-18, 24, 28, 40, 44	.150	.640	.187	$17.28	$15.65	$14.51
202-CB	A			.150	.490	.187	15.20	13.79	12.89
203-CB*	B			.150	.640	.375	24.77	22.40	20.83
206-CB*	B			.165	.510	.375	24.77	22.40	20.83
204-CB*	A	.275/.370	TO-5, 9, 11, 12, 16, 26, 29, 33, 39, 42, 43, 45	.255	.550	.187	15.20	13.79	12.89
205-CB*	A			.255	.720	.187	17.28	15.65	14.51
207-CB*	B			.255	.720	.375	24.77	22.40	20.83
208-CB*	B			.280	.580	.375	24.77	22.40	20.83
209-CB*	C			.255	1.280	.720	27.30	24.99	23.19
211-CB*	A	.440/.544	TO-8, 38, 48,	.420	.830	.187	24.77	22.40	20.83
213-CB*	B			.420	.830	.375	26.75	24.21	22.80
215-CB*	C			.420	1.400	.830	26.75	24.21	22.80
222-CB	A	.165/.240	2—TO-18, 24, 28	.150	.640	.380	24.09	21.84	20.33
224-CB	A	.275/.370	2—TO-5, 9, 11, 12, 16, 29, 33, 39, 42, 43, 45	.255	.720	.440	27.30	24.99	23.19

*Also available in aluminum alloy 6061T6 with or without black anodize finish; prices on request.

SERIES 300 SEMICONDUCTOR COOLERS (FIG. D)

Accommodate stud-mounted, press-fitted rectifiers and transistors up to 1 1/16″ hex case. Semiconductor mounting surface and one mounting foot are free of anodize to assure excellent thermal and electrical performance. Ideal for stacking arrangement; electrical isolation provided by Type 103 insulators or Type 104 expansion nuts (not supplied). Temperature Rise at 23 Watts: Type 301, 100° C; 302, 72° C; 303, 52° C. Full curves on request. Aluminum alloy 6063-T5 per QQ-A-200; black anodize finish per MIL-A-8625 Type II. Size 2″ sq. x ¾″ h., 301; 1½″ h., 302 and 3″ h., 303. Part No. letter suffix indicates mounting hole type; see *Ordering Information on following page.

Wakefield Number*	Net Each, Lots of 1-49	50-99	100-249	Wakefield Number*	Net Each, Lots of 1-49	50-99	100-249
301K	$1.13	$0.93	$0.77	302R	$1.81	$1.45	$1.21
301L, M, N	1.36	1.19	.98	303K	1.59	1.26	1.06
301R	1.36	1.19	.98	303L, M, N†	2.10	1.70	1.41
302K	1.36	1.10	.92	303R	2.10	1.70	1.41
302L, M, N†	1.81	1.45	1.21				

*For square slots to accept insulators add suffix **S** to number and **$0.10** per piece any quantity. †Add **$0.12** per piece for LL, MM, or NN (tapped both ends) any quantity.

SERIES 400 NATURAL CONVECTION HEAT SINKS (FIG. E)

Aluminum alloy 6063T5 per QQ-A-200; black anodize finish per MIL-A-8625, Type II. All Series 400 are available with square slots for mounting Type 104 or 106 insulators. To order, add suffix **S** to number and **$0.10**/piece any quantity. Part No. letter suffix indicates mounting hole type; see *Ordering Information on following page.

401: Unexcelled for natural convection where space is critical. Thermal resistance below 0.5° C/W at moderate air flow. Size, 1.5″ x 4.812″. **403:** Thermal resistance 1.8° C/W at medium power levels; adequate cooling in all but the most stringent applications. Size, 3.0″ x 4.812″.

Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	250-499	Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	250-499
401-A, K	$1.16	$0.93	$0.77	$0.68	403-A, K	$1.70	$1.36	$1.13	$0.99
401-(*)	1.38	1.10	.92	.80	403-(*)	1.92	1.53	1.26	1.12

423: Thermal resistance 0.8° C/W at higher power levels. Designed for applications involving larger Triacs, SCR's and diodes; may be mounted vertically or horizontally. Size, 5.5″ x 4.812″.

423-A, K	$3.92	$3.12	$2.61	$2.32	423-(*)	$4.15	$3.29	$2.78	$2.44

*All other standard configurations; see *Ordering Information on following page.

413: Thermal resistance 1.4° C/W natural convection; 0.3° C/W moderate air flow. Size, 3.0″ x 4.75″. **421:** Same except 1.3° C/W natural convection.

Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	250-499	Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	250-499
413-A, K	$2.67	$2.16	$1.81	$1.59	421-A, K	$2.44	$1.95	$1.62	$1.43
413-(*)	3.12	2.55	2.16	1.87	421-(*)	2.67	2.12	1.77	1.56

441 (Fig. F): Designed for vertical mounting; taking better advantage of natural convection. Thermal resistance 0.55° C/W at high power levels; 0.18° C/W with moderate forced convection. Size, 4.75″ x 5.5″.

441-K	$6.48	$5.19	$4.32	$3.80	441-(*)	$6.93	$5.53	$4.62	$4.29

*All other standard configurations; see *Ordering Information on following page.

465 (Fig. G): Designed for 1 1/16″ hex high power rectifiers and SCR's. Provides maximum cooling for minimum space requirements. Size, 4″ sq. **476 (Fig. G):** For 1¼″ hex SCR's and rectifiers. Optimum fin efficiency with unique radial fin designs. Size, 5″ sq. **486 and 489 (Fig. G):** For mounting 1¾″ hex SCR's; utilize the decreased conduction path length between semiconductors and fin area for maximum cooling of these large devices. Size, 6″ x 6.25″, except 489, 9″ x 6.25″.

Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	Wakefield Number	Net Each, Lots of 1-49	50-99	100-249
465-K	$4.77	$4.20	$3.97	476-J, W	$ 7.21	$ 6.21	$6.02
465-J	5.34	4.71	4.48	486-K	10.51	9.26	....
476-K	6.53	5.73	5.40	489-K	15.17	13.29	....

T.M. **WAKEFIELD ENGINEERING INC.**

Semiconductor Coolers

SERIES 490 KING SIZE HEAT SINKS (FIG. H)

Natural convection sinks for multi-cell high power rectifiers. Model 490-12.0, under natural convection conditions, will permit a case temperature rise of a 3½″ sq. rectifier of only 110° C at 600 W dissipation. Full curves for all types available on request. Aluminum alloy 6063T5 per QQ-A-200; black anodize finish per MIL-A-8625 Type II except for the semiconductor mounting surface where the electrical stud and high current buswork connections are made. Four mounting lugs on each end with std. ⅜″ dia. bolts, nuts and washers; or, use Type 109 mounting brackets (glass fiber reinforced plastic angles) for wall mounting or insulating (two required per sink), not supplied. Size, 6.75″ w. x 9.25″ d. x 3.5″ h., 490-3.5; 6″ h., 490-6.0; 12″ h., 490-12.0. All have 3½″ semiconductor mounting area. For square slots add **$0.10**/piece. Part No. letter suffix indicates mounting hole type; see *Ordering Information below.

Wakefield Number	Net Each, Lots of 1-49	Net Each, Lots of 50-99	Wakefield Number	Net Each, Lots of 1-49	Net Each, Lots of 50-99
490-3.5-K	$10.11	$ 8.87	490-6.0-W, Y, Z	$15.24	$13.31
490-3.5-W, Y, Z	9.72	8.52	490-12.0-K	27.28	23.99
490-6.0-K	15.92	13.92	490-12.0-W, Y, Z	26.83	23.53

Wakefield No. 109 Mounting Bracket—Used with Series 490 heat sinks. Insulation strength, 5000 volts. Size, 7.50″ w. x 1.5″ d. x 1.5″ h. Mtg. centers spaced 6″.
Net Each, Lots of: 1–99 . . . . **$1.52** 100–499 . . . . **$1.31**

SERIES 500 COPPERCOOL FORCED CONVECTION COOLERS

For critical designs requiring maximum performance under medium air pressure. Take semiconductors of any mounting style. Hose adapters and top covers available; prices on request. **501 (Fig. I):** Thermal resistance 0.5° C/watt at 32 CFM; 1¾″ w. x 2¼″ d. x 1¾″ h. **502:** Similar to (Fig. I) except has set of fins on each side of semiconductor. Thermal resistance 0.3° C/watt at 26 CFM; 3½″ w. x 1¾″ d. x 1¾″ h. **503:** Larger version of 502. Thermal resistance 0.3° C/watt at 15 CFM; 3½″ w. x 3½″ d. x 1¾″ h. **504 (Fig. J):** Thermal resistance 0.3° C/watt at 40 CFM; 1¾″ sq. x 1¾″ h. **505:** Same as 504, but fins extend full width of mounting surface. Thermal resistance 0.3° C/watt at 21 CFM; 1¾″ w. x 2″ d. x 1¾″ h. Base and fins are copper with black ebonol C finish. Part No. letter suffix indicates mounting hole type; see *Ordering Information below for other mounting types available—prices on request.

Wakefield Number	Net Each, Lots of 1-4	5-9	10-24	Wakefield Number	Net Each, Lots of 1-4	5-9	10-24
501-K	$ 8.33	$ 7.70	$ 7.03	504-K	$ 7.53	$6.90	$6.35
502-K	12.95	11.78	10.80	505-K	10.61	9.87	9.00
503-K	22.88	21.09	19.43				

SERIES 600 CIRCUIT BOARD COOLERS

Low profile, flat surface coolers for printed circuit and externally mounted uses. Available for TO-8 and other transistor case styles and sizes to 1⅓″ O.D. **601 (Fig. K):** For TO-8 transistors; temp. rise 89° C at 10 watts; 1.25″ w. x 2.00″ d. x 0.56″ h. **603 (Fig. K):** Same, but temp. rise 83° C at 12 watts; 2.00″ w. x 2.00″ d. x 0.56″ h. **621 (Fig. L):** For semis to 1.335″ O.D.; temp. rise, 84° C at 18 watts; 1.50″ w. x 4.75″ d. x 0.46″ h. **623 (Fig. L):** Same, but temp. rise, 72° C at 23 watts; 3.00″ w. x 4.75″ d. x 0.46″ h. **641 (Fig. L):** For semis to 1.335″ O.D.; temp. rise, 50° C at 23 watts; 3″ w. x 4.12″ d. x 1″ h. Aluminum alloy with black anodize finish. For square slots to accept Type 104 insulators, add suffix **S** to number and **$0.10**/piece. Part No. letter suffix indicates mounting hole type; see *Ordering Information below for other mounting types available—prices on request.

Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999	Wakefield Number	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999
601-K	$0.85	$0.68	$0.57	$0.51	$0.45	623-A, K	$1.53	$1.23	$1.06	$0.92	$0.82
603-K	.96	.80	.68	.57	.51	641-A, K	1.59	1.27	1.07	.94	.86
621-A, K	1.03	.82	.70	.62	.55						

SERIES 680 CIRCUIT BOARD HEAT SINKS (FIG. M)

Optimum natural convection cooling per unit volume above the circuit board. Free circulation of air from any direction. High thermal conductivity aluminum alloy, black anodized. Accepts all popular transistors. **Temp. Rise:** 680-.5, 90° C at 10 watts; 680-.75, 90° C at 13 watts; 680-1.0, 90° C at 15 watts; 680-1.25, 100° C at 21 watts. **Size:** Base 1.81″ sq. with mtg. centers 1.50″, all units. Transistor mtg. area 1.31″ dia., min. all units. Height, .50″, 680-.5; .75″, 680-.75; 1″, 680-1.0; 1.25″, 680-1.25. Part No. letter suffix indicates mounting hole type; see *Ordering Information below.

Wakefield Number	Net Each, Lots of 1-49	50-99	100-499	Wakefield Number	Net Each, Lots of 1-49	50-99	100-499
680-.5A, B, G1, K	$1.08	$1.03	$0.88	680-1.0A, B, G1, D	$1.22	$1.13	$0.98
680-.75A, B, G1, K	1.10	1.05	.90	680-1.25A, B, G1, K	1.27	1.19	1.01

★ORDERING INFORMATION

SUFFIX LETTERS FOR MOUNTING TYPES

Parts as listed are standard; deviations are special and will require tooling and set-up charges.

Wakefield No.	Standard Suffix	Wakefield No.	Standard Suffix
301*, 302, 303	K, L*, M*, N*, R	486, 489	K
310	K, J, W	490	K, W, Y, Z
401, 403, 413, 421	A, B	501, 502, 503	A, B
423	A, B	504, 505	K, L, M, N, P, Q, X
431, 433	J, K	601, 603	E, F, K
441	G, K	621, 623, 641	A, K, V
465	J, K	680	A, B, K, G1
476	K, W		

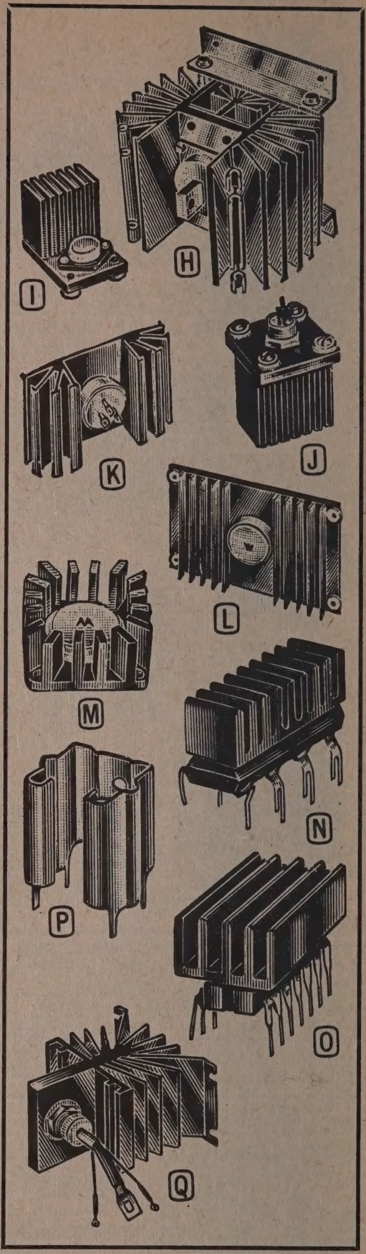
*301 available single-end L, M and N only.

Final Suffix S: When ordering heat sinks to accommodate Types 104 or 106 insulators, the suffix **S** is added to the heat sink number. Wider, square bottomed slots required for these two insulators are positioned further from the ends of the sinks.

MOUNTING SPECIFICATIONS

Locations of mounting groups on coolers to be within 1/32″ of true position. Hole diameters **E** through **Y** not free of anodize on series 500; **R** (ream) free of anodize.

Suffix	Mtg. Hole	Suffix	Mtg. Hole	Suffix	Mtg. Hole
A	TO-3	**J**	0.520″	**V**	TO-3
B	TO-36	**K**	Blank	**W**	0.765″
E	0.200″	**L**	8-32 x ½″	**X**	5/16-24
F	0.270″	**M**	10–32 x ⅝″	**Y**	1.030″
G	0.330″	**N**	¼-28 x ⅝″	**Z**	0.765″
H	0.390″	**R**	0.4975″	**G1, H1**	TO-66



HEAT SINKS

Heat sinks for DIP and PC boards. **Type 650:** Bonded with Delta Bond epoxy for DIP. Size, .250″ w. x .744″ l. x .240″ h. **Type 651:** Heat sink for DIP enables user to select extruded fins perpendicular to Type 650 fins to take advantage of air flow direction. Size, .415″ w. x .75″ l. x 24″ h. **Type 295:** Solderable heat sink for PC boards. Tinned aluminum legs (.04″ w. x .03″ thick) plug-in .050″ PC board holes for automatic soldering. **Type 310:** Extruded aluminum heat sink to provide installation in NEMA cabinets. Available in 3.0″, 5.5″ and 11.5″ lengths with 11.5″ size for mounting 1, 2, or 3 SCR's.

Wakefield Type	Fig.	Min. Order	Net, per 100: 100-900	Net, per 100: 1000-2400
650-B*	N	100	$22.40	$19.10
651-B*	O	100	23.30	19.80
295-1	P	100	14.06	11.97
310-3.0K	Q	1	4.51†	3.84‡

*Black anodize; change B to G for gold irridite; prices on request. Net Each: †1–24. ‡25–49.

NATIONAL® READOUT AND INDUSTRIAL TUBES

READOUT TUBES

Other combinations of characters available on special order.

0.3″ CHARACTER SIZE

National Type	Socket Code*	Description	Net, 1-99*
NL-4022	A	Standard life (±)	$19.00
NL-4026	A	Standard life, low voltage (±)	33.00
NL-4031	A	Long life (±)	19.00
NL-4998	H	Min. rectangular, long life (0–9)	21.35
NL-7009	A	Standard life (0–9)	19.00
NL-7009A†	A	Standard life (0–9)	20.90
NL-7977/4032	A	Long life (0–9)	19.00
NL-7977A†	A	Long life (0–9)	20.90
NL-8027	......	7 segment, RH decimal point	5.00
NL-8029	......	8 segment, RH dec. pt./LH comma	5.00
NL-8502/4021	A	Standard life, low voltage (0–9)	33.00

0.34″ CHARACTER SIZE

National Number	Socket Code*	Description	Net, 1-99*
NL-DG10E	......	8 segment, RH decimal point	$5.00
NL-DG10K	......	7 segment, RH decimal point	5.00

0.44″ CHARACTER SIZE

NL-1245	......	7 segment, RH decimal point	$5.00

0.5″ CHARACTER SIZE

NL-DG12E	......	8 segment, RH dec. pt./LH comma	$5.00
NL-DG12J	......	Inverted, 7 segment, RH dec. pt.	5.00
NL-918/5560	......	Inverted, long life, tipless (0–9)	17.75
NL-941‡	......	Long life (±)	8.00
NL-951‡	......	Long life (±)	8.00
NL-1222‡-	......	Long life, RH dec. pt. (0–9)	4.95
NL-5750	J	Long life, RH/LH dec. pts. (0–9)	6.75§
NL-5853‡	J	Long life (0–9)	6.75§
NL-5866‡	J	Long life (±)	6.75§
NL-5870‡	J	Long life (0–9)	6.75§

0.6″ CHARACTER SIZE

NL-803	D	Long life (0–9)	$ 9.00
NL-809	B	Long life rect., LH dec. pt. (0–9)	17.35
NL-810	B	High contrast NL-8422/5991	17.35
NL-811	D	Long life (±)	9.00
NL-812	D	Long life, LH dec. pt. (0–9)	9.75
NL-826	B	High contrast NL-809	18.10
NL-836	B	Fine screen NL-8422/5991	17.35
NL-840/8754	D	Long life (0–9)	8.00
NL-841	D	Long life, LH dec. pt. (0–9)	8.40
NL-842	D	Long life, RH dec. pt. (0–9)	8.40
NL-843	D	Long life (±)	8.00
NL-844	D	High contrast NL-840	8.00
NL-845	D	High contrast NL-841	8.40
NL-846	D	High contrast NL-842	8.40
NL-847	D	High contrast NL-843	8.00
NL-848	G	Long life, RH/LH dec. pts. (0–9)	8.75
NL-874	D	Inverted NL-840	8.40
NL-875	D	Inverted, long life, LH decimal point (0–9)	8.75
NL-876	D	NL-875 except RH decimal point	8.75
NL-900	D	Long life, tipless (0–9)	9.00
NL-901	D	NL-900 with LH decimal point	9.75
NL-902	D	NL-900 with RH decimal point	9.75
NL-903	D	Long life, tipless (±)	9.00
NL-904	D	Inverted, lg. life, tipless (0–9)	9.50
NL-905	D	NL-904 with LH decimal point	10.25
NL-906	D	NL-904 with RH decimal point	10.25
NL-907	G	NL-904 w/RH/LH decimal points	10.25
NL-908	G	NL-900 w/RH/LH decimal points	9.75
NL-5016	C	Standard life (±)	11.00
NL-5032	C	Long life (±)	15.75
NL-5440	K	Long life (0–9)	8.00
NL-5440A	K	Long life, tipless (0–9)	8.40
NL-5441	K	Long life, LH/RH dec. pts. (0–9)	8.40
NL-5441A	K	NL-5441, tipless	8.75
NL-5442	K	Long life (±)	8.00
NL-5442A	K	Long life, tipless (±)	8.40
NL-5961	B	Non-mercury rectangular (0–9)	32.00
NL-5971	B	Long life, alpha numeric	30.00
NL-5992	B	Long life, rectangular (±)	15.75
NL-6844A	C	Standard life (0–9)	11.00
NL-8037/5031	C	Long life (0–9)	15.75
NL-8421/5092	C	Long life, wide angle (0–9)	15.75
NL-8422/5991	B	Long life, rectangular (0–9)	15.75
NL-50911	C	Long life, wide angle (±)	15.75

0.8″ CHARACTER SIZE

NL-807	D	Long life (0–9)	$11.00
NL-821	D	Long life, LH decimal point (0–9)	11.50
NL-6012	C	Standard life (±)	14.50
NL-6034	C	Long life (±)	19.00
NL-7153	C	Standard life (0–9)	14.50
NL-8423/6091	C	Long life, wide angle (0–9)	19.00

1.375″ CHARACTER SIZE

NL-8091	E	Long life, wide angle (0–9)	$22.50

2.0″ CHARACTER SIZE

NL-7037	E	Long life, side view (0–9)	$26.00
NL-7094	E	Long life, wide angle (0–9)	45.00

Tube fits sockets with same code; above right. †Contain radioactive gas for improved dark ionization. All other types available with radioactive gas at 10% additional charge. ‡S and ST versions available at same price. §Net Each, Lots of 1–24.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

READOUT TUBE SOCKETS

MIL spec material except as otherwise noted.

National Type	Skt Code	Net, 1-24*	National Type	Skt Code	Net, 1-24*	National Type	Skt Code	Net, 1-24*
RTS-1	C	$0.90	RTS-13	C	$0.90	RTS-33	H	$1.50
RTS-2*	C	.75	RTS-14*	D	.40	RTS-35	D	1.00
RTS-3	A	1.00	RTS-15*	D†	.40	RTS-44	J	.54
RTS-4	B	.90	RTS-16	D, G	1.00	RTS-47	D, G	.80
RTS-5	E	1.25	RTS-17*	D, G	.80	RTS-48*	D, G	.40
RTS-6*	C	.85	RTS-18*	D, G	.40	RTS-49	D	.80
RTS-7H	F	1.25	RTS-19	D	1.00	RTS-50*	D	.40
RTS-7V	F	1.25	RTS-20*	D	.80	RTS-54*	K	.90
RTS-8	C	.90	RTS-23	G	1.00	RTS-55*	K	.90
RTS-10	B	.90	RTS-24*	G	.80	RTS-56*	K	.90
RTS-11	D	.50	RTS-32	H	1.50	RTS-57*	K	.90

*Commercial grade material. †For use with tubes without decimal.

POWER TUBES

Ignitron water connectors and thermostat kits; lug base tube sockets for rectifiers and thyratrons also available on request.

THYRATRONS

National No.	Net Each
FG-105	$ 59.00
NL-C3J/AL	17.05
NL-C3J/AL-Ne*	21.40
NL-C3J/L	16.35
NL-3C23	11.98
NL-C6H-1	29.10
NL-C6H-2, -3	30.25
NL-C6J	29.80
NL-C6J/K	30.60
NL-C6J/K-Ne*	36.20
NL-C6J/KP	33.25
NL-C6J/L	30.90
NL-C6J/P	31.50
NL-KY21A	37.10
NL-323B, NL-393A	14.00
NL-632B	35.50
NL-677	68.00
NL-678	52.00
NL-710/6011	13.15
NL-710A	19.35
NL-710L/7518	15.05
NL-714	11.55
NL-716	12.90
NL-718	92.80
NL-732	168.85
NL-734/5544	27.00
NL-734L	29.00
NL-740/6856	24.25
NL-740L/7022	25.00
NL-740P/6857	25.00
NL-741	41.36
NL-760	29.80
NL-760L	30.90
NL-760P	31.50
NL-761	57.30
NL-770L	54.80
NL-770P	60.00
NL-778	51.15
NL-778L	51.70
NL-778P	54.45
NL-780	108.50
NL-2050A	2.50
NL-5557/FG-17/715	9.50
NL-5559/FG57	23.00
NL-5560/FG95	33.80
NL-5563A	54.90
NL-5632/C3J	14.25
NL-5665/C16J	52.50
NL-5684/C3J/A	14.65
NL-5684-Ne*	18.55
NL-5684A-Ne*	19.95
NL-6014/C1K	12.90
NL-6989/C6J/KL	31.75
NL-6989-Ne*	37.30
NL-7556A-Ne*	21.65

IGNITRONS

NL-1001	$ 60.00
NL-1005A	107.00
NL-1009A	170.00
NL-1011A	71.00
NL-1012A	107.00
NL-1013A	300.00
NL-1014A	924.00
NL-1016A	170.00
NL-1022A	125.00
NL-1031	71.00
NL-1032	107.00
NL-1036	78.00
NL-1037	140.00
NL-1038	345.00
NL-1039	139.00
NL-1040	1075.00
NL-1042	120.00
NL-1051A	71.00
NL-1051AP	73.00
NL-1052A	107.00
NL-1052AP	110.00
NL-1053A	300.00

IGNITRONS (Continued)

National No.	Net Each
NL-1054A	$924.00
NL-1059A	345.00
NL-1061	71.00
NL-1061P	73.00
NL-1062	107.00
NL-1062P	110.00
NL-1063	300.00
NL-1064	953.00
NL-1066/7670	84.00
NL-1067	110.00
NL-1069	170.00
NL-1071	71.00
NL-1071P	73.00
NL-1072	107.00
NL-1072P	110.00
NL-1073	300.00
NL-1074	953.00
NL-1079	170.00
NL-1081	84.00
NL-1081P	86.00
NL-1082	119.15
NL-1082P	122.15
NL-1091	84.00
NL-1091P	86.00
NL-1092	119.15
NL-1092P	122.15
NL-5550	53.00
NL-5551A	71.00
NL-5551AP	73.00
NL-5552A	107.00
NL-5552AP	110.00
NL-5553B	265.00
NL-5553BL, BP	270.00
NL-5555, A	350.00
NL-6228	3700.00
NL-7171	65.00
NL-7669	71.00
NL-7669P	73.00
NL-7671	107.00
NL-7671P	110.00
NL-7673	265.00
NL-7673P	270.00
NL-7703, H	190.00

FULL-WAVE RECTIFIERS

NL-604	$16.55
NL-604L	18.05
NL-606	26.45
NL-606L	28.80

HALF-WAVE RECTIFIERS

NL-RX21A	$ 35.65
NL-575A	20.75
NL-610/7723	13.00
NL-615	11.50
NL-616	14.60
NL-617	17.00
NL-619	11.85
NL-623	16.70
NL-625	45.10
NL-627	46.65
NL-635/7019	15.75
NL-635L/7020	16.50
NL-635P/6930	18.15
NL-643	16.35
NL-649/5834	14.30
NL-653/5835	21.45
NL-660	19.25
NL-660L/7786	20.75
NL-660P	21.70
NL-664L	37.95
NL-673	21.25
NL-869B	145.00
NL-869B/L	144.50
NL-872A	10.85
NL-5558/FG32	17.50
NL-6894, NL-6895	26.05
NL-7723-Ne*	14.85
NL-7786-Ne*	23.10
NL-8008	10.85

*Life indicating tube; changes color to show approach of end of tube life.

NATIONAL® READOUT TUBE DRIVERS AND ACCESSORIES AVAILABLE ON REQUEST

Amperex® Industrial Tubes

• POWER TUBES • MICROWAVE TUBES • SPECIAL PURPOSE TUBES

Information on types available government source inspected to applicable MIL specs available on request.

Amperex Type	Net Each
OA2	$ 1.60
OB2	1.75
OE3	7.25
OG3	2.30
2C39A	41.25
2D21	1.50
2DF4	11.65
2J42	146.25
2J42A	187.50
2J51	675.00
2J51A	1035.00
2J51S	375.00
2J55	247.50
2K25/KS9-20A	39.75
2M53	93.75
2M66	86.25
2M88	101.25
2-01C	22.00
3B28	9.55
3CV1500A7	225.00
3CV30000A1	710.00
3CV30000A3	590.00
3CV30000H3	620.00
3CW5000A1/8240	290.00
3CW5000A3/8242	250.00
3CW5000F1/8241	270.00
3CW5000F3/8243	260.00
3CW5000H3	265.00
3CW10000H3	445.00
3CW20000A1	615.00
3CW20000A3	515.00
3CW20000A7	820.00
3CW20000H3	540.00
3CW25000A3	565.00
3CW30000H3	595.00
3CW40000H3	795.00
3CX1000A7/8283	175.00
3CX1500A7/8877	200.00
3CX2500A3/8161	200.00
3CX2500F3/8251	205.00
3CX2500H3	240.00
3CX3000A1/8238	238.00
3CX3000A7	280.00
3CX3000F1/8239	245.00
3CX3000F7/8162	294.00
3CX5000A3	356.00
3CX5000H3	440.00
3CX10000A1/8158	545.00
3CX10000A3/8159	545.00
3CX10000A7/8160	580.00
3CX10000H3	545.00
3CX15000A3	560.00
3CX15000A7	610.00
3CX15000H3	560.00
3CX20000A3	580.00
3CX20000H3	580.00
4-125A/4D21	45.00
4-250A/5D22	50.00
4-500A	65.00
4-1000A/8166	135.00
4B32	15.00
4CV1500B	240.00
4CV8000A	515.00
4CV20000A	590.00
4CV35000A	910.00
4CV100000C/8351	2520.00
4CV250000A	6350.00
4CV250000V	6450.00
4CW800B, F	331.00
4CW10000A/8661	560.00
4CW2000A/8244	240.00
4CW25000A	825.00
4CW100000D	2520.00
4CW100000E	2880.00
4CW250000A	6350.00
4CW250000V	6450.00
4CX1000K/8352	230.00
4CX1500A	215.00
4CX1500B/8660	205.00
4CX3000A/8169	420.00
4CX5000A/8170	495.00
4CX5000J/8909	545.00
4CX5000R/8170W	705.00
4CX10000D/8171	575.00
4CX10000J	590.00
4CX15000A/8281	$ 695.00
4CX15000J/8910	765.00
4CX35000C/8349	1905.00
4E27A/5-125B	50.00
4J52(A)	525.00
4PR60C	116.00
4PR65A/8187	50.00
4PR125A/8247	57.00
4PR250C/8248	230.00
4PR400A/8188	64.00
4PR1000A/8189	215.00
4PR1000B	225.00
4W20000A/8173	3400.00
4X500A	160.00
5-500A	71.00
5C22AX	150.00
5CX1500A	195.00
5CX3000A	437.00
5J26	1000.00
5J26JAN	1125.00
5R4GYA	2.25
5R4GYB	2.60
6AK5WB	6.15
6AS7GA	5.40
6B32	47.50
6C21	121.00
6C4WA	3.15
6DJ8/ECC88	2.45
6Q4/EC80	6.20
6R4/ECC81	15.25
12AX7WA	6.20
12AY7	2.45
25T	43.00
35T	47.00
75C1	5.65
75TH, 75TL	43.00
85A1/OE3	7.25
85A2/OG3	2.30
90C1	2.25
100TH, 100TL	32.00
102A	192.00
150A1	5.40
150B2/6354	2.55
152TH	93.00
152TL	125.00
250R	42.00
254W	46.00
264/8576	420.00
284	217.00
290	470.00
290A	480.00
304TH, 304TL	83.00
450TH, 450TL	103.00
481B	12.25
501RA, 504R	375.00
572B/T-160L	14.50
575A	21.50
592/3-200A3	63.00
632B	35.50
672A	43.00
673	23.00
676, 677	66.75
678	52.00
723AB	54.00
725A	292.00
805	31.25
807	6.05
810	33.60
811A	9.25
812A	7.50
813	23.35
833A	72.00
833A JAN	87.10
838	45.00
845	35.20
849	231.00
857B	239.00
857B JAN	290.00
866A	4.40
866AX	12.75
869B, 869BL	142.00
869B JAN	186.00
872A	11.75
872AX	32.25
880	660.00
891	360.00
891R	485.00
892	305.00
892R	460.00
1000T	260.00
1500T	465.00
1913	4.55
1941A	5.40
2000T	500.00
2050	2.70
2050A	2.50
4065	31.50
4152	9.20
4654	7.75
5544	68.00
5545	$ 86.50
5557/FG17	10.50
5559	23.00
5575/100	245.00
5576/200	265.00
5586	550.00
5586 JAN	600.00
5604	610.00
5606, A	310.00
5619	505.00
5651	2.15
5654/6AK5W	4.70
5657	595.00
5657 JAN	637.00
5663	2.80
5666	317.00
5667	400.00
5668	377.00
5669	600.00
5670	2.60
5678	2.30
5682	2875.00
5684/C3JA	13.10
5685/C6JA	28.30
5686	4.25
5687	4.70
5687WA	5.70
5696A	2.25
5718	6.40
5725/6AS6W	3.75
5726/6AL5W	4.00
5727/2D21W	3.30
5749/6BA6W	3.35
5750/6BE6W	4.50
5751	3.25
5771	735.00
5814A	3.00
5824	5.05
5842	10.00
5842 JAN	11.00
5844	2.90
5847	10.50
5847 JAN	11.45
5861/EC55	45.00
5866	32.25
5867A	44.25
5868	73.50
5869	36.75
5870	131.00
5894	31.25
5894 JAN	32.50
5894A	32.50
5894B/8737	34.75
5895	18.50
5918A	1197.00
5920	4.50
5923	315.00
5924A	370.00
5963	1.65
5965A	2.45
5998A	14.10
6005	4.00
6007	3.00
6008	3.20
6046	1.85
6072A	4.55
6075A	248.00
6076A	325.00
6078	5100.00
6079	120.00
6080	5.90
6083	29.75
6084	5.86
6085	6.30
6087/5Y3GTWB	6.50
6134	6.45
6135	2.70
6136/6AU6WA	3.50
6137	3.25
6146A	4.80
6146B/8298A	5.40
6155	41.75
6155U	52.50
6156	48.00
6159	4.90
6159B	4.60
6189	5.75
6189/12AU7WA	5.75
6197	3.10
6201/12AT7WA	5.60
6202	2.95
6203	4.65
6211A	3.40
6216	4.00
6227	10.50
6252	35.75
6252 JAN	42.00
6263	41.25
6263A	39.25
6268/4C35A	53.00
6279/5C22	92.80
6293	5.80
6339	46.35
6350	$ 2.60
6354	2.55
6360	7.15
6360 JAN	8.10
6360A	7.10
6420	477.00
6421	575.00
6421F	590.00
6422	475.00
6423	560.00
6423F	580.00
6424	557.00
6425	695.00
6425F	705.00
6426	752.00
6427	895.00
6442	36.00
6463	2.75
6485/6AH6	2.35
6508	148.00
6521	745.00
6589	750.00
6617	735.00
6618	1125.00
6660/6BA6	1.90
6661/6BH6	3.30
6662/6BJ6	2.30
6663/6AL5	1.70
6664/6AB4	2.05
6669/6AQ5A	1.95
6676/6CB6A	1.90
6677/6CL6	2.70
6678/6U8A	2.25
6679/12AT7	2.05
6680/12AU7A	1.75
6681/12AX7A	1.60
6686	7.20
6688	6.80
6688 JAN	7.35
6688A	7.75
6688B	15.60
6689	6.35
6693	81.00
6693A	50.00
6696, A	1150.00
6697, A	1400.00
6786	338.00
6800A	525.00
6801	660.00
6883B/8032A/8552	5.65
6884	56.00
6907	36.00
6907 JAN	40.00
6919	1.55
6922	5.35
6922 JAN	5.40
6923	20.00
6939	14.50
6939 JAN	15.75
6960A	213.00
6961A	315.00
6975	255.00
6977	2.50
6979	45.98
7007	975.00
7008/YJ1010	2250.00
7034/4X150A	23.90
7034/4X150A JAN	24.25
7035/4X150D	29.00
7035/4X150D JAN	31.50
7036	1.80
7044	2.95
7062	4.40
7090	325.00
7092	135.00
7093	1250.00
7119	6.35
7120	597.00
7121	645.00
7136	84.00
7167	1.85
7203/4CX250B	35.60
7203/4CX250B JAN	37.00
7203/4CX250BNL	36.75
7204/4CX250F	39.10
7204/4CX250F JAN	39.50
7233	2.80
7237A	267.00
7239	8.65
7289/3CX100A5	27.00
7308	6.40
7308 JAN	6.85
7320/E84L	8.50
7370	12.90
7377	33.75
7378	57.75
7459	310.00
7480A	$1640.00
7527A	54.75
7534	32.00
7537	1180.00
7560	4455.00
7560V	4550.00
7580	48.50
7580W/4CX250R	44.50
7580W/4CX250R JAN	50.25
7609	31.50
7609 JAN	32.75
7643	10.50
7645	13.75
7693	5.30
7694	4.35
7698	45.00
7699	19.90
7701	2.45
7711/Z70U	1.80
7714/Z805U	5.25
7716	2.00
7717/6CY5	1.65
7721/D3A	38.00
7722/E280F	17.25
7724/14GT8	1.60
7737/E186F	7.26
7737 JAN	9.75
7753	270.00
7788	14.15
7788 JAN	26.00
7804	665.00
7805	630.00
7806	1190.00
7807	800.00
7815/3CPN10A5	25.50
7843, 7844	**
7854	40.00
7900	370.00
7983	15.90
7986/5866A	38.25
8008	12.40
8008AX	36.00
8020/8020W	23.50
8042	14.70
8068	4.30
8078	131.00
8094/199	385.00
8102	1.75
8106	1.90
8108/EC157	262.00
8116 JAN	67.25
8116A	65.00
8117A	58.00
8118	56.00
8119/TBL2/400	385.00
8120/TBLZ/500	385.00
8136	1.35
8156	4.30
8163/3-400Z	32.50
8165/4-65A	32.50
8168/4CX1000A	200.00
8179	237.00
8223/E288CC	9.60
8228	2.90
8233/E55L	17.90
8233 JAN	29.90
8255/E88C	8.30
8268	274.00
8269	383.00
8270	142.50
8295A	195.00
8300	38.00
8321/4CX350A	51.75
8322/4CX350F	53.75
8322 JAN	62.50
8348	12.20
8403	71.50
8408	16.75
8416	9.15
8436/EC158	322.50
8438/4-400A	53.50
8438A/4-400AX	58.75
8457	6.38
8458	12.25
8463	7.10
8482	116.00
8505A	29.50
8509	40.75
8556	9.00
8560AS	51.25
8577	13.05
8579	33.20
8580	22.75
8591	706.00
8592A	277.00
8593	329.00
8594	910.00
8595	20.25
8603	60.00
8608	24.75
8609	24.75

Price on request. **Prices subject to change or withdrawal without notice.

Amperex® Industrial Tubes

INDUSTRIAL TUBES (CONTINUED)

Amperex Type	Net Each	Amperex Type	Net Each	Amperex Type	Net Each	Amperex Type	Net Each	Amperex Type	Net Each
8621/ 4CX250FG	$ 40.50	8830A	$ 315.00	DX350	$ 75.00	PL150	$ 135.00	YJ1200	$ 575.00
8621 JAN	58.10	8867	149.00	DX373/3219	375.00	PL6574	22.50	YJ1250	660.00
8624	43.00	8888	935.00	DX393	53.50	PL6755	60.00	YJ1280/OM-52	250.00
8639	51.50	8913	1665.00	DX401/YJ1420	101.25	QF451/BS-910	97.00	YJ1300	120.00
8639 JAN	**	8915	1490.00	DX402	75.00	SD513	1050.00	YJ1390	142.50
8643	44.85	8918	7850.00	DX403	85.00	SD612	278.00	YJ1420/DX401	101.25
8647	110.00	8935	1160.00	DX427	1925.00	SD613A	100.00	YK1001	7950.00
8666	662.00	8936	1235.00	DX450	3500.00	SD621/ 4CX250H	84.00	YK1010/DX151	3750.00
8667	589.00	8937	1635.00	DX452	86.25	SD650	120.00	YK1090, -1091	825.00
8668	615.00	13201AE	6.00	DX453	93.75	SD652	899.00	Z504S	13.75
8669A	243.00	18045	10.75	E86C	7.80	TD-03-10D/E	45.00	Z505S	14.25
8670A	327.00	55032–55092	975.00	E92CC	4.80	WF409/ MD2901	112.50	Z803U/6779	3.45
8679	870.00	55309, 55310	1360.00	EA53	28.10	YD1240	406.00	Z805U/7714	5.25
8680	3600.00	55335/DX184	1875.00	EA76	5.60	YD1300	214.00	Z900T/5823	3.45
8683	26.25	55340	1180.00	ECC2000	6.10	YD1330	534.00	ZA1001	.50
8731	389.00	56001	24.20	EFP60	15.70	YD1331	502.00	ZA1002	.75
8732	315.00	A2426	21.75	EL360	24.00	YD1332	534.00	ZA1003	1.25
8733	363.00	AX105/FG105	126.50	HF200	56.00	YD1333	502.00	ZA1004	.75
8734	690.00	AX126B	160.00	HF300	48.00	YD1342/OZ168	6900.00	ZA1005	1.25
8735	1125.00	AX260/PL260	420.00	JP9-2.5D/F	112.50	YJ1010/7008	1780.00	ZB3200	835.00
8736	1490.00	C1148	112.50	JP9-2.5E	112.50	YJ1020	1470.00	ZC1031	1.50
8744	1200.00	C1149/ 4PR-60-B	131.25	JP9-2.5H	135.00	YJ1021	1630.00	ZC1050	1.87
8752	2725.00	C1166	125.75	JP9-15/D	187.00	YJ1060/6027H	225.00	ZC1060	3.75
8753	27.50	DX206	187.50	JP9-7L	187.50	YJ1071, YJ1110	187.50	ZX1051	71.00
8798	595.00	DX206F	225.00	JP9-18	187.00	YJ1120, YJ1121	187.50	ZX1052	107.00
8798 JAN	637.50	DX260	187.50	KS9-20B	44.25	YJ1160	500.00	ZX1053	265.00
8801	1195.00	DX267	1200.00	KS9-20D/F	41.25	YJ1162	530.00	ZX1060	**
8802/3-500Z	38.00	DX276	595.00	KS9-40B	125.00	YJ1180	5000.00	ZX1061	125.00
8812	655.00	DX286	1250.00	KS9-40D	120.00	YJ1190	900.00	ZX1062	169.00
8813	770.00	DX342, DX343	3500.00	OZ181	1490.00	YJ1191	890.00	ZX1063	265.00
8814	535.00	DX345	187.00	PE05/25	52.50				
				PE06/40E, N, P	25.00				

NUMERICAL INDICATORS

Amperex Type	Description	Net Each, Lots 1-99	Net Each, Lots 100-499*
8453/ ZM1050	Cold cathode decade numerical indicator	$14.50	....
ZM1000	Numerical indicator	5.00	$4.00
ZM1001	Plus-minus character indicator	7.35	6.35
ZM1005	Long life 10 digit indicator (0–9)	5.50	4.35
ZM1020	Long life 10 digit indicator (0–9)	9.50	8.50
ZM1021 ZM1023	Special character indicator A, V, Ω, %, ¬, +, −	9.50 9.50	8.50 8.50
ZM1022	Long life 10 digit indicator (0–9)	9.50	8.50

Amperex Type	Description	Net Each, Lots 1-99	Net Each, Lots 100-499*
ZM1024 ZM1025	Special character indicator C/S, KC/S, MC/S, μS, MS, NS, S	$10.45 10.45	$ 9.35 9.35
ZM1030	Bi-Quinary numerical indicator (red)	9.95	8.00
ZM1031	Bi-Quinary numerical indicator (red)	9.95	8.00
ZM1032	Bi-Quinary numerical indicator (clear)	9.95	8.00
ZM1033	Bi-Quinary numerical indicator (clear)	9.95	8.00
ZM1200	Long life indicator for in-line numerical display applications (up to 14)	51.80	45.00
55702	Socket for ZM1000 and ZM1001	.50	.50

***Larger Quantity Prices Available on Request.**

INSTRUMENT CATHODE RAY TUBES

Types listed have P31 phosphor. P1, P2, P7 and P11 phosphors are also available; prices on request.

Amperex Type	Net Each, Lots of 1-5	6-24	25-99	Amperex Type	Net Each, Lots of 1-5	6-24	25-99	Amperex Type	Net Each, Lots of 1-5	6-24	25-99
DH3-91	$ 29.00	$ 26.00	$ 24.00	D13-16GH	$337.00	$306.00	$280.00	D14-120GH	$170.00	$155.00	$125.00
DG7-31, -32	23.00	21.00	19.00	D13-16GH/01	372.00	335.00	308.00	D14-121GH	180.00	165.00	131.50
DG7-78	61.00	55.00	51.00	D13-23GH	380.00	342.00	315.00	D14-160GH/09	205.00	190.00	160.00
DH7-11	57.00	51.50	47.50	D13-26GH	203.00	183.00	169.00	E10-12GH	100.00	89.00	82.00
D7-190GH	34.00	30.00	28.00	D13-26GH/01	245.00	222.00	204.00	E10-130GH	115.00	102.00	93.50
D10-12GH	98.00	88.00	83.00	D13-27GH	65.00	58.00	53.50	Q13-110	345.00	310.00	286.00
D10-160GH	35.00	31.50	29.00	D13-450GH/01	264.00	239.00	220.00	M13-38	620.00	560.00	515.00
D10-170GH	84.00	76.00	70.00	D13-480GH	43.00	39.50	35.50	M17-140W	90.00	81.00	75.00
D10-200GH/07	265.00	245.00	221.00	D13-500GH/01	900.00	850.00	825.00	M17-141W	120.00	108.00	100.00

VIDICON CAMERA TUBES

Amperex Type	Net Each	Amperex Type	Net Each	Amperex Type	Net Each	Amperex Type	Net Each
7038	$170.00	7735B	$170.00	8134	$200.00	XQ1240	Prices on Request
7735A	150.00	8507A	190.00	8572	215.00	XQ1241	

PHOTOMULTIPLIERS

Photomultiplier base assemblies; high current fast transient time photomultipliers; universal and windowless photomultipliers in a variety of dynode structures and housing designs also available. Data and pricing on request.

Amperex Type	Size, Inches	Net 1-5	Amperex Type	Size, Inches	Net 1-5	Amperex Type	Size, Inches	Net 1-5	Amperex Type	Size, Inches	Net 1-5
XP1110	¾	$120.00	150UVP	1½	$325.00	56TVP	2	$ 735.00	XP1030	3	$ 185.00
XP1113		98.00	XP1010		145.00	56UVP		650.00	XP1031		230.00
XP1114		98.50	XP1011		145.00	XP1000		130.00	XP1032		1350.00
XP1115A		175.00	XP1015, C		190.00	XP1001		160.00	XQ1034		400.00
XP1115B		175.00	XP1016		325.00	XP1002		325.00	54AVP	5	225.00
XP1115C		175.00	53DVP	2	170.00	XP1003		685.00	54DVP		400.00
XP1116		120.00	56AVP		260.00	XP1004		570.00	54UVP		1350.00
XP1117		350.00	56AVP-03		395.00	XP1005		275.00	58AVP		630.00
XP1118		285.00	56CVP		400.00	XP1006		260.00	58DVP		850.00
XP1119		270.00	56DUVP		735.00	XP1020		570.00	58UVP		2500.00
XP1180	1	160.00	56DUVP-03		815.00	XP1021		575.00	XP1040		615.00
150AVP	1½	85.00	56DVP		395.00	XP1023		960.00	57AVP	9	800.00
150CVP		135.00	56DVP-03		495.00	XP1210		3600.00	60AVP		1550.00
150DVP		190.00	56TUVP		915.00	XP1230		375.00	60DVP		2200.00

COMPLETE LINE OF AMPEREX
- **COLD CATHODE AND TRIGGER TUBES**
- **INDUSTRIAL TUBE ACCESSORIES**
- **ELECTRO-OPTICAL DEVICES AND ACCESSORIES**
- **PHOTOMULTIPLIER BASE ASSEMBLIES**
- **RADIATION AND GEIGER-MUELLER COUNTER TUBES**

SPECIFICATIONS AND PRICES AVAILABLE ON REQUEST

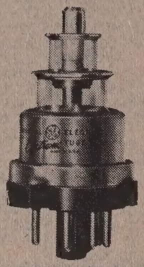
GENERAL ELECTRIC Industrial Tubes

POWER • INDUSTRIAL RECEIVING • BROADCAST • CAMERA

2C39B, 6897

6005/6AQ5W

7391


2C40A, 2C43

GL-5551A

GENERAL ELECTRIC TYPE	NET EACH
0A2	$ 1.60
0A3	1.95
0A4G	2.85
0B2	1.75
0B3	2.55
0C3, 0D3	1.90
1P40	6.75
2B22	44.00
GL-2B23	106.00
2C39A	22.45
2C39B	45.25
2C39WA	22.45
2C40A	45.10
2C42, 2C43	33.25
2C46	36.10
2D21	1.80
2E26	5.10
GL-2H21	490.00
2J42	122.40
3B24W	12.10
3B28	12.35
3C23	13.20
3CX1000A7/8283	178.55
3CX2500A3/8161	200.00
3CX2500F3/8251	205.00
3CX3000A1	238.00
3CX3000F1	245.00
C3J/L	15.80
4-65A	34.80
4-250A	53.50
4-400A	52.95
4-400C	60.30
4-1000A	150.60
4CX250B	35.75
4CX300A/8167	65.40
4CX350A	51.90
4CX1000A/8168	200.00
4CX1500B	219.35
4CX3000A/8169	420.00
4CX5000A/8170	495.00
4CX15000A	695.00
4D21/4-125A	50.40

GENERAL ELECTRIC TYPE	NET EACH
4E27/5-125B	$ 52.00
4PR60C	123.00
4X150A	25.00
4X500A	135.00
5R4GA	2.50
5R4GYB	2.80
6AK5WB*	6.15
6AN5	4.45
6AS6	4.25
6AS7GA	5.90
6C4WA*	3.15
6D4	3.65
6DJ8/ECC88	2.65
6L6WGB	5.80
GL-7C29	220.00
GL-7D21	1180.00
12AX7WA*	6.20
12AY7	2.65
FG-81A	50.85
83	2.90
FG-97	103.50
FG-98A	111.80
FG-105	60.10
FG-172	220.00
250R	45.40
FG-280	177.00
304TL	83.00
393A	15.40
407A	6.00
408A	5.60
GL-414	425.00
575A	25.25
610	14.00
615	11.50
672A	46.95
673	24.35
678	53.60
710/6011	14.45
710L/7518	16.55
807	6.05
810	42.85
811A	10.00
812A	8.50
813	28.50
816	5.25
829B	21.85
832A	20.30
833A	76.00

GENERAL ELECTRIC TYPE	NET EACH
GL-838	$ 19.00
GL-858B	235.00
862A	1775.00
866A	4.90
GL-869B	140.00
GL-870A	2920.00
872A/872	13.10
880	660.00
889A	292.35
892	355.35
927	10.30
930	7.15
931A	15.40
Z-1975	37.00
2050A/2050	2.70
Z-5369	37.00
GL-5513	880.00
GL-5518	2020.00
5544	34.55
GL-5550	58.00
GL-5551A	75.00
GL-5551A/PC	77.00
GL-5552A	112.00
GL-5552A/PC	115.00
GL-5553B	285.00
GL-5553B/PC	290.00
GL-5554	245.00
GL-5555	370.00
GL-5556	81.00
5557	10.45
5558	19.25
5559	25.30
5560	37.15
5561	74.45
5563A	60.15
GL-5564	1110.00
5575/100/616	252.80
5576/200	262.15
GL-5593	490.00
5606	320.80
5606A	362.00
GL-5623/B-47	30.00
GL-5627	80.00
GL-5630	2530.00
5632/C3J	15.45
5642	3.75
5651	2.20
5654/6AK5W*	2.70
5663	3.05
5665/C16J	55.65
5670*	3.40
GL-5674	225.00
5675	10.85
5684/C3J/A	15.40
5686*	4.75
5687*	5.15
5687WA*	5.70
5687WB*	5.70
5691	10.50
5692	9.85
5693	7.95
5696A	2.45
5718	4.05
5720	45.85
5725/6AS6W*	4.10
5726/6AL5W*	2.60
5727*	3.60
5736	211.15
5749/6BA6W*	3.60
5750/6BE6W*	4.90
5751*	3.50
5763	2.95
GL-5779	172.00
GL-5788	800.00

GENERAL ELECTRIC TYPE	NET EACH
5814A*	$ 3.25
GL-5822A	132.00
GL-5822A/PC	135.00
5823	2.10
5824	5.50
GL-5830	810.00
5842/417A	9.00
5844	2.90
5847/404A	10.15
5855	147.05
5881	3.10
5886	7.30
5894	30.20
5896	4.75
5902	4.80
5924A	367.80
5963	1.80
5964	2.30
5965A	2.65
5998A	15.40
6005/6AQ5W*	4.35
6012	9.80
GL-6014/C1K	14.20
6046	2.05
6072A*	4.55
6076	364.35
6080	6.40
6087*	7.10
6111	3.70
6134*	7.00
6135*	2.95
6136*	3.80
6137*	3.55
6146A	4.85
6146B/8298A	5.85
6161	170.00
6189/12AU7WA*	4.00
6197	3.40
6198A	170.00
6201*	3.85
6202*	2.95
6203*	5.10
6206	7.25
6211A	2.95
6216	4.40
GL-6228	3696.25
GL-6251	3550.00
6265*	4.85
6268	57.25
GL-6283	595.00
6299	86.30
6336A	22.80
6350	2.80
6360	5.45
6360A	6.90
6386*	10.35
6397	8.30
6442	42.40
6463	2.15
6485	2.35
GL-6512	475.00
GL-6513	620.00
GL-6514	805.00
GL-6515	1410.00
6550A	6.45
GL-6619	37.00
GL-6620	37.00
GL-6621	22.00
6660	2.05
6661	2.50
6662	2.50
6663	1.85

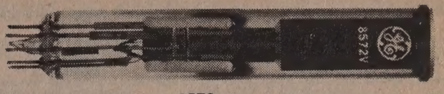
*Five Star type. /PC—indicates plastic coated.

GENERAL ELECTRIC Industrial Tubes

POWER • INDUSTRIAL RECEIVING • BROADCAST • CAMERA

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
6664	$ 2.25	7735BX	$ 340.00
6669	2.05	GL-7736	1160.00
6676	2.05	7768	157.20
6677	2.95	7784	109.25
6678	2.45	7815/	
6679	2.20	3CPN10A5	27.65
6680	1.90	7815AL	26.50
6681	1.80	7815R	27.65
6688*	9.55	7841	58.45
6771	77.45	Z-7856	400.00
6807	47.00	7861*	4.35
6808	48.15	Z-7869	1725.00
6809	53.50	Z-7870	1775.00
6829*	6.60	Z-7870B	875.00
6858/760	29.50	Z-7870X	1050.00
6859/760P	32.90	7905	4.65
6883A	5.05	7910	119.30
6883B/8032A/		7911	163.65
8552	6.05	Z-7911	75.00
6884	53.50	Z-7912	525.00
6897	46.85	7913	190.65
6907	29.20	Z-7919	130.00
6922/E88CC	5.35	Z-7927A	1230.00
6939	14.15	Z-7927 IND.	575.00
GL-6942	1230.00	Z-7929	370.00
7007/6166A	1050.60	Z-7933	550.00
7036	1.95	Z-7946	1820.00
7038	170.00	Z-7963	235.00
7044	3.40	GL-7964	74.00
7054	2.10	Z-7975A	745.00
7056	1.30	Z-7975 IND.	495.00
7058	1.85	Z-7978	1900.00
7059	2.10	7984	6.40
7060	2.35	GL-7985	2790.00
7061	2.10	Z-7996A	745.00
7077	55.30	Z-7996 IND.	495.00
GL-7151	880.00	GL-7998	190.00
7167	2.00	Z-7998	235.00
GL-7171	68.00	Z-7999	1625.00
7226	315.00	8005	24.70
7233	3.05	8008	14.15
7239	9.40	8020	21.40
7262A	190.00	8042	13.70
7263A	360.00	8068	4.70
7266	54.95	8077/7054	1.90
7289/		8082	71.95
3CX100A5	27.80	8083	71.95
7296	81.60	8102	1.90
7325	170.00	8106	2.10
7370	14.10	8134	200.00
7391	105.60	8136	1.45
GL-7399	570.00	8156	4.65
7410	11.55	GL-8205	880.00
7462	58.00	8233	16.10
7486	55.30	8295A	204.75
7551	4.40	GL-8360	86.00
7588	156.20	GL-8465	690.00
7625	68.30	GL-8466	740.00
7644	113.00	8484	170.00
GL-7669	75.00	8484H	185.00
GL-7669/PC	77.00	GL-8500	570.00
GL-7670	86.00	8507	75.00
GL-7671	112.00	8507A	190.00
GL-7671/PC	115.00	8511	315.00
GL-7672	144.00	8541	85.00
GL-7673	285.00	8541A	190.00
GL-7673/PC	290.00	8541X	370.00
GL-7681	180.00	8572	215.00
GL-7681/PC	184.00	8573	275.00
7697	170.00	8573A	215.00
7701	2.65	8573X	370.00
GL-7703	200.00	8604	310.00
7716	2.20	8643	40.80
7717	1.80	8683	24.65
7720	67.90	8751	200.85
7724	1.60	GL-8866	600.00
7725	21.20	8906	41.00
7726	26.70	8906AL	46.90
7735A	110.00	8908	7.55
7735B	170.00	8950	6.30

*Five-Star type. /PC—Indicates plastic coated.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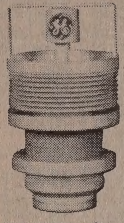
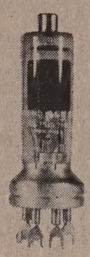

GL-6283, GL-7399


GL-710L/7518

6807

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
GE-13971	$125.25	GE-18651	$ 144.15
GE-14501	57.90	GL-37207	360.00
GE-14811	130.25	GL-37248	260.00
GE-15371	63.65	GL-51038	545.00
GE-16841	89.70	GL-51038R	600.00
GE-17241	35.05	GL-51064	1230.00
GE-17701	219.15		

THERMOSTAT KITS FOR IGNITRONS

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
N-15272AA	$8.80	N-15286AA	$11.60
N-15273AA	8.80	N-15287AA	11.20

McLEOD GAUGES

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
N-24900 AAG1	$400.00	N-24900 AEG1	$125.00
N-24900 AAG2	400.00	N-24900 AEG2	125.00

IGNITOR LEADS

GENERAL ELECTRIC TYPE	NET EACH	GENERAL ELECTRIC TYPE	NET EACH
N-22006LC	$2.65	N-22007LC	$3.00

REED SWITCHES

GENERAL ELECTRIC		NET EACH, LOTS OF		
NEW NUMBER	OLD NUMBER	1-99	100-499	500-999★
DR302-20/40	....	$0.80	$0.64	$0.48
DR401-15/55	....	$0.97	$0.78	$0.58
DR401-18/38	DR145	.90	.72	.54
DR401-24/46	DR123	.97	.78	.58
DR401-32/54	DR121	.97	.78	.58
DR540-30/50	....	1.00	.80	.60
DR541-30/50	....	1.25	1.00	.75
DR570-70/110	DR158	3.68	2.76	1.84
DR600-75/105	DR101	.49	.39	.35
DR600-30/50	DR104	.49	.39	.35
DR601-75/105	DR113	1.03	.82	.72
DR602-40/100	....	1.10	.88	.77
DR680-80/200	DRV120	4.41	3.52	3.08
DR681-100/250	DRV161	4.73	3.78	3.30
DR682-150/300	....	5.08	4.05	3.54
DR683-60/150	....	4.76	3.80	3.33

★LARGER QUANTITY PRICES ON REQUEST

RAYTHEON Industrial and Power Tubes

SUBMINIATURE • SPECIAL PURPOSE • TRANSMITTING • KLYSTRONS • MAGNETRONS •

Information on types available government source inspected to applicable MIL specs available on request.

Raytheon Type	Net Each
OA2	$ 1.60
OA2WA	3.72
OA3A/OA3	1.74
OA4G	2.55
OB2	1.75
OB2WA	2.94
OB3A/OB3	2.80
OC2	1.95
OC3A/OC3	1.83
OC3W	8.19
OD3A/OD3	1.83
OD3W	8.95
1AD4	4.80
1P31	9.04
1P32	4.90
1P37	9.05
1P39	4.97
1P40	6.45
1P41	8.45
ML-2C39A†	20.75
ML-2C39A‡	32.00
ML-2C39WA†	20.75
ML-2C39WA‡	32.00
ML-2C41	32.00
2D21	1.64
2G21	11.80
2G22	11.80
RK2J42*	140.00
RK2J50	305.00
RK2J51A	880.00
RK2J55	400.00
RK2J55*	205.00
RK2J70A	500.00
RK2J70B	500.00
RK2K22	95.00
RK2K25	43.00
RK2K26	70.00
RK2K28	100.00
RK2K28A/6133	100.00
RK2K29	125.00
RK2K45	205.00
RK2K56	120.00
2X2A	4.60
3A4	2.58
3A5	2.79
RK3B22/1C	10.85
RK3B24W	11.25
RK3B24WB	13.45
3C23	13.20
ML-3CPN10A5	25.50
ML-3CX100A5	22.00
C3J/AL-Ne	21.05
C3J/L	16.25
ML-4CV35000A	910.00
RK4D22	102.75
RK4D32	112.00
RK4J31	600.00
RK4J32	600.00
RK4J33	600.00
RK4J34	600.00
RK4J35	600.00
5AX51	11.45
5R4GYA	2.25
5R4GYB	2.60
5R4WGA	10.55
5R4WGB	15.50
6AH6WA	8.20
6AN5	4.56
6AN5WA	11.25
6AR6	6.00
6AS6	4.14
6BL6	100.00
6BM6	100.00
6BM6A	100.00
6J4	4.95
C6J	28.10
C6J/K	29.10
C6J/L	31.45
6X4W	4.97
7AK7	8.15
7AX51	13.55
12AT7WA	3.15
12AT7WB	3.15
12AT7WC	3.10
12AY7	2.45
KY21A	36.40
RX21A	34.95
ML-102A	192.00
ML-103	128.00

Raytheon Type	Net Each
FG105	$ 59.00
ML-121	128.00
ML-141	128.00
ML-142	98.00
ML-322	26.00
323B	14.00
ML-356/5771	735.00
ML-357B	795.00
QKK381	125.00
393A	14.00
QKK404/7158	85.00
QKH456/7040	815.00
CK510AX	7.90
CK512AX	6.77
CK526AX	13.65
QKK531	85.00
QKK532	85.00
CK533AX	6.60
CK534AX	6.60
QKK549	85.00
572B/T160L	18.00
RK575A	25.50
CK587	22.30
604	16.20
604L	17.70
606	25.95
606L	28.30
610/7723	13.00
615	11.50
616	14.30
617	17.00
619	12.20
623	16.70
QKK623	85.00
627	47.50
632B	35.50
635	15.75
635L	16.50
635P	18.15
643	14.35
649/5834	14.30
653/5835	21.05
660	18.90
660L/7786	20.35
664L	37.25
664P	42.50
RK673	22.75
710/6011	13.15
710L/7518	14.20
714	11.85
RK715C	73.50
716	12.80
RK725A	380.00
RK726C	115.00
QKH729	600.00
QKH730	600.00
QKH731	600.00
QKH732	600.00
QKH733	600.00
734/5544	27.00
734L	29.00
740/6856	25.00
740L/7022	25.00
740P/6857	25.00
QKK752	85.00
QKK753	85.00
QKK754A	490.00
QKK755A	490.00
QKK756A	490.00
QKK758A	490.00
QKK759A	490.00
760	29.80
760L	30.90
760P	31.50
770L	54.80
770P	60.00
780	106.45
RK807	5.94
RK811A	9.25
RK812A	7.50
RK813	25.85
RK814	28.35
RK816	5.02
QKK822	265.00
QKK826	265.00
RK829B	20.80
RK832A	18.90
QKK833A	780.00
QKK860	160.00
RK866A	4.64

Raytheon Type	Net Each
QKK869	$ 265.00
RK872A	12.10
QKK877	475.00
QKK878	800.00
ML880	660.00
884	3.72
ML-889RA	395.00
ML-891	360.00
ML-891R	485.00
ML-892	305.00
ML-892R	460.00
ML-893A	1585.00
ML-893AR	2450.00
QKK910	490.00
917	11.10
918	7.70
923	6.70
927	9.10
929	5.78
930	7.07
934	9.28
QKK965	490.00
QKK966	490.00
QKK967	490.00
QKK968	490.00
QKK978	925.00
QKK1022	370.00
CK1047	6.54
1051A	71.00
QKK1237	800.00
QKK1288A	575.00
QKK1289A	575.00
QKK1315	170.00
QKK1316	170.00
QKK1459	85.00
QKK1463	650.00
QKK1571	100.00
1614	7.03
1625	7.00
2050A/2050	2.48
2050W	11.15
CK5517	5.95
ML-5530	550.00
ML-5530H	550.00
ML-5531	865.00
ML-5541	755.00
5550	53.00
5555/FG238B	350.00
5557/715	9.50
5558/FG32	17.50
5559/FG57	23.00
5560/FG95	36.30
ML-5575/100	245.00
ML-5576/200	265.00
5581	8.30
5583	11.25
ML-5604	615.00
ML-5606	310.00
ML-5619	505.00
CK5636	6.55
CK5639	5.70
CK5639WA	12.15
CK5643	6.85
CK5651	2.15
CK5651A	2.15
CK5651WA	4.28
5653	6.05
CK5654	2.70
CK5654W	2.70
CK5654/6AK5W	2.70
CK5656	23.90
RK5657	650.00
ML-5658	665.00
5665/C16J	52.50
ML-5666	312.00
ML-5667	400.00
ML-5668	377.00
ML-5669	600.00
CK5670	3.00
CK5670W	3.00
CK5672	3.70
CK5675	16.05
CK5676	4.63
CK5678	3.70
ML-5681	2345.00
ML-5682	2875.00
ML-5682KT/8846	3150.00
5684/C3J/A	14.05

Raytheon Type	Net Each
5684-Ne	$ 18.55
CK5686	4.34
CK5687	4.70
CK5687WA	6.15
CK5687WB	5.85
CK5691	10.12
CK5692	9.83
CK5693	8.09
CK5702	5.66
CK5702WA	9.65
CK5702WB	14.25
CK5703	4.76
CK5703WA	12.75
CK5703WB	13.30
CK5718	4.12
RK5721	135.00
CK5725	3.50
CK5725W	3.50
CK5725/6AS6W	3.50
CK5726/6AL5W	2.40
CK5727/2D21W	3.30
CK5744	4.80
CK5744WA	10.65
CK5744WB	13.55
CK5749/6BA6W	3.32
CK5750/6BE6W	4.48
CK5751	3.25
CK5755	16.15
CK5763	2.95
CK5783	6.30
CK5783A	10.70
CK5783WA	9.45
CK5784	7.55
CK5784WA	15.35
CK5784WB	20.90
CK5787	6.27
CK5787A	10.45
CK5787WA	7.70
CK5814A	3.00
CK5823	2.00
CK5829	6.30
CK5829WA	11.35
RK5836	100.00
RK5837	100.00
CK5840	5.00
CK5840W	5.45
CK5842	9.25
CK5842WA	21.70
CK5844	2.75
CK5847	13.10
CK5847A	22.15
CK5875	4.88
CK5876A	10.20
CK5879	2.40
CK5881	3.10
CK5886	7.30
CK5889	33.00
CK5894(COM)	31.25
CK5899	5.50
CK5902	4.80
CK5902WA	11.85
CK5915	2.15
CK5963	1.64
CK5964	2.25
CK5965	2.45
CK5965A	2.45
CK5971	11.10
CK5975	4.20
RK5976	85.00
CK6005/6AQ5W	4.00
CK6012	8.69

Raytheon Type	Net Each
6014/C1K	$ 12.90
CK6021	3.82
CK6021W	9.05
CK6021WA	9.50
CK6029	11.10
RK6043	165.00
CK6072	4.55
CK6072A	4.61
CK6073/OA2	3.94
CK6074/OB2	4.56
CK6080	5.90
CK6080WA	11.85
CK6080WB	28.35
CK6080WC	28.35
CK6087/5Y3WGTB	6.20
CK6088	5.21
CK6110	8.85
CK6111	4.00
CK6111WA	9.50
CK6112	4.40
CK6112WA	6.70
RK6115A	95.00
CK6135	2.60
CK6136/6AU6WA	3.50
CK6146	4.40
CK6146A	4.75
CK6146B/8298A	5.80
CK6146W	7.70
CK6174	7.15
RK6177	285.00
CK6186/6AG5WA	4.60
CK6189/12AU7WA	4.00
CK6201/12AT7WA	3.55
CK6202	2.95
CK6205	5.80
CK6206	8.65
CK6213	8.95
CK6213A	10.00
RK6236	150.00
CK6245	12.85
CK6247	12.60
CK6247WA	31.30
ML-6256	390.00
ML-6257	395.00
ML-6258	435.00
CK6265	4.45
CK6286	5.33
CK6293	6.60
CK6293W	12.60
CK6336A	28.60
CK6336B	39.20
CK6350	2.60
CK6360	5.45
RK6390	170.00
CK6397	13.80
CK6418	6.20
CK6419	9.13
ML-6420	477.00
ML-6421	560.00
ML-6421F	590.00
ML-6422	475.00
ML-6423	560.00
ML-6423F	580.00
ML-6424	557.00
ML-6425	695.00
ML-6425F	705.00
ML-6426	755.00
ML-6427	895.00
ML-6442	39.00
CK6476	19.10

RAYTHEON-MACHLETT
INDUSTRIAL TUBES
CONTINUED ON NEXT PAGE

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*Foreign made. †Ceramic. ‡Glass. **Prices subject to change or withdrawal without notice.**

RAYTHEON INDUSTRIAL AND POWER TUBES (CONTINUED)

MODULATORS • AMPLIFIERS • OSCILLATORS • RECTIFIERS • STORAGE • PHOTOSENSITIVE

Information on types available government source inspected to applicable MIL specs available on request.

Raytheon Type	Net Each
CK6476A	$ 19.10
CK6519	22.30
CK6526	8.00
CK6528	26.10
CK6528A	39.20
CK6533	19.25
CK6533WA	28.40
CK6540	15.65
CK6542	17.20
CK6542A	17.95
CK6550	6.30
ML-6576	1035.00
CK6611	17.10
CK6612	20.75
CK6626/OA2WA	3.68
CK6627/OB2WA	2.68
CK6660/6BA6	1.90
CK6661/6BH6	2.30
CK6662/6BJ6	2.30
CK6663/6AL5	1.70

Raytheon Type	Net Each
CK6669/6AQ5	$ 1.95
CK6677/6CL6	2.70
CK6678/6U8A	2.25
CK6679/12AT7	2.05
CK6680/12AU7	1.75
CK6681/12AX7	1.60
CK6688	8.75
ML-6696	1150.00
ML-6696A	1150.00
ML-6697	1400.00
ML-6697A	1400.00
CK6763	6.54
ML-6771	71.90
CK6802	16.30
CK6829	6.60
CK6832	22.10
CK6883	5.25
CK6883B/8032A/8552	6.05
6894	26.05
6895	26.05
ML-6908	980.00

Raytheon Type	Net Each
CK6909	$ 16.35
CK6910	19.15
6989/C6J/KL	30.25
6989-Ne	37.30
ML-7007	975.00
RK7158/404	85.00
ML-7209	36.00
ML-7210	78.50
ML-7211	45.00
CK7246	9.86
ML-7289	22.00
ML-7479A	1050.00
ML-7480	1640.00
ML-7482	4555.00
ML-7560	4555.00
CK7576	15.90
CK7587	5.99
ML-7668	2375.00
ML-7698	45.00
ML-7698R	45.00
7723-Ne	14.85
7786-Ne	22.70

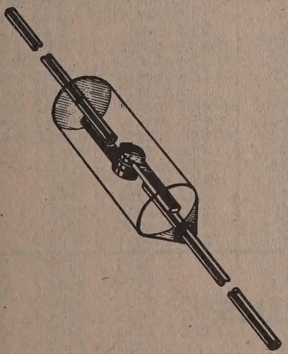
Raytheon Type	Net Each
ML-7815	$ 25.50
ML-7815/AL	27.00
ML-7815R	25.50
ML-7815R/AL	27.00
ML-7855	40.00
ML-7855K	40.00
ML-7855K/AL	43.00
CK7978	19.70
CK7979	25.30
RK8008	12.40
RK8020	23.50
ML-8038	2425.00
ML-8040	2550.00
ML-8041	2425.00
ML-8094/199	385.00
CK8096	31.50
ML-8170/4CX5000A	695.00
ML-8171/4CX10000D	550.00
ML-8224	195.00
CK8262	21.50

Raytheon Type	Net Each
ML-8281/4CX15000A	$ 695.00
ML-8317	4455.00
ML-8403	71.00
CK8520	75.50
ML-8533	71.00
ML-8534	135.00
ML-8535	135.00
ML-8536	135.00
ML-8537	135.00
ML-8538	125.00
ML-8539	125.00
ML-8661/4CW10000A	560.00
ML-8795	3575.00
ML-8846	3150.00
9001	6.20
9002	5.15
9003	6.52
9005	8.05
9006	3.23

PHOTOCELLS

Raytheon Type	Net Each, Lots of			Raytheon Type	Net Each, Lots of			Raytheon Type	Net Each, Lots of		
	1-99	100-499	500-999		1-99	100-499	500-999		1-99	100-499	500-999
CK1201	$1.75	$1.50	$1.40	CK1225	$1.50	$1.15	$1.05	CK1263	$2.20	$1.60	$1.50
CK1202	1.75	1.50	1.40	CK1226	1.50	1.15	1.05	CK1264	2.20	1.60	1.50
CK1203	1.75	1.50	1.40	CK1241	2.20	1.60	1.50	CK1265	2.20	1.60	1.50
CK1204	1.75	1.50	1.40	CK1242	2.20	1.60	1.50	CK1266	2.20	1.60	1.50
CK1205	1.75	1.50	1.40	CK1243	2.20	1.60	1.50	CK1273–CK1285	2.50	1.80	1.65
CK1206	1.75	1.50	1.40	CK1244	2.20	1.60	1.50	EM1502	2.20	1.60	1.50
CK1206A	1.75	1.50	1.40	CK1245	2.20	1.60	1.50	EM1505	2.20	1.50	1.50
CK1207	1.75	1.50	1.40	CK1246	2.20	1.60	1.50	EM1508	2.20	1.50	1.50
CK1222	1.50	1.15	1.05	CK1247	2.20	1.60	1.50				
CK1223	1.50	1.15	1.05	CK1261	2.20	1.60	1.50				
CK1224	1.50	1.15	1.05	CK1262	2.20	1.60	1.50				

SCHAUER SEMICONDUCTORS



HEAVY DUTY TYPE SZ ZENER DIODES

Large alloyed silicon junction has been placed into a small, rugged package to produce a zener diode with maximum surge capacity and stability. Low dynamic impedance assures superior performance in voltage regulators, clippers, surge protectors, etc. Inner epoxy seal, long leakage paths and high pressure molding permits reliable operation in all environments. Operating temperature 65° C to +150° C. $T_J = 175°$ C max. Size, 0.160″ dia. x 7/16″ lg. max. Gold plated, pure nickel 0.028″ dia. leads are 1 1/16″ long.

STOCK VALUES

Type	Nom. V_{zt} V	Type	Nom. V_{zt} V
SZ2.4	2.4	SZ6.8	6.8
SZ2.7	2.7	SZ7.5	7.5
SZ3.0	3.0	SZ8.2	8.2
SZ3.3	3.3	SZ9.1	9.1
SZ3.6	3.6	SZ10.0	10.0
SZ3.9	3.9	SZ11.0	11.0
SZ4.3	4.3	SZ12.0	12.0
SZ4.7	4.7	SZ13.0	13.0
SZ5.1	5.1	SZ15.0	15.0
SZ5.6	5.6	SZ16.0	16.0
SZ6.2	6.2		

PRICING BY TOLERANCE

Types shown are 10% tolerance. Add suffix to part number for other tolerances: **20%, 2%, 1%; A** for 5%. For intermediate voltages, specify voltage and tolerance: i.e., SZ6.3 (1%).

Tol.	Net Each, Lots of				
	1-99	100-499	500-999	1000-4999	5000 Up
10%	$0.49	$0.38	$0.33	$0.29	$0.27
5%	.59	.47	.41	.37	.34
2%	.89	.81	.76	.72	.69
1%	1.07	.97	.91	.86	.82

ZENER DIODE KIT

Assortment of 51 zener diodes, 1-watt, 1% tolerance. Includes 3 each voltage covering range 2.7–16.0. Close tolerance insures fixed impedance and temperature coefficients; permits voltage range tests for optimum design. Reusable many times in laboratory prototypes and precision test equipment. Each voltage in reusable poly bag, all in handy file box. Data sheet included. **Schauer Zener Diode Kit No. SCH51**—Net Each **$24.50**

REFERENCE DIODES

Type	Forward Voltage Drop			Net Each, Lots of				
	10 μA	10 mA	100 mA	1-99	100-499	500-999	1000-4999	5000 Up
SS1	.2–.5	.04–.72	.90 max.	$0.23	$0.18	$0.16	$0.14	$0.12
SS1-2	.7–.1	1.3–1.4	1.75 max.	.50	.39	.35	.32	.29

SILICON VARISTORS

Two matched silicon junctions connected in parallel and oppositely poled. Encapsulated with an alkyd molding compound; 0.028″ dia. x 1 1/16″ lg. welded, axial gold plated nickel leads. May be placed in series or parallel to yield higher voltages or currents. **SV1:** General purpose limiter; regulates above 100 μA. **SV1-LR:** Log 1 extended down to 5 μA oscillator control, limiters. **V64:** Protection of 150 mV–300 mV meter movements. Max. surge, min. shunt error. Size, 0.180″ dia. x 7/16″ lg.

Type	Forward Voltage Both Directions		Net Each, Lots of				
	10 μA	100 mA	1-99	100-499	500-999	1000-4999	5000 Up
SV1	.20–.50	.78–.90	$0.41	$0.35	$0.29	$0.24	$0.20
SV1-LR	.35–.50	.78–.90	.43	.37	.31	.26	.22
V64	.10–.25*	.78–.90	.45	.39	.33	.28	.24

*At 0.1 μA.

MIL/EIA Standard Resistance Values

STANDARD PRECISION RESISTANCE VALUES

MILITARY STANDARD 90169A (MIL-BELL)

Tolerances: ±1% available in all values listed; figures with * are also available in ±2% values; figures with † are also available in ±2% and ±5% values.

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
1.00†	5.11†	26.1†	133†	681†	3,480†	17.8K†	90.9K†	464K†	2.37 meg.†
1.02	5.23	26.7	137	698	3,570	18.2K	93.1K	475K	2.43 meg.
1.05*	5.36*	27.4*	140*	715*	3,650*	18.7K*	95.3K*	487K*	2.49 meg.*
1.07	5.49	28.0	143	732	3,740	19.1K	97.6K	499K	2.55 meg.
1.10†	5.62†	28.7†	147†	750†	3,830†	19.6K†	100K†	511K†	2.61 meg.†
1.13	5.76	29.4	150	768	3,920	20.0K	102K	523K	2.67 meg.
1.15*	5.90*	30.1*	154*	787*	4,020*	20.5K*	105K*	536K*	2.74 meg.*
1.18	6.04	30.9	158	806	4,120	21.0K	107K	549K	2.80 meg.
1.21†	6.19†	31.6†	162†	825†	4,220†	21.5K†	110K†	562K†	2.87 meg.†
1.24	6.34	32.4	165	845	4,320	22.1K	113K	576K	2.94 meg.
1.27*	6.49*	33.2*	169*	866*	4,420*	22.6K*	115K*	590K*	3.01 meg.*
1.30	6.65	34.0	174	887	4,530	23.2K	118K	604K	3.09 meg.
1.33†	6.81†	34.8†	178†	909†	4,640†	23.7K†	121K†	619K†	3.16 meg.†
1.37	6.98	35.7	182	931	4,750	24.3K	124K	634K	3.24 meg.
1.40*	7.15*	36.5*	187*	953*	4,870*	24.9K*	127K*	649K*	3.32 meg.*
1.43	7.32	37.4	191	976	4,990	25.5K	130K	665K	3.40 meg.
1.47†	7.50†	38.3†	196†	1,000†	5,110†	26.1K†	133K†	681K†	3.48 meg.†
1.50	7.68	39.2	200	1,020	5,230	26.7K	137K	698K	3.57 meg.
1.54*	7.87*	40.2*	205*	1,050*	5,360*	27.4K*	140K*	715K*	3.65 meg.*
1.58	8.06	41.2	210	1,070	5,490	28.0K	143K	732K	3.74 meg.
1.62†	8.25†	42.2†	215†	1,100†	5,620†	28.7K†	147K†	750K†	3.83 meg.†
1.65	8.45	43.2	221	1,130	5,760	29.4K	150K	768K	3.92 meg.
1.69*	8.66*	44.2*	226*	1,150*	5,900*	30.1K*	154K*	787K*	4.02 meg.*
1.74	8.87	45.3	232	1,180	6,040	30.9K	158K	806K	4.12 meg.
1.78†	9.09†	46.4†	237†	1,210†	6,190†	31.6K*	162K†	825K†	4.22 meg.†
1.82	9.31	47.5	243	1,240	6,340	32.4K	165K	845K	4.32 meg.
1.87*	9.53*	48.7*	249*	1,270*	6,490*	33.2K*	169K*	866K*	4.42 meg.*
1.91	9.76	49.9	255	1,300	6,650	34.0K	174K	887K	4.53 meg.
1.96†	10.0†	51.1†	261†	1,330†	6,810†	34.8K†	178K†	909K†	4.64 meg.†
2.00	10.2	52.3	267	1,370	6,980	35.7K	182K	931K	4.75 meg.
2.05*	10.5*	53.6*	274*	1,400*	7,150*	36.5K*	187K*	953K*	4.87 meg.*
2.10	10.7	54.9	280	1,430	7,320	37.4K	191K	976K	4.99 meg.
2.15†	11.0†	56.2†	287†	1,470†	7,500†	38.3K†	196K†	1.00 meg.†	5.11 meg.†
2.21	11.3	57.6	294	1,500	7,680	39.2K	200K	1.02 meg.	5.23 meg.
2.26*	11.5*	59.0*	301*	1,540*	7,870*	40.2K*	205K*	1.05 meg.*	5.36 meg.*
2.32	11.8	60.4	309	1,580	8,060	41.2K	210K	1.07 meg.	5.49 meg.
2.37†	12.1†	61.9†	316†	1,620†	8,250†	42.2K†	215K†	1.10 meg.†	5.62 meg.†
2.43	12.4	63.4	324	1,650	8,450	43.2K	221K	1.13 meg.	5.76 meg.
2.49*	12.7*	64.9*	332*	1,690*	8,660*	44.2K*	226K*	1.15 meg.*	5.90 meg.*
2.55	13.0	66.5	340	1,740	8,870	45.3K	232K	1.18 meg.	6.04 meg.
2.61†	13.3†	68.1†	348†	1,780†	9,090†	46.4K†	237K†	1.21 meg.†	6.19 meg.†
2.67	13.7	69.8	357	1,820	9,310	47.5K	243K	1.24 meg.	6.34 meg.
2.74*	14.0*	71.5*	365*	1,870*	9,530*	48.7K*	294K*	1.27 meg.*	6.49 meg.*
2.80	14.3	73.2	374	1,910	9,760	49.9K	255K	1.30 meg.	6.65 meg.
2.87†	14.7†	75.0†	383†	1,960†	10.0K†	51.1K†	261K†	1.33 meg.†	6.81 meg.†
2.94	15.0	76.8	392	2,000	10.2K	52.3K	267K	1.37 meg.	6.98 meg.
3.01*	15.4*	78.7*	402*	2,050*	10.5K*	53.6K*	274K*	1.40 meg.*	7.15 meg.*
3.09	15.8	80.6	412	2,100	10.7K	54.9K	280K	1.43 meg.	7.32 meg.
3.16†	16.2†	82.5†	422†	2,150†	11.0K†	56.2K†	287K†	1.47 meg.†	7.50 meg.†
3.24	16.5	84.5	432	2,210	11.3K	57.6K	294K	1.50 meg.	7.68 meg.
3.32*	16.9*	86.6*	442*	2,260*	11.5K*	59.0K*	301K*	1.54 meg.*	7.87 meg.*
3.40	17.4	88.7	453	2,320	11.8K	60.4K	309K	1.58 meg.	8.06 meg.
3.48†	17.8†	90.9†	464†	2,370†	12.1K†	61.9K†	316K†	1.62 meg.†	8.25 meg.†
3.57	18.2	93.1	475	2,430	12.4K	63.4K	324K	1.65 meg.	8.45 meg.
3.65*	18.7*	95.3*	487*	2,490*	12.7K*	64.9K*	332K*	1.69 meg.*	8.66 meg.*
3.74	19.1	97.6	499	2,550	13.0K	66.5K	340K	1.74 meg.	8.87 meg.
3.83†	19.6†	100†	511†	2,610†	13.3K†	68.1K†	348K†	1.78 meg.†	9.09 meg.†
3.92	20.0	102	523	2,670	13.7K	69.8K	357K	1.82 meg.	9.31 meg.
4.02*	20.5*	105*	536*	2,740*	14.0K*	71.5K*	365K*	1.87 meg.*	9.53 meg.*
4.12	21.0	107	549	2,800	14.3K	73.2K	374K	1.91 meg.	9.76 meg.
4.22†	21.5†	110†	562†	2,870†	14.7K†	75.0K†	383K†	1.96 meg.†	10.0 meg.†
4.32	22.1	113	576	2,940	15.0K	76.8K	392K	2.00 meg.	
4.42*	22.6*	115*	590*	3,010*	15.4K*	78.7K*	402K*	2.05 meg.*	
4.53	23.2	118	604	3,090	15.8K	80.6K	412K	2.10 meg.	
4.64†	23.7†	121†	619†	3,160†	16.2K†	82.5K†	422K†	2.15 meg.†	
4.75	24.3	124	634	3,240	16.5K	84.5K	432K	2.21 meg.	
4.87*	24.9*	127*	649*	3,320*	16.9K*	86.6K*	442K*	2.26 meg.*	
4.99	25.5	130	665	3,400	17.4K	88.7K	453K	2.32 meg.	

EIA STANDARD RESISTANCE VALUES

Tolerances: ±5% available in all values listed; **Bold face figures** are also available in ±10% values.

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Ohms
2.7	13	**68**	360	**1,800**	9,100	**47,000**	0.24 meg.	**1.2 meg.**	6.2 meg.
3.0	**15**	75	**390**	2,000	**10,000**	51,000	**0.27 meg.**	1.3 meg.	**6.8 meg.**
3.3	16	**82**	430	**2,200**	11,000	**56,000**	0.30 meg.	**1.5 meg.**	7.5 meg.
3.6	**18**	91	**470**	2,400	**12,000**	62,000	**0.33 meg.**	1.6 meg.	**8.2 meg.**
3.9	20	**100**	510	**2,700**	13,000	**68,000**	0.36 meg.	**1.8 meg.**	9.1 meg.
4.3	**22**	110	**560**	3,000	**15,000**	75,000	**0.39 meg.**	2.0 meg.	**10.0 meg.**
4.7	24	**120**	620	**3,300**	16,000	**82,000**	0.43 meg.	**2.2 meg.**	11.0 meg.
5.1	**27**	130	**680**	3,600	**18,000**	91,000	**0.47 meg.**	2.4 meg.	**12.0 meg.**
5.6	30	**150**	750	**3,900**	20,000	**0.1 meg.**	0.51 meg.	**2.7 meg.**	13.0 meg.
6.2	**33**	160	**820**	4,300	**22,000**	0.11 meg.	**0.56 meg.**	3.0 meg.	**15.0 meg.**
6.8	36	**180**	910	**4,700**	24,000	**0.12 meg.**	0.62 meg.	**3.3 meg.**	16.0 meg.
7.5	**39**	200	**1,000**	5,100	**27,000**	0.13 meg.	**0.68 meg.**	3.6 meg.	**18.0 meg.**
8.2	43	**220**	1,100	**5,600**	30,000	**0.15 meg.**	0.75 meg.	**3.9 meg.**	20.0 meg.
9.1	**47**	240	**1,200**	6,200	**33,000**	0.16 meg.	**0.82 meg.**	4.3 meg.	**22.0 meg.**
10	51	**270**	1,300	**6,800**	36,000	**0.18 meg.**	0.91 meg.	**4.7 meg.**	
11	**56**	300	**15,00**	7,500	**39,000**	0.20 meg.	**1.0 meg.**	5.1 meg.	
12	62	**330**	1,600	**8,200**	43,000	**0.22 meg.**	1.1 meg.	**5.6 meg.**	

OHMITE Fixed Resistors

BROWN DEVIL® FIXED RESISTORS—TYPE 200

OHMITE
BROWN DEVIL

Wire-wound, vitreous enameled resistors, durable and rugged. **Resistance Tolerance:** For values 1 ohm and higher, ±5%; for 0.5 ohm, ±10%. Tinned leads 1½″ lg.; 3 and 5¼ W, 20 AWG; 8, 12 and 20 W, 18 AWG.

3-Watt Size				5¼-Watt Size			
Ohms	**Stock No.**	**Ohms**	**Stock No.**	**Ohms**	**Stock No.**	**Ohms**	**Stock No.**
1.0	2712	150	2764	1.0	2822	150	2874
1.1	2713	160	2765	1.1	2823	160	2875
1.2	2714	180	2766	1.2	2824	180	2876
1.3	2715	200	2767	1.3	2825	200	2877
1.5	2716	220	2768	1.5	2826	220	2878
1.6	2717	240	2769	1.6	2827	240	2879
1.8	2718	270	2770	1.8	2828	270	2880
2.0	2719	300	2771	2.0	2829	300	2881
2.2	2720	330	2772	2.2	2830	330	2882
2.4	2721	360	2773	2.4	2831	360	2883
2.7	2722	390	2774	2.7	2832	390	2884
3.0	2723	430	2775	3.0	2833	430	2885
3.3	2724	470	2776	3.3	2834	470	2886
3.6	2725	510	2777	3.6	2835	510	2887
3.9	2726	560	2778	3.9	2836	560	2888
4.3	2727	620	2779	4.3	2837	620	2889
4.7	2728	680	2780	4.7	2838	680	2890
5.1	2729	750	2781	5.1	2839	750	2891
5.6	2730	820	2782	5.6	2840	820	2892
6.2	2731	910	2783	6.2	2841	910	2893
6.8	2732	1000	2784	6.8	2842	1000	2894
7.5	2733	1100	2785	7.5	2843	1100	2895
8.2	2734	1200	2786	8.2	2844	1200	2896
9.1	2735	1300	2787	9.1	2845	1300	2897
10	2736	1500	2788	10	2846	1500	2898
11	2737	1600	2789	11	2847	1600	2899
12	2738	1800	2790	12	2848	1800	2900
13	2739	2000	2791	13	2849	2000	2901
15	2740	2200	2792	15	2850	2200	2902
16	2741	2400	2793	16	2851	2400	2903
18	2742	2700	2794	18	2852	2700	2904
20	2743	3000	2795	20	2853	3000	2905
22	2744	3300	2796	22	2854	3300	2906
24	2745	3600	2797	24	2855	3600	2907
27	2746	3900	2798	27	2856	3900	2908
30	2747	4300	2799	30	2857	4300	2909
33	2748	4700	2800	33	2858	4700	2910
36	2749	5100	2801	36	2859	5100	2911
39	2750	5600	2802	39	2860	5600	2912
43	2751	6200	2803	43	2861	6200	2913
47	2752	6800	2804	47	2862	6800	2914
51	2753	7500	2805	51	2863	7500	2915
56	2754	8200	2806	56	2864	8200	2916
62	2755	9100	2807	62	2865	9100	2917
68	2756	10K	2808	68	2866	10K	2918
75	2757			75	2867	11K	2919
82	2758			82	2868	12K	2920
91	2759			91	2869	13K	2921
100	2760			100	2870	15K	2922
110	2761			110	2871	16K	2923
120	2762			120	2872	18K	2924
130	2763			130	2873	20K	2925

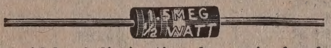
	Stock Number				Stock Number		
Ohms	**8 Watts**	**12 Watts**	**20 Watts**	**Ohms**	**8 Watts**	**12 Watts**	**20 Watts**
0.5	......	1700A	1800A	2250	1539	1743	1828
1.0	1500	1701	1802A	2500	1540	1744	1830
1.5	1500B	1704	......	2750	......	......	1831
2.0	1501	1705	1802B	3000	1541	1745	1832
3.0	1502	1706	1802C	3500	1542	1746	1833
4.0	1503	1707	1802D	4000	1543	1747	1834
5.0	1504	1708	1803	4500	1544	1748	1835
7.5	1505	1709	......	5000	1545	1749	1836
10	1506	1710	1804	6000	1546	1750	1837
12	1507	1711	......	7000	1547	1751	1838
15	1508	1712	......	7500	1548	1752	1839
20	1509	1713	......	8000	1549	1753	1840
25	1510	1714	1805	8500	......	1754	......
30	1511	1715	......	9000	1550	1754A	1840A
35	1512	1716	......	10K	1551	1755	1841
40	1513	1717	......	11K	......	1756	......
50	1514	1718	1806	12K	......	1757	......
75	1515	1719	1807	12.5K	1552	1758	1842
100	1516	1720	1808	13.5K	......	1759	......
125	1517	1721	......	15K	1553	1761	1843
150	1518	1722	1809	16K	......	1762	......
200	1519	1723	1810	17.5K	1554	1763	......
225	1520	1724	......	18K	......	1764	......
250	1521	1725	1811	20K	1555	1765	1844
300	1522	1726	1812	22.5K	1556	1766	......
350	1523	1727	1813	25K	1557	1767	1845
400	1524	1728	1814	30K	......	1768	1846
450	1525	1729	......	35K	......	1769	1847
500	1526	1730	1815	40K	......	1770	1848
600	1527	1731	......	45K	......	1771	1849
650	......	......	1816	50K	......	1772	1850
700	1528	1732	1817	55K	......	......	1851
750	1529	1733	1818	60K	......	......	1852
800	1530	1734	1819	65K	......	......	1853
900	1531	1735	1820A	70K	......	......	1854
1000	1532	1736	1821	75K	......	......	1855
1100	1533	1737	......	80K	......	......	1856
1200	1534	1738	1822	85K	......	......	1857
1250	1535	1739	1823	90K	......	......	1858
1500	1536	1740	1824	95K	......	......	1859
1750	1537	1741	1825	100K	......	......	1860
2000	1538	1742	1827				

3-Watt Brown Devils

Values, Ohms*	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500 Up
1-1K	$0.63	$0.54	$0.44	$0.35	$0.28	$0.26
1.1K-4.7K	.71	.60	.50	.39	.32	.30
5.1K-10K	.74	.63	.52	.41	.33	.31
5¼-Watt Brown Devils						
1-1K	$0.66	$0.56	$0.46	$0.36	$0.30	$0.28
1.1K-4.7K	.74	.63	.52	.41	.33	.31
5.1K-10K	.76	.65	.53	.42	.34	.32
11K-20K	.84	.71	.59	.46	.38	.33
8-Watt Brown Devils						
1-1K	$0.71	$0.60	$0.50	$0.39	$0.32	$0.30
1.1K-5K	.76	.65	.53	.42	.34	.32
6K-10K	.87	.74	.61	.48	.39	.37
12.5K-20K	1.05	.89	.74	.58	.47	.44
22.5K and 25K	1.10	.94	.77	.61	.50	.46
12-Watt Brown Devils						
0.5	$1.05	$0.89	$0.74	$0.58	$0.47	$0.44
1-1K	.74	.63	.52	.41	.33	.32
1.1K-5K	.79	.67	.55	.43	.36	.33
6K-10K	.89	.76	.62	.49	.40	.37
11K-20K	1.05	.89	.74	.58	.47	.44
22.5K-40K	1.10	.94	.77	.61	.50	.46
45K and 50K	1.20	1.02	.84	.66	.54	.50
20-Watt Brown Devils						
0.5	$1.20	$1.02	$0.84	$0.66	*0.54	$0.50
1-1K	.87	.74	.61	.48	.39	.37
1.2K-5K	.89	.76	.62	.49	.40	.37
6K-10K	1.10	.94	.77	.61	.50	.46
12.5K-20K	1.15	.98	.81	.63	.52	.48
25K-40K	1.25	1.06	.88	.69	.56	.53
45K-60K	1.45	1.23	1.02	.80	.65	.61
65K-80K	1.70	1.45	1.19	.94	.77	.71
85K-100K	2.00	1.70	1.40	1.10	.90	.84

*Restricted to values shown in table of stock numbers. Prices are for each unit ordered, **not** assortments.

LITTLE DEVIL® MOLDED COMPOSITION RESISTORS



Can be used at full wattage ratings at 70° C (158° F) ambient temp. Feature rapid heat dissipation, low noise level and low voltage coefficient. Meet test requirements for MIL-R-11 characteristics in ⅛ to 2-watt sizes. Max. continuous voltage drop 150 V for ⅛ watt; 250 volts for ¼-watt; 350 V for ½-watt; 500 V for 1-watt; 750 V for 2-watt units. **Size:** .145″ l. x .062″ dia., ⅛ watt; ¼″ l. x .090″ dia., ¼ watt; ⅜″ l. x 9/64″ dia., ½ watt; 9/16″ l. x 7/32″ dia., 1 watt; 11/16″ l. x 5/16″ dia., 2 watts.

STOCK RESISTORS

All values available ±5% tol.; **bold types** are ±10% EIA.

Ohms	Ohms	Ohms	Ohms	Ohms	Ohms	Megs	Megs	Megs
1.0	**6.8**	**47**	**330**	**2200**	**15000**	**0.1**	**0.68**	**4.7**
1.1	7.5	51	360	2400	16000	0.11	0.75	5.1
1.2	**8.2**	**56**	**390**	**2700**	**18000**	**0.12**	**0.82**	**5.6**
1.3	9.1	62	430	3000	20000	0.13	0.91	6.2
1.5	**10**	**68**	**470**	**3300**	**22000**	**0.15**	**1.0**	**6.8**
1.6	11	75	510	3600	24000	0.16	1.1	7.5
1.8	**12**	**82**	**560**	**3900**	**27000**	**0.18**	**1.2**	**8.2**
2.0	13	91	620	4300	30000	0.20	1.3	9.1
2.2	**15**	**100**	**680**	**4700**	**33000**	**0.22**	**1.5**	**10.0**
2.4	16	110	750	5100	36000	0.24	1.6	11.0
2.7	**18**	**120**	**820**	**5600**	**39000**	**0.27**	**1.8**	**12.0**
3.0	20	130	910	6200	43000	0.30	2.0	13.0
3.3	**22**	**150**	**1000**	**6800**	**47000**	**0.33**	**2.2**	**15.0**
3.6	24	160	1100	7500	51000	0.36	2.4	16.0
3.9	**27**	**180**	**1200**	**8200**	**56000**	**0.39**	**2.7**	**18.0**
4.3	30	200	1300	9100	62000	0.43	3.0	20.0
4.7	**33**	**220**	**1500**	**10000**	**68000**	**0.47**	**3.3**	**22.0**
5.1	36	240	1600	11000	75000	0.51	3.6	
5.6	**39**	**270**	**1800**	**12000**	**82000**	**0.56**	**3.9**	
6.2	43	300	2000	13000	91000	0.62	4.3	

SPECIFICATIONS AND PRICING

Prices apply to a quantity of one resistance value, one wattage, one tolerance. Minimum resistance for ⅛ watt size, per MIL-R-11, 10 ohms; ½ watt size, 2.7 ohms.

TOLERANCE ±5%

W	Resistance Range, Ohms	Net Each, Lots of 1-9	10-99	100-249	250-499	500-999	1000-4999	5000 Up
⅛	2.7-9.1	$0.37	$0.175	$0.165	$0.158	$0.153	$0.147	$0.142
	10-22 meg	.34	.158	.15	.144	.139	.134	.13
¼	2.7-9.1	.29	.11	.10	.09	.08	.069	.058
	10-1 meg	.26	.10	.07	.063	.053	.037	.032
	1.1-22 meg	.29	.11	.10	.09	.08	.069	.058
½	1.0-2.4	.26	.13	.11	.09	.08	.069	.059
	2.7-22 meg	.24	.12	.06	.052	.044	.038	.037
1	2.7-22 meg	.36	.18	.08	.077	.069	.062	.059
2	10-22 meg	.48	.30	.15	.143	.135	.10	.094

TOLERANCE ±10%

W	Resistance Range, Ohms	1-9	10-99	100-249	250-499	500-999	1000-4999	5000 Up
⅛	2.7-8.2	$0.27	$0.125	$0.117	$0.112	$0.108	$0.105	$0.103
	10-22 meg	.24	.112	.106	.102	.098	.095	.093
¼	2.7-8.2	.14	.09	.08	.069	.058	.044	.033
	10-1 meg	.13	.06	.05	.04	.03	.02	.019
	1.2-22 meg	.14	.09	.08	.069	.058	.044	.033
½	1.0-2.2	.13	.08	.07	.059	.048	.036	.028
	2.7-22 meg	.12	.06	.04	.033	.025	.019	.018
1	2.7-22 meg	.18	.09	.05	.046	.038	.031	.029
2	10-22 meg	.24	.19	.10	.089	.081	.052	.049

OHMITE Resistors

VITREOUS ENAMELED RESISTORS

Dividohm® Adjustable Type: Vitreous enameled on ceramic cores with narrow strip of the wire-turns forming a contact surface for the embossed contact of a screwdriver—adjustable lug. A patented percentage of the resistance scale is stamped on the units to make it easy to set the lug at the desired value. **Fixed Resistors:** Lug type, wire-wound on ceramic cores. Wattage ratings are for use in free air.

STOCK VALUE ORDERING NUMBERS

	Dividohm Adjustable Resistor Type 210							Fixed Resistor Type 270				
Ohms	12-Watt	25-Watt	50-Watt	75-Watt	100-Watt	175-Watt	225-Watt	25-Watt	50-Watt	100-Watt	175-Watt	225-Watt
1	1001	0360	0560 A	0769 A	0956 A	1156 A	1356 A	0200J	0400J	0600C	0700C	0900C
2	1002	0360 B	0560 B	0769 B	0956 B	1156 B	1356 B	0200K	0400K	0600D	0700D	0900D
3	1003	0361	0560 C	0769 C	0956 C	1156 C	1356 C	0200L	0400L	0600E	0700E	0900E
4	....	....	0560 D	0769 D	0956 D	1156 D	1356 D	0200N	0400N	0600F	0700F	0900F
5	1004	0362	0560	0769	0956	1156	1356	0200A	0400A	0600A	0700A	0900A
7.5	1005	0362 B	....	....	....	....	....	....	....	....	....	....
10	1006	0363	0561	0770	0957	1157	1357	0200B	0400B	0600B	0700B	0900B
15	1007	0364	....	0771	....	....	....	0200R	....	....	....	....
20	1008	0364 B	....	....	....	....	....	....	....	....	....	....
25	1009	0365	0562	0772	0958	1158	1358	0200C	0400C	0601	0701	0901
50	1010	0366	0563	0773	0959	1159	1359	0200D	0400D	0602	0702	0902
75	1011	0367	0564	....	....	....	....	0200E	0400E	0603	0703	0903
100	1012	0368	0565	0774	0960	1160	1360	0200F	0400F	0604	0704	0904
125	....	....	....	....	....	....	....	....	....	0604B	0704B	....
150	1013	0369	0566	....	....	....	....	0200G	0400 G	0605	0705	0905
200	1014	0370	0567	0774 B	....	....	....	0200 H	0400 H	....	....	....
250	1015	0371	0568	0775	0960 B	1160 B	1360 B	0201	0401	0606	0706	0906
300	1016	0371 B	0568 B	0775 B	....	....	....	....	....	....	....	....
350	1017	....	....	....	....	....	....	....	....	....	....	....
400	1018	0371 C	0568 C	0775 C	....	....	....	....	....	....	....	....
500	1019	0372	0569	0776	0961	1161	1361	0202	0402	0607	0707	0907
600	1020	....	....	....	....	....	....	....	....	....	....	....
750	1021	0373	0570	0777	....	....	....	0203	0403	0608	0708	0908
800	1022	0374	0571	0777 B	....	....	....	0204	0404	....	....	....
1000	1023	0375	0572	0778	0962	1162	1362	0205	0405	0609	0709	0909
1250	1024	0375 B	0572 B	0778 B	....	....	....	....	....	....	....	....
1500	1025	0376	0573	0779	0962 B	1162 B	1362 B	0206	0406	0610	0710	0910
2000	1026	0377	0574	0780	....	....	....	0207	0407	0611	0711	0911
2250	1027	0377 B	0574 B	0780 B	....	....	....	....	....	....	....	....
2500	1028	0378	0575	0781	0963	1163	1363	0208	0408	0612	0712	0912
3000	1029	0379	0576	0781 B	....	....	....	0209	0409	0613	0713	0913
3500	1030	0380	0576B	0782	....	....	....	0210	....	....	....	....
4000	1031	0381	0577	0782 B	....	....	....	0211	0410	....	....	....
4500	1032	0381 B	0577 B	0782 C	....	....	....	....	....	....	....	....
5000	1033	0382	0578	0783	0964	1164	1364	0212	0411	0614	0714	0914
6000	1034	0383	0578 B	0783 B	....	....	....	0213	....	....	....	....
7000	1035	0383 B	0578 C	0783 C	....	....	....	....	....	....	....	....
7500	1036	0384	0579	0784	....	....	....	0214	0412	0615	0715	0915
8000	1037	0384 B	0580	0784 B	....	....	....	....	0413	....	....	....
8500	1038	....	....	....	....	....	....	....	....	....	....	....
9000	1039	0384 C	0580 B	0784 C	....	....	....	....	....	....	....	....
10K	1040	0385	0581	0785	0965	1165	1365	0215	0414	0616	0716	0916
12K	....	0386	0582	0785 B	....	....	....	0216	0415	....	....	....
15K	....	0387	0583	0786	0966	1166	1366	0217	0416	0617	0717	0917
20K	....	0388	0584	0787	0967	1167	1367	0218	0417	0618	0718	0918
25K	....	0389	0585	0788	0968	1168	1368	0219	0418	0619	0719	0919
30K	....	....	0586	0789	0969	1169	1369	0220	....	0620	0720	0920
35K	....	....	....	0790	....	....	....	0221	0419	....	....	....
40K	....	....	0587	0791	0970	1170	1370	0222	....	0621	0721	0921
45K	....	....	....	0792	....	....	....	....	....	....	....	....
50K	....	....	0588	0793	0971	1171	1371	0224	0420	0622	0722	0922
60K	....	....	0589	0794	....	....	....	0225	....	0623	0723	0923
70K	....	....	....	....	....	....	....	0226	....	....	....	....
75K	....	....	....	....	0972	1172	1372	....	0421	0624	0724	0924
80K	....	....	0590	0795	....	....	....	0227	....	....	....	....
100K	....	....	0591	0796	0973	1173	1373	0229	0422	0625	0725	0925

Fixed Resistor Type 270, 50 Watt Only

Ohms	No.	Ohms	No.	Ohms	No.	Ohms	No.	Ohms	No.
125K	0423	150K	0424	175K	0425	200K	0426	250K	0428

FIXED 12-WATT NO. 270-12•

Limited space prevents full listing. Write for details, stock values.

Values, Ohms	Net Each, Lots of					
	1-9	10-49	50-99	100-249	250-499	500 Up
.51	$1.05	$0.89	$0.74	$0.58	$0.47	$0.44
1-1K	.74	.63	.52	.41	.33	.31
1.2K-4.7K	.79	.67	.55	.43	.36	.33
4.6K-10K	.89	.76	.62	.49	.40	.37
12K-18K	1.05	.89	.74	.58	.47	.44
22K-39K	1.10	.94	.77	.61	.50	.46
47K, 51K	1.20	1.02	.84	.66	.54	.50

DIVIDOHM® ADJUSTABLE 12-WATT NO. 210-12•

1-1K	$1.50	$1.28	$1.05	$0.83	$0.68	$0.63
1.25K-5K	1.55	1.32	1.09	.85	.70	.65
6K-10K	1.70	1.45	1.19	.94	.77	.71

FIXED 25-WATT NO. 270-25

Core, 2" x 9/16"; with No. 9 brackets. Mounting centers 2¾".

1-1K	$0.92	$0.78	$0.64	$0.51	$0.41	$0.39
1.5K-5K	.95	.81	.67	.52	.43	.40
6K-10K	1.15	.98	.81	.63	.52	.48
12K-20K	1.20	1.02	.84	.66	.54	.50
25K-40K	1.30	1.11	.91	.72	.59	.55
50K, 60K	1.55	1.32	1.09	.85	.70	.65
70K 80K	1.80	1.53	1.26	.99	.81	.76
100K	2.05	1.74	1.44	1.13	.92	.86

DIVIDOHM ADJUSTABLE 25-WATT NO. 210-25

Core, 2" x 9/16"; with No. 9 brackets. Mounting centers, 2¾".

1-1K	$1.65	$1.40	$1.16	$0.91	$0.74	$0.69
1.25K-5K	1.70	1.45	1.19	.94	.77	.71
6K-10K	1.80	1.53	1.26	.99	.81	.76
12K-20K	1.90	1.62	1.33	1.05	.86	.80
25K	2.05	1.74	1.44	1.13	.92	.86

•Core, 1¾" x 5/16"; with No. 5 brackets; mtg. centers, 2 3/16".

FIXED 50-WATT NO. 270-50

Core, 4" x 9/16"; with No. 9 brackets. Mounting centers, 4¾".

Values, Ohms	Net Each, Lots of			
	1-9	10-49	50-99	100 Up
1	$1.95	$1.66	$1.37	$1.07
2-5000	1.45	1.23	1.02	.80
7500-10K	1.55	1.32	1.09	.85
12K-20K	1.70	1.45	1.19	.94
25K and 35K	1.95	1.66	1.37	1.07
50K	2.20	1.87	1.54	1.21
75K	2.50	2.13	1.75	1.38
100K	2.70	2.30	1.89	1.49
125K	3.25	2.76	2.28	1.79
150K	3.45	2.93	2.42	1.90
175K	3.60	3.06	2.52	1.98
200K	3.75	3.19	2.63	2.06
250K	4.10	3.49	2.87	2.26

ADJUSTABLE 50-WATT NO. 210-50

Core, brkt. and mtg. ctrs., same as above.

1	$2.80	$2.38	$1.96	$1.54
2-1000	2.20	1.87	1.54	1.21
1250-5000	2.25	1.91	1.58	1.24
6000-10K	2.30	1.96	1.61	1.27
12K-20K	2.40	2.04	1.68	1.32
25K-40K	2.70	2.30	1.89	1.49
50K and 60K	2.90	2.47	2.03	1.60
80K	3.25	2.76	2.28	1.79
100K	3.45	2.93	2.42	1.90

ADJUSTABLE 75-WATT NO. 210-75

Core, 6" x 9/16"; with No. 9 brackets. Mounting centers, 6¾".

1 and 2	$3.15	$2.68	$2.21	$1.73
3-5000	2.55	2.17	1.79	1.40
6000-10K	2.65	2.25	1.86	1.46
12K-20K	2.80	2.38	1.96	1.54
25K-40K	3.00	2.55	2.10	1.65
45K-60K	3.35	2.85	2.35	1.84
80K	3.65	3.10	2.56	2.01
100K	3.85	3.27	2.70	2.12

FIXED 100-WATT NO. 270-100

Core, 6½" x ¾"; with No. 12 brackets.

1-3	$2.80	$2.38	$1.96	$1.54
4-1000	2.00	1.70	1.40	1.10
1500-5000	2.05	1.74	1.44	1.13
7500 and 10K	2.20	1.87	1.54	1.21
15K and 20K	2.35	2.00	1.65	1.29
25K-40K	2.70	2.30	1.89	1.49
50K and 60K	2.80	2.38	1.96	1.54
75K	3.05	2.59	2.14	1.68
100K	3.45	2.93	2.42	1.90

ADJUSTABLE 100-WATT NO. 210-100

Core, 6½" x ¾"; with No. 12 brackets. Mounting centers, 7⅜".

1-3	$3.60	$3.06	$2.52	$1.98
4-1000	2.80	2.38	1.96	1.54
1500-5000	2.85	2.42	2.00	1.57
10K	3.05	2.59	2.14	1.68
15K and 20K	3.20	2.72	2.24	1.76
25K-40K	3.55	3.02	2.49	1.95
50K	3.65	3.10	2.56	2.01
75K	3.95	3.36	2.77	2.17
100K	4.35	3.70	3.05	2.39

FIXED (270-175) AND ADJUSTABLE (210-175) 175-WATT

Core, 8½" x 1⅛"; with No. 18 brackets. Mtg. centers, 9⅜".

Values, Ohms	Fixed, Net Ea., Lots				Adjustable, Net Ea., Lots			
	1-9	10-49	50-99	100 Up	1-9	10-49	50-99	100 Up
1-5	$4.20	$3.57	$2.94	$2.31	$5.35	$4.55	$3.75	$2.94
10	2.80	2.38	1.96	1.54	4.15	3.53	2.91	2.28
25-1K	3.00	2.55	2.10	1.65	4.15	3.53	2.91	2.28
1.5K-5K	3.10	2.64	2.17	1.71	4.20	3.57	2.94	2.31
7.5K, 10K	3.35	2.85	2.35	1.84	4.40	3.74	3.08	2.42
15K, 20K	3.50	2.98	2.45	1.93	4.70	4.00	3.29	2.59
25K-40K	3.65	3.10	2.56	2.01	4.85	4.12	3.40	2.67
50K, 60K	3.75	3.19	2.63	2.06	4.95	4.21	3.47	2.72
75K	4.00	3.40	2.80	2.20	5.20	4.42	3.64	2.86
100K	4.25	3.61	2.98	2.34	6.45	5.48	4.52	3.55

FIXED (270-225) AND ADJUSTABLE (210-225) 225-WATT

Core, 10½" x 1⅛"; with No. 18 brackets. Mtg. centers, 11⅜".

1-5	$4.70	$4.00	$3.29	$2.59	$6.00	$5.10	$4.20	$3.30
10-1K	3.30	2.81	2.31	1.82	4.60	3.91	3.22	2.53
1.5K-5K	3.35	2.85	2.35	1.84	4.70	4.00	3.29	2.59
7.5K, 10K	3.75	3.19	2.63	2.06	4.95	4.21	3.47	2.72
15K, 20K	3.80	3.23	2.66	2.09	4.95	4.21	3.47	2.72
25K-40K	4.05	3.44	2.84	2.23	5.30	4.51	3.71	2.92
50K, 60K	4.20	3.57	2.94	2.31	5.50	4.68	3.85	3.03
75K	4.55	3.87	3.19	2.50	5.70	4.85	3.99	3.14
100K	4.70	4.00	3.29	2.59	6.00	5.10	4.20	3.30

ADJUSTABLE LUGS

Core Dia.	Screwdriver Lug				Bakelite Knob Lug			
	No.*	Net*	No.†	Net*	No.*	Net*	No.†	Net*
5/16"	2115	21c	2116	50c	....	....	....	....
9/16"	2121	21c	2123	50c	2122	45c	2124	71c
¾"	2125	21c	2127	50c	2126	45c	2128	71c
1⅛"	2133	32c	2135	61c	2134	53c	2136	84c

*Standard. †Silver contact button. ***Larger quantities on request.***

OHMITE Series 99 Resistors

SERIES 99 MOLDED AXIAL LEAD VITREOUS ENAMELED RESISTORS

OHMITE
995-1A

All welded resistors with 1000 VAC insulation. They meet general requirements of specification MIL-R-26 for RW67, RW68 and RW69. Chip and break resistant, uniformly molded white vitreous enamel protects against moisture, salt spray and immersion. Vitrified markings resist high temperatures, solvents and abrasion. Can be mounted on component clips. **Tolerance:** ±5%, standard. **Size:** 1.5-watt, 0.422″ lg. x 0.125″ dia.; 2¼-watt, 0.375″ lg. x 0.188″ dia.; 3¼-watt, 0.547″ lg. x 0.203″ dia.; 5-watt, 0.938″ lg. x 0.203″ dia.; 11-watt, 1.781″ lg. x 0.312″ dia. Tinned leads 1½″ lg., #20 AWG except 1-watt, #24 AWG.

STYLE 995-1A 1.5-WATT AND STYLE 995-2A 2¼-WATT

Ohms	Stock Number	
	1.5-Watt	2¼-Watt
1.0	4030	3860
1.1	4031	3861
1.2	4032	3862
1.3	4033	3863
1.5	4034	3864
1.6	4035	3865
1.8	4036	3866
2.0	4037	3867
2.2	4038	3868
2.4	4039	3869
2.7	4041	3871
3.0	4042	3872
3.3	4043	3873
3.6	4044	3874
3.9	4045	3875
4.0	4046	3876
4.3	4047	3877
4.7	4048	3878
5.0	4049	3879
5.1	4050	3880
5.6	4051	3881
6.2	4053	3883
6.8	4054	3884
7.5	4056	3886
8.2	4058	3888
9.1	4060	3890
10	4061	3891
11	4062	3892
12	4063	3893
13	4064	3894
15	4065	3895
16	4066	3896
18	4067	3897
20	4068	3898
22	4069	3899
24	4070	3900
25	4071	3901
27	4072	3902
30	4073	3903
33	4074	3904
35	4074A	3905
36	4075	3906
39	4076	3907
40	4077	3908
43	4078	3909
47	4079	3910
50	4080	3911
51	4081	3912
56	4082	3913
62	4084	3915
68	4085	3916
75	4087	3918
82	4089	3920
91	4091	3922
100	4092	3923
110	4093	3924
120	4094	3925
130	4095	3926
150	4096	3927
160	4097	3928
180	4098	3929
200	4099	3930
220	4100	3931
240	4101	3932
250	4102	3933
270	4103	3934
300	4104	3935
330	4105	3936
350	4105A	3937
360	4106	3938
390	4107	3939
400	4108	3940
430	4109	3941
450	4109A	3942
470	4110	3943
500	4111	3944
510	4112	3945
560	4113	3946
600	4114	3947
620	4115	3948
680	4116	3949
700	4117	3950
750	4118	3951
800	4119	3952
820	4120	3953
900	4121	3954
910	4122	3955
1000	4123	3956
1100	4124	3957
1200	4125	3958
1300	4126	3959
1400	4126A	3960
1500	4127	3961
1600	4128	3962
1800	4129	3963
2000	4130	3964
2200	4131	3965
2400	4132	3966
2500	4133	3967
2700	4134	3968
3000	4135	3969

STYLE 995-10A 11-WATT

Ohms	Stock No.
1.0	4730
1.1	4731
1.2	4732
1.3	4733
1.5	4734
1.6	4735
1.8	4736
2.0	4737
2.2	4738
2.4	4739
2.7	4741
3.0	4742
3.3	4743
3.6	4744
3.9	4745
4.0	4746
4.3	4747
4.7	4748
5.0	4749
5.1	4750
5.6	4751
6.2	4753
6.8	4754
7.5	4756
8.2	4758
9.1	4760
10	4761
11	4762
12	4763
13	4764
15	4765
16	4766
18	4767
20	4768
22	4769
24	4770
25	4771
27	4772
30	4773
33	4774
35	4774A
36	4775
39	4776
40	4777
43	4778
47	4779
50	4780
51	4781
56	4782
62	4784
68	4785
75	4787
82	4789
91	4791
100	4792
110	4793
120	4794
130	4795
150	4796
160	4797
180	4798
200	4799
220	4800
240	4801
250	4802
270	4803
300	4804
330	4805
350	4805A
360	4806
390	4807
400	4808
430	4809
450	4809A
470	4810
500	4811
510	4812
560	4813
600	4814
620	4815
680	4816
700	4817
750	4818
800	4819
820	4820
900	4821
910	4822
1000	4823
1100	4824
1200	4825
1300	4826
1400	4826A
1500	4827
1600	4828
1800	4829
2000	4830
2200	4831
2400	4832
2500	4833
2700	4834
3000	4835
3300	4836
3500	4836A
3600	4837
3900	4838
4000	4839
4300	4840
4500	4840A
4700	4841
5000	4842
5100	4843
5600	4844
6000	4845
6200	4846
6800	4847
7000	4848
7500	4849
8000	4850
8200	4851
9000	4852
9100	4853
10,000	4854
11,000	4855
12,000	4856
13,000	4857
14,000	4857B
15,000	4858
16,000	4859A
17,000	4859C
18,000	4860
20,000	4861
22,000	4862
24,000	4863
25,000	4864
27,000	4865
30,000	4866
33,000	4867
35,000	4867A
36,000	4868
39,000	4869
40,000	4870
43,000	4871
45,000	4871A
47,000	4872
50,000	4873
51,000	4874

STYLE 995-3A 3¼-WATT AND STYLE 995-5B 5-WATT

Ohms	Stock Number	
	3¼-Watt	5-Watt
1.0	4330	4530
1.1	4331	4531
1.2	4332	4532
1.3	4333	4533
1.5	4334	4534
1.6	4335	4535
1.8	4336	4536
2.0	4337	4537
2.2	4338	4538
2.4	4339	4539
2.7	4341	4541
3.0	4342	4542
3.3	4343	4543
3.6	4344	4544
3.9	4345	4545
4.0	4346	4546
4.3	4347	4547
4.7	4348	4548
5.0	4349	4549
5.1	4350	4550
5.6	4351	4551
6.2	4353	4553
6.8	4354	4554
7.5	4356	4556
8.2	4358	4558
9.1	4360	4560
10	4361	4561
11	4362	4562
12	4363	4563
13	4364	4564
15	4365	4565
16	4366	4566
18	4367	4567
20	4368	4568
22	4369	4569
24	4370	4570
25	4371	4571
27	4372	4572
30	4373	4573
33	4374	4574
35	4374A	4574A
36	4375	4575
39	4376	4576
40	4377	4577
43	4378	4578
47	4379	4579
50	4380	4580
51	4381	4581
56	4382	4582
62	4384	4584
68	4385	4585
75	4387	4587
82	4389	4589
91	4391	4591
100	4392	4592
110	4393	4593
120	4394	4594
130	4395	4595
150	4396	4596
160	4397	4597
180	4398	4598
200	4399	4599
220	4400	4600
240	4401	4601
250	4402	4602
270	4403	4603
300	4404	4604
330	4405	4605
350	4405A	4605A
360	4406	4606
390	4407	4607
400	4408	4608
430	4409	4609
450	4409A	4609A
470	4410	4610
500	4411	4611
510	4412	4612
560	4413	4613
600	4414	4614
620	4415	4615
680	4416	4616
700	4417	4617
750	4418	4618
800	4419	4619
820	4420	4620
900	4421	4621
910	4422	4622
1000	4423	4623
1100	4424	4624
1200	4425	4625
1300	4426	4626
1400	4426A	4626A
1500	4427	4627
1600	4428	4628
1800	4429	4629
2000	4430	4630
2200	4431	4631
2400	4432	4632
2500	4433	4633
2700	4434	4634
3000	4435	4635
3300	4436	4636
3500	4436A	4636A
3600	4437	4637
3900	4438	4638
4000	4439	4639
4300	4440	4640
4500	4440A	4640A
4700	4441	4641
5000	4442	4642
5100	4443	4643
5600	4444	4644
6000	4445	4645
6200	4446	4646
6800	4447	4647
7000	4448	4648
7500	4449	4649
8000	4450	4650
8200	4451	4651
9000	4452	4652
9100	4453	4653
10,000	4454	4654
11,000	....	4655
12,000	....	4656
13,000	....	4657
14,000	....	4657A
15,000	....	4658
16,000	....	4659
17,000	....	4659B
18,000	....	4660
20,000	....	4661
22,000	....	4662
24,000	....	4663
25,000	....	4664

PRICING

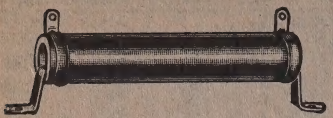
Style 995-1A 1.5-Watt

Values, Ohms*	Net Each, Lots of					
	1-9	10-49	50-99	100-249	250-499	500 Up
1–1K	$0.79	$0.67	$0.55	$0.43	$0.36	$0.33
1.1K–3K	.82	.70	.57	.45	.37	.34
Style 995-2A 2¼-Watt						
1–1K	$0.74	$0.63	$0.52	$0.41	$0.33	$0.31
1.1K–3K	.79	.67	.55	.43	.36	.33
Style 995-3A 3¼-Watt						
1–1K	$0.68	$0.58	$0.48	$0.37	$0.31	$0.29
1.1K–5K	.74	.63	.52	.41	.33	.31
5.1K–10K	.76	.65	.53	.42	.34	.32
Style 995-5B 5-Watt						
1–1K	$0.74	$0.63	$0.52	$0.41	$0.33	$0.31
1.1K–5K	.76	.65	.53	.42	.34	.32
5.1K–10K	.84	.71	.59	.46	.38	.35
11K–20K	.92	.78	.64	.51	.41	.39
22K–25K	1.05	.89	.74	.58	.47	.44
Style 995-10A 11-Watt						
1–1K	$0.79	$0.67	$0.55	$0.43	$0.36	$0.33
1.1K–5K	.89	.76	.62	.49	.40	.37
5.1K–10K	1.00	.85	.70	.55	.45	.42
11K–20K	1.10	.94	.77	.61	.50	.46
22K–40K	1.15	.98	.81	.63	.52	.48
43K–51K	1.30	1.11	.91	.72	.59	.55

***Restricted to those values shown in the table of stock numbers.**

Clarostat Vitreous-Enamel Resistors

GREENOHM V™ FIXED POWER RESISTORS



Vitreous enamel, wire-wound power resistors are engineered to meet or exceed MIL-R-26 specifications. Wire windings are finest grade resistance alloy. Designed for utmost reliability and stability under adverse conditions. Teal green enamel finish withstands overheating without peeling or cracking. Tolerance, ±5% except values under 1 ohm, ±10%. VPR types (up to 20 watts) have wire lead and lug terminals, illustrated at left. VP and VK types (25 watts and up) have lug terminals, and mounting bracket. **Core Size:** VPR-5-F, 1″ x 5/16″ dia.; VPR-10-F, 1¾″ x 5/16″ dia.; VPR-20-H, 2″ x 7/16″ dia.; VP-25-K 2″ x 9/16″ dia.; VP-50-K, 4″ x 9/16″ dia.; VK-100-N, 6½″ x ¾″ dia.; VK-160-W, 8½″ x 1⅛″ dia.; VK-200-W, 10½″ x 1⅛″ dia.

STOCK VALUES—WITH WIRE LEAD AND LUG TERMINALS

8-WATT SERIES VPR-5-F

Ohms	Ohms	Ohms	Ohms
1	50	750	4500
1.5	75	800	5000
2	100	900	6000
3	125	1000	7000
4	150	1100	7500
5	200	1200	8000
7.5	225	1250	9000
10	250	1500	10K
12	300	1750	12.5K
15	350	2000	15K
20	400	2250	17.5K
25	450	2500	20K
30	500	3000	22.5K
35	600	3500	25K
40	700	4000	

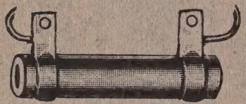
12-WATT SERIES VPR-10-F

Ohms	Ohms	Ohms	Ohms	Ohms
0.4	30	500	3000	13.5K
1	35	600	3500	14.3K
1.2	40	700	4000	15K
1.3	50	750	4500	16K
1.5	75	800	5000	17.5K
2	100	900	6000	18K
3	125	1000	7000	20K
4	150	1100	7500	22.5K
5	200	1200	8000	25K
7.5	225	1250	8500	30K
10	250	1500	9000	35K
12	300	1750	10K	40K
15	350	2000	11K	45K
20	400	2250	12K	50K
25	450	2500	12.5K	

20-WATT SERIES VPR-20-H

Ohms	Ohms	Ohms	Ohms	Ohms
0.4	350	1850	7500	55K
0.6	400	2000	8000	60K
0.8	500	2250	9000	65K
5	650	2400	10K	70K
10	700	2500	12.5K	75K
25	750	2750	15K	80K
50	800	3000	20K	85K
75	850	3500	25K	90K
100	1000	4000	30K	95K
150	1200	4500	35K	100K
200	1250	5000	40K	
250	1500	6000	45K	
300	1750	7000	50K	

STOCK VALUES—WITH LUG TERMINALS AND MOUNTING BRACKET



25-WATT SERIES VP-25-K

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	800	5000	30K
2	75	1000	6000	35K
3	100	1500	7500	40K
4	150	2000	10K	50K
5	200	2500	12K	60K
10	250	3000	15K	70K
15	500	3500	20K	80K
25	750	4000	25K	100K

50-WATT SERIES VP-50-K

Ohms	Ohms	Ohms	Ohms	Ohms
1	100	1000	7500	50K
2	150	1250	8000	75K
3	200	1500	10K	100K
4	250	2000	12K	125K
5	300	2500	15K	150K
10	400	3000	20K	175K
25	500	4000	25K	200K
50	750	5000	30K	225K
75	800	6000	35K	250K

100-WATT SERIES VK-100-N

Ohms	Ohms	Ohms	Ohms	Ohms
1	75	750	7500	60K
2	100	1000	10K	75K
3	125	1500	15K	100K
4	150	2000	20K	200K
5	200	2500	25K	
10	250	3000	30K	
25	300	4000	40K	
50	500	5000	50K	

160-WATT SERIES VK-160-W

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	750	7500	50K
2	75	1000	10K	60K
3	100	1500	15K	75K
4	125	2000	20K	100K
5	150	2500	25K	
10	250	3000	30K	
25	500	5000	40K	

200-WATT SERIES VK-200-W

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	750	7500	40K
2	75	1000	10K	50K
3	100	1500	12K	60K
4	150	2000	15K	75K
5	200	2500	20K	100K
10	250	3000	25K	
25	500	5000	30K	

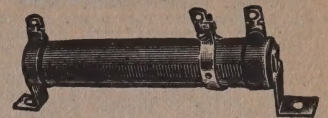
"GREENOHM V" FIXED RESISTOR PRICES

Series	Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-99	100-249	250-499	500-999
VPR-5-F **8-Watt**	1.0–1000	$0.51	$0.44	$0.35	$0.288	$0.255	$0.237
	1100–5000	.54	.47	.38	.305	.27	.251
	6000–10K	.57	.49	.40	.321	.284	.264
	12.5K–20K	.64	.56	.45	.362	.32	.298
	22.5K–25K	.73	.63	.51	.413	.364	.339
VPR-10-F **12-Watt**	0.4	.89	.78	.62	.505	.447	.416
	1.0–1000	.56	.49	.39	.316	.279	.261
	1100–5000	.60	.52	.42	.337	.298	.277
	6000–10K	.68	.60	.48	.387	.342	.319
	11K–20K	.77	.67	.54	.438	.387	.36
	22.5K–35K	.81	.71	.57	.46	.406	.378
	40K–50K	.91	.79	.63	.515	.455	.424
VPR-20-H **20-Watt**	0.4–0.8	.93	.81	.65	.525	.465	.433
	5–1000	.64	.55	.44	.359	.317	.295
	1200–5000	.65	.57	.46	.37	.327	.305
	6000–10K	.77	.67	.54	.439	.388	.361
	12.5K–20K	.80	.69	.55	.449	.397	.37
	25K–40K	.93	.81	.65	.524	.464	.431
	45K–60K	1.07	.94	.75	.608	.538	.501
	65K–75K	1.13	.99	.79	.641	.567	.528
	80K–100K	1.22	1.06	.85	.688	.608	.566
VP-25-K **25-Watt**	1.0–1000	.67	.59	.47	.381	.337	.314
	1500–5000	.70	.61	.49	.397	.351	.327
	6000–10K	.80	.69	.55	.449	.397	.37
	12K–20K	.84	.73	.59	.476	.421	.392
	25K–40K	.97	.85	.68	.549	.486	.453
	50K–60K	1.13	.98	.79	.64	.566	.526
	70K	1.33	1.16	.92	.751	.665	.619
	80K–100K	1.54	1.34	1.07	.874	.773	.719
VP-50-K **50-Watt**	1.0–1000	1.04	.90	.72	.587	.518	.482
	1250–5000	1.06	.93	.74	.602	.532	.496
	6000–10K	1.15	1.00	.80	.649	.574	.535
	12K–20K	1.26	1.10	.88	.713	.631	.587
	25K–35K	1.46	1.27	1.01	.823	.728	.677
	50K	1.62	1.41	1.12	.916	.811	.754
	75K	1.84	1.60	1.28	1.04	.921	.857
	100K	2.00	1.73	1.39	1.13	.999	.929
	125K	2.29	1.99	1.59	1.29	1.15	1.06
	150K	2.56	2.23	1.79	1.45	1.28	1.19
	175K	2.84	2.47	1.99	1.61	1.43	1.32
	200K	2.99	2.60	2.08	1.69	1.50	1.40
	225K–250K	3.19	2.77	2.22	1.81	1.60	1.48
VK-100-N **100-Watt**	1.0–1000	1.61	1.40	1.12	.91	.81	....
	1500–5000	1.73	1.50	1.20	.98	.86	....
	7500–10K	1.84	1.60	1.28	1.04	.92	....
	15K–20K	1.96	1.70	1.36	1.11	.98	....
	25K–60K	2.07	1.80	1.44	1.17	1.04	....
	75K	2.19	1.90	1.52	1.24	1.09	....
	100K	2.44	2.12	1.70	1.38	1.22	....
	200K	4.02	3.48	2.78	2.26	2.00	....
VK-160-W **160-Watt**	1.0–1000	2.53	2.20	1.76	1.43	1.27	....
	1500–5000	2.58	2.24	1.79	1.46	1.29	....
	7500–10K	2.83	2.46	1.97	1.60	1.41	....
	15K–20K	3.06	2.66	2.13	1.73	1.53	....
	25K–60K	3.22	2.80	2.24	1.82	1.61	....
	75K	3.34	2.90	2.32	1.89	1.67	....
	100K	3.45	3.00	2.40	1.95	1.73	....
VK-200-W **200-Watt**	1.0–1000	2.76	2.40	1.92	1.56	1.38	....
	1500–5000	2.81	2.44	1.95	1.59	1.40	....
	7500–10K	2.94	2.56	2.05	1.66	1.47	....
	12K–20K	3.05	2.66	2.13	1.73	1.53	....
	25K–60K	3.17	2.76	2.21	1.79	1.59	....
	75K	3.34	2.90	2.32	1.89	1.67	....
	100K	3.52	3.06	2.45	1.99	1.76	....

Clarostat Vitreous-Enamel Resistors

GREENOHM V™ ADJUSTABLE POWER RESISTORS

STOCK VALUES



Same construction as Greenohm V fixed resistors. Tolerance, ±10%. **Core Size:** VP-10-FA, 1¾″ x ⁵⁄₁₆″ dia.; VP-25-KA, 2″ x ⁹⁄₁₆″ dia.; VP-50-KA, 4″ x ⁹⁄₁₆″ dia.; VP-75-KA, 6″ x ⁹⁄₁₆″ dia.; VK-100-NA, 6½″ x ¾″ dia.; VK-160-WA, 8½″ x 1⅛″ dia.; VK-200-WA, 10½″ x 1⅛″ dia.

12-WATT SERIES VP-10-FA

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	500	2500	8000
2	75	600	3000	8500
3	100	750	3500	9000
5	150	800	4000	10K
7.5	200	1000	4500	
10	250	1250	5000	
15	300	1500	6000	
20	350	2000	7000	
25	400	2250	7500	

25-WATT SERIES VP-25-KA

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	750	3500	9000
2	75	800	4000	10K
3	100	1000	4500	12K
5	150	1250	5000	15K
7.5	200	1500	6000	20K
10	250	2000	7000	25K
15	300	2250	7200	
20	400	2500	7500	
25	500	3000	8000	

50-WATT SERIES VP-50-KA

Ohms	Ohms	Ohms	Ohms	Ohms
1	100	1250	6000	25K
2	150	1500	7000	30K
3	200	2000	7200	35K
4	250	2250	7500	40K
5	300	2500	8000	50K
10	400	3000	9000	60K
20	500	3500	10K	75K
25	750	4000	12K	80K
50	800	4500	15K	100K
75	1000	5000	20K	

75-WATT SERIES VP-75-KA

Ohms	Ohms	Ohms	Ohms	Ohms
1	200	2000	7200	35K
2	250	2250	7500	40K
3	300	2500	8000	45K
4	400	3000	9000	50K
5	500	3500	10K	60K
10	750	4000	12K	80K
15	800	4500	15K	100K
25	1000	5000	20K	
50	1250	6000	25K	
100	1500	7000	30K	

100-WATT SERIES VK-100-NA

Ohms	Ohms	Ohms	Ohms	Ohms
1	25	400	3500	40K
2	50	500	5000	50K
3	100	750	10K	75K
4	150	1000	15K	100K
5	200	1500	20K	
10	250	2000	25K	
15	300	2500	30K	

160-WATT SERIES VK-160-WA

Ohms	Ohms	Ohms	Ohms	Ohms
1	10	250	5000	30K
2	25	500	10K	40K
3	50	1000	15K	50K
4	100	1500	20K	75K
5	150	2500	25K	100K

200-WATT SERIES VK-200-WA

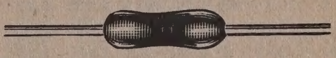
Ohms	Ohms	Ohms	Ohms	Ohms
1	20	200	2500	30K
2	25	250	5000	40K
3	50	300	10K	50K
4	75	500	15K	75K
5	100	1000	20K	100K
10	150	1500	25K	

ADJUSTABLE POWER RESISTOR PRICES

Series	Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-99	100-249	250-499	500-999
VP-10-FA **12-Watt**	1.0–1000	$0.73	$0.66	$0.57	$0.50	$0.47	$0.45
	1250–5000	.77	.69	.60	.52	.48	.46
	6000–10K	.85	.77	.65	.57	.53	.50
VP-25-KA **25-Watt**	1.0–1000	.82	.74	.62	.531	.487	.464
	1250–5000	.85	.76	.64	.547	.501	.477
	6000–10K	.95	.84	.70	.599	.547	.52
	12K–20K	.99	.88	.74	.626	.571	.542
	25K	1.12	1.00	.83	.699	.636	.603
VP-50-KA **50-Watt**	1.0–1000	1.24	1.10	.92	.787	.718	.682
	1250–5000	1.26	1.13	.94	.802	.732	.696
	6000–10K	1.35	1.20	1.00	.849	.774	.735
	12K–20K	1.46	1.30	1.08	.913	.831	.787
	25K–40K	1.66	1.47	1.21	1.02	.928	.877
	50K–60K	1.82	1.61	1.32	1.12	1.01	.954
	75K–80K	2.04	1.80	1.48	1.24	1.12	1.06
	100K	2.22	1.93	1.59	1.33	1.20	1.13
VP-75-KA **75-Watt**	1.0–1000	1.75	1.55	1.29	1.10	1.00	....
	1250–5000	1.79	1.59	1.32	1.12	1.02	....
	6000–10K	1.84	1.63	1.35	1.15	1.04	....
	12K–20K	1.88	1.67	1.39	1.17	1.07	....
	25K–60K	2.09	1.85	1.53	1.29	1.17	....
	80K–100K	2.37	2.09	1.72	1.45	1.31	....
VK-100-NA **100-Watt**	1.0–1000	1.91	1.70	1.42	1.21	1.11	....
	1500–5000	2.03	1.80	1.50	1.28	1.16	....
	10K	2.14	1.90	1.58	1.34	1.22	....
	15K–20K	2.26	2.00	1.66	1.41	1.28	....
	25K–50K	2.37	2.10	1.74	1.47	1.34	....
	75K	2.49	2.20	1.82	1.54	1.39	....
	100K	2.74	2.42	2.00	1.68	1.52	....
VK-160-WA **160-Watt**	1.0–1000	2.88	2.55	2.11	1.78	1.62	....
	1500–5000	2.93	2.59	2.14	1.81	1.64	....
	10K	3.18	2.81	2.32	1.95	1.76	....
	15K–20K	3.41	3.05	2.48	2.08	1.88	....
	25K–50K	3.57	3.15	2.58	2.17	1.96	....
	75K	3.69	3.25	2.67	2.24	2.02	....
	100K	3.80	3.35	2.75	2.30	2.08	....
VK-200-WA **200-Watt**	1.0–1000	3.26	2.90	2.42	2.06	1.88	....
	1500–5000	3.31	2.94	2.45	2.09	1.90	....
	10K	3.44	3.06	2.55	2.16	1.97	....
	15K–20K	3.55	3.16	2.63	2.23	2.03	....
	25K–50K	3.67	3.26	2.71	2.29	2.09	....
	75K	3.84	3.40	2.82	2.39	2.17	....
	100K	4.02	3.56	2.95	2.49	2.26	....

AXIAL LEAD VITREOUS RESISTORS

Ideal for printed circuit, terminal board, and point-to-point wiring applications. Space-saving design, due to elimination of mounting brackets and terminal lugs. Standard resistance tolerance, ±5%. Designed for critical applications, providing high stability and reliability under widely variable environmental conditions. Finished in vitreous shade of teal green. Available in three sizes: 3, 5 or 10 watts. **Size:** VC3D, ¼″ dia. x ½″ long; VC5E, ⅜″ dia. x 1″ long; VC10F, ⁷⁄₁₆″ dia. x 1⅞″ long. Leads 1½″ long, .032″ dia.



STOCK VALUES

Ohms	Ohms	Ohms	Ohms	Ohms
1	50	470	2500	12K*
1.5	56	500	2700	12.5K
2	68	560	3000	13.5K*
3	75	600	3300	15K
4	82	680	3500	16K*
5	100	700	3900	17.5K
7.5	120	750	4000	18K
10	125	800	4500	20K
12	150	820	4700	22K
15	180	900	5000	22.5K
18	200	1000	5600	25K
20	220	1100	6000	27K*
22	225	1200	6800	30K*
25	250	1250	7000	33K*
27	270	1300*	7500	35K*
30	300	1500	8000	39K*
33	330	1750	8200	40K*
35	350	1800	8500*	45K*
39	390	2000	9000	47K*
40	400	2200	10K	50K*
47	450	2250	11K*	

*Available in 10-watt series VC10F only.

PRICES

When ordering, specify resistance value desired from stock values shown at left.

Series	Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-99	100-249	250-499	500-999
VC3D **3-Watt**	1.0–100	$0.54	$0.46	$0.37	$0.30	$0.266	$0.247
	120–2500	.49	.43	.34	.276	.245	.228
	2700–5000	.56	.48	.39	.312	.276	.257
	5600–7500	.60	.52	.41	.34	.297	.277
	8000–10K	.70	.61	.49	.397	.351	.326
VC5E **5-Watt**	1.0–1000	.54	.46	.37	.30	.266	.247
	1100–5000	.56	.48	.39	.312	.276	.257
	5600–10K	.60	.52	.41	.34	.297	.277
	12.5K–15K	.69	.56	.44	.36	.319	.297
	17.5K–20K	.73	.63	.50	.409	.361	.336
	22K–25K	.96	.83	.66	.541	.478	.445
VC10F **10-Watt**	1.0–1000	.58	.50	.40	.33	.287	.267
	1100–5000	.64	.56	.44	.36	.319	.297
	5600–10K	.70	.61	.49	.397	.351	.327
	11K–20K	.80	.69	.56	.454	.401	.374
	22K–40K	.90	.79	.63	.51	.452	.42
	45K–50K	1.06	.92	.74	.60	.536	.494

DALE Wire-Wound Resistors

WIRE-WOUND PRECISION RESISTORS

RH

PH

RS, RLS

WWA

TYPE RH: ALUMINUM HOUSED

For applications with high power and precision tolerance requirements. Choice of six models, 5 through 250 watts. Complete welded construction, terminal to terminal. Thoroughly protected against moisture, salt spray, vibration and shock. Molded construction RH-5 through RH-50, all types have flat marking surface on top of housing for easy identification. Designed to utilize heat-sink effect of chassis. Screw mounts on chassis. Temperature Coefficient: ±20 ppm/° C, ±30 ppm/° C or ±50 ppm/° C depending on resistance value. Exceeds MIL-R-18546. **Suffix** (e.g., RH-50) **indicates wattage rating.**

STANDARD STOCK VALUES ±1%

Dale Type	Overall Size, In. Lg. x W. x H.	Resis. Range, Ohms, ±1%
RH-5†	.600x .334x .320	.1 to 24.5K
RH-10‡	.750x .420x .390	.01 to 47.1K
RH-25	1.062x .550x .546	.01 to 95.2K
RH-50	1.968x .630x .610	.01 to 273K
RH-100*	3.500x1.800x1.730	.1 to 50K
RH-250*	4.500x2.110x2.180	.1 to 75K

*Threaded terminals; all others, tinned Copperweld terminals. Rated at: †7.5 w; ‡12.5 w.

PRICES FOR RH-5 & RH-10

Resistance Ohms ±1% Tol.	Net Each, Lots of 1-24	25-49	50-99	100-249
.008–.012	$2.69	$2.43	$2.21	$2.03
.013–.025	2.61	2.34	2.13	1.95
.026–.046	2.59	2.25	2.09	1.92
.047–.099	2.61	2.34	2.13	1.95
.1–.49	2.69	2.43	2.21	2.03
.5–.99	2.59	2.25	2.09	1.92
1–1K	2.00	1.60	1.50	1.40
1.1K–5K	2.10	1.68	1.58	1.47
5.1K–10K	2.29	1.83	1.72	1.60
10.1K–12K	2.51	2.00	1.88	1.75
12.1K–15K	2.73	2.18	2.05	1.92
15.1K–25K	2.93	2.68	2.44	2.18
25.1K–40K	3.25	2.97	2.70	2.43
40.1K–47K	3.57	3.26	2.96	2.71

PRICES FOR RH-25

.010–.015	$2.83	$2.59	$2.36	$2.18
.016–.030	2.80	2.54	2.32	2.14
.031–.050	2.76	2.51	2.28	2.11
.051–.072	2.73	2.46	2.24	2.06
.073–.099	2.76	2.51	2.28	2.11
.1–.49	2.83	2.59	2.36	2.18
.5–.99	2.73	2.46	2.24	2.06
1–1K	2.00	1.60	1.50	1.40
1.1K–5K	2.10	1.68	1.58	1.47
5.1K–10K	2.29	1.83	1.72	1.60
10.1K–12K	2.51	2.00	1.88	1.75
12.1K–15K	2.73	2.18	2.05	1.92
15.1K–25K	2.93	2.68	2.44	2.18
25.1K–40K	3.25	2.97	2.70	2.43
40.1K–50K	3.57	3.26	2.96	2.71
50.1K–60K	3.90	3.55	3.21	2.84
60.1K–75K	4.24	3.86	3.47	3.09
75.1K–95.2K	4.67	4.24	3.82	3.44

PRICES FOR RH-50

.010–.015	$3.02	$2.77	$2.54	$2.36
.016–.035	2.98	2.73	2.51	2.33
.036–.050	2.95	2.68	2.45	2.27
.051–.075	2.91	2.65	2.43	2.25
.076–.099	2.88	2.62	2.40	2.22
.1–.49	2.95	2.68	2.45	2.27
.5–.99	2.91	2.65	2.43	2.25
1–5.9	2.73	2.48	2.20	2.02
6–1K	2.45	1.96	1.84	1.72
1.1K–5K	2.56	2.06	1.94	1.80
5.1K–10K	2.78	2.22	2.08	1.95
10.1K–20K	3.08	2.46	2.31	2.16
20.1K–55K	3.36	2.68	2.51	2.35
55.1K–75K	3.65	2.92	2.73	2.55
75.1K–100K	3.92	3.12	2.95	2.74
100.1K–125K	4.26	3.40	3.19	2.98
125.1K–150K	4.58	3.67	3.44	3.20
150.1K–175K	4.91	3.92	3.68	3.44
175.1K–225K	5.21	4.11	3.94	3.62
225.1K–273K	5.62	4.41	4.25	3.86

PRICES FOR RH-100 & RH-250

.1–.99	$12.32	$10.88	$10.15	$ 9.42
1–5	10.92	9.64	9.00	8.35
5.1–50	10.68	9.43	8.79	8.16
50.1–1K	9.88	8.71	8.13	7.55
1.1K–10K	10.53	9.30	8.67	8.05
10.1K–20K	11.38	10.05	9.37	8.70
20.1K–35K	12.05	10.64	9.92	9.22
35.1K–55K	12.63	11.16	10.40	9.67
55.1K–75K	13.26	11.70	10.92	10.15

TYPE PH: ALUMINUM HOUSED

Same features as RH types, except mounting is made in hole thru chassis. Finned style housing. Meets functional requirements of MIL-R-18546. **Suffix** (e.g., PH-25) **indicates rating in watts.**

TYPE PH (CONTINUED)

STANDARD STOCK VALUES ±1%

Dale Type	Overall Size, In. Lg. x Dia.	Resis. Range, Ohms, ±1%
PH-10-1*	.750 x .500	.1 to 47.1K
PH-25	1.595 x .875	.1 to 95.2K
PH-50	2.300 x 1.188	.1 to 75K
PH-100	2.970 x 1.750	.1 to 50K

*Tinned Copperweld® terminals; 180 alloy, all others. ®Copperweld Steel Corp. TM.

PRICES FOR PH-10-1

Resistance, Ohms ±1% Tol.	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.99	$4.04	$3.70	$3.36	$3.02
1–1K	2.00	1.60	1.50	1.40
1.1K–5K	2.10	1.68	1.58	1.47
5.1K–10K	2.29	1.83	1.72	1.60
10.1K–12K	2.51	2.01	1.88	1.75
12.1K–15K	2.73	2.18	2.05	1.92
15.1K–25K	2.94	2.68	2.44	2.08
25.1K–40K	3.25	2.97	2.70	2.43
40.1K–47K	3.67	3.26	2.96	2.71

PRICES FOR PH-25

.1–.99	$4.52	$4.15	$3.76	$3.38
1–1K	2.24	1.78	1.67	1.56
1.1K–5K	2.35	1.88	1.77	1.65
5.1K–10K	2.56	2.05	1.93	1.88
10.1K–12K	2.81	2.24	2.10	1.96
12.1K–15K	3.06	2.44	2.30	2.15
15.1K–25K	3.28	3.00	2.74	2.44
25.1K–40K	3.64	3.33	3.03	2.72
40.1K–50K	4.00	3.65	3.32	3.04
50.1K–60K	4.37	3.98	3.60	3.18
60.1K–75K	4.75	4.33	3.89	3.48
75.1K–95.2K	5.23	4.75	4.28	3.86

PRICES FOR PH-50

.1–.99	$12.75	$10.00	$9.26	$8.86
1–5	10.47	8.17	7.58	7.17
5.1–1K	8.35	6.56	6.06	5.72
1.1K–5K	8.78	6.85	6.36	6.01
5.1K–10K	9.19	7.19	6.66	6.29
10.1K–20K	9.75	7.68	7.09	6.70
20.1K–55K	10.18	7.98	7.40	6.99
55.1K–75K	10.64	8.34	7.62	7.31

PRICES FOR PH-100

.1–.99	$13.79	$12.18	$11.37	$10.55
1–5	12.23	10.79	10.08	9.35
5.1–50	11.96	10.56	9.81	9.14
50.1–1K	11.07	9.76	9.11	8.45
1.1K–10K	11.79	10.41	9.71	9.02
10.1K–20K	12.75	11.26	10.49	9.75
20.1K–35K	13.49	11.91	11.11	10.33
35.1K–50K	14.15	12.50	11.65	10.81

TYPE RS: SILICONE COATED (HIGH TEMPERATURE)

Designed to meet precision power requirements where space is at a premium. Outstanding silicone coating protects against moisture and salt spray; also maintains stable performance under other severe environmental conditions. Complete welded construction, from terminal to terminal. Meets or exceeds applicable MIL-R-26C and MIL-R-23379 requirements. Dielectric strength 500 VAC for ½ and ¼-watt types; 1000 VAC, all others. Temperature Coefficient: ±20 ppm/° C, ±30 ppm/° C or ±50 ppm/° C depending on resistance value. **Suffix** (e.g., RS-¼) **indicates rating in watts except as noted.**

STANDARD STOCK VALUES ±1%

Dale Type	Overall Size, In. Lg. x Dia.	Resis. Range, Ohms, ±1%
RS-¼	.250 x .078	1 to 3.4K
RS-½	.312 x .078	1 to 4.9K
RS-1A	.406 x .093	.1 to 10.4K
RS-1B	.531 x .093	.1 to 15K
RS-2*	.625 x .250	.1 to 47.1K
RS-2A	.812 x .188	.1 to 42.1K
RS-2B†	.562 x .188	.1 to 24.5K
RS-2C‡	.500 x .218	.1 to 32.3K
RS-5	.875 x .312	.1 to 95.2K
RS-7	1.218 x .312	.1 to 154K
RS-10	1.781 x .375	.1 to 273K

*4.0 watts. †3.0 watts. ‡2.5 watts.

PRICES FOR RS-¼, -½, -1A & -1B

Resistance Ohms ±1% Tol.	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.49	$2.18	$1.96	$1.74	$1.43
.5–.99	1.68	1.48	1.25	1.05
1.0–1K	1.08	.85	.80	.75
1.1K–4K	1.19	.95	.89	.83
4.1K–15K	1.36	1.06	1.01	.93

TYPE RS (CONTINUED)

PRICES FOR RS-2, -2A, -2B, -2C, -5, RS-7 AND RS-10

Resistance Ohms ±1% Tol.	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.49	$1.96	$1.76	$1.57	$1.29
.5–.99	1.51	1.33	1.13	.95
1.0–1K	.83	.65	.62	.57
1.1K–5K	.91	.73	.68	.63
5.1K–10K	.95	.75	.70	.65
10.1K–15K	.99	.78	.74	.69
15.1K–20K	1.03	.83	.77	.73
20.1K–40K	1.10	.87	.83	.76
40.1K–55K	1.18	.95	.88	.83
55.1K–75K	1.30	1.03	.97	.91
75.1K–100K	1.43	1.14	1.08	1.00
100.1K–125K	1.57	1.29	1.18	1.10
125.1K–150K	1.71	1.36	1.28	1.20
150.1K–175K	1.87	1.49	1.40	1.31
175.1K–225K	2.04	1.64	1.53	1.44
225.1K–273K	2.24	1.80	1.69	1.59

TYPE RLS: RADIAL LEAD

Same as RS Type, but radial leads. Available in 1–10 watt sizes and ranges equivalent to those shown for RS types above. **Prices on Request.**

TYPE WWA: BOBBIN

Epoxy molded for high stability and environmental protection. Completely welded construction. Available with solderable or weldable leads. Series includes subminiature models MWA-8 and MWA-10. Meet or exceed functional requirements of MIL-R-93.

STANDARD STOCK VALUES ±1%

Dale Type	W.	Size, In.* Lg. x Dia.	Resis. Range, Ohms, ±1%
MWA-8	.1	.250 x .078	1 to 100K
MWA-10	.125	.312 x .078	1 to 125K
WWA-13	.125	.375 x .125	1 to 300K
WWA-22	.15	.250 x .250	.1 to 350K

*Overall.

PRICES FOR MWA-8 AND MWA-10

Resistance, Ohms	Net Each, Lots of 1-9	10-24	25-99	100-499
1–1.3K	$0.97	$0.76	$0.65	$0.59
1,301–5K	1.27	.99	.85	.78
5,001–10K	1.29	1.00	.86	.79
10,001–25K	1.39	1.09	.93	.85
25,001–50K	1.56	1.21	1.03	.95
50,001–75K	1.79	1.39	1.18	1.06
75,001–100K	2.02	1.57	1.34	1.23
100,001–125K	2.24	1.74	1.49	1.37
125,001–150K	2.40	1.86	1.60	1.47
150,001–160K	2.46	1.92	1.64	1.50

PRICES FOR WWA-13

1–1.3K	$0.99	$0.77	$0.66	$0.61
1,301–5K	1.29	1.00	.86	.79
5,001–10K	1.31	1.01	.87	.80
10,001–25K	1.41	1.10	.94	.86
25,001–50K	1.49	1.16	1.00	.91
50,001–75K	1.59	1.24	1.06	.97
75,001–100K	1.79	1.40	1.20	1.10
100,001–125K	1.89	1.48	1.27	1.15
125,001–150K	1.99	1.56	1.33	1.21
150,001–175K	2.52	1.96	1.68	1.53
175,001–200K	2.68	1.86	1.79	1.64
200,001–250K	3.05	2.12	2.03	1.86
250,001–311K	3.43	2.37	2.28	2.09

PRICES FOR WWA-22

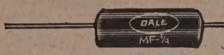
.1–.99	$2.02	$1.57	$1.34	$1.23
1–49.9	1.68	1.31	1.13	1.03
50–5K	1.54	1.20	1.03	.95
5,001–10K	1.62	1.27	1.08	.99
10,001–25K	1.71	1.33	1.15	1.05
25,001–50K	1.84	1.42	1.22	1.12
50,001–75K	1.96	1.51	1.30	1.20
75,001–100K	2.04	1.58	1.36	1.24
100,001–125K	2.14	1.67	1.42	1.31
125,001–150K	2.20	1.71	1.47	1.34
150,001–175K	2.31	1.79	1.53	1.40
175,001–200K	2.39	1.85	1.59	1.46
200,001–250K	2.56	1.99	1.71	1.57
250,001–300K	2.71	2.09	1.80	1.66
300,001–400K	3.17	2.46	2.12	1.94
400,001–500K	3.76	2.93	2.52	2.31
500,001–600K	4.94	3.84	3.29	3.02

All resistors listed have a standard tolerance of ±1%. Also available in following tolerances: ±0.05%, ±0.1%, ±0.25%, ±.5%, ±3% and ±5%. Prices on Request. **Additional WWA models available on request.**

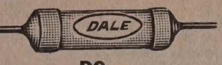
For MIL-Bell Values See Page 114

DALE Precision Resistors

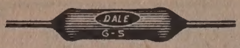
FILM AND WIRE-WOUND PRECISION RESISTORS



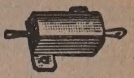
MF



DC



G



HG

PRECISION FILM RESISTORS

TYPE MF: MOLDED METAL FILM

Epoxy-molded-metal film resistor designed to meet a variety of military and commercial applications. Combines high stability with low noise and exceptional moisture protection. Features close tracking of controlled temperature coefficient. MF-50 offers precision performance in sub-miniature size. Has solder coated copper leads*. Meets or exceeds MIL-R-10509 (Char. C, D or E depending upon temperature coefficient required). **Temperature Range:** −65° C to +175° C. **Temperature Coefficient:** T-1, ±100 ppm/°C; T-2, ±50 ppm/° C; T-9, ±25 ppm/°C. **Tolerance:** ±1%; also available in ±.1%, ±.25% or ±.5%. **Suffix** (i.e., MF-⅛) **indicates wattage rating; MF-50, 1/20 W.**

STANDARD STOCK VALUES

Dale Type	Size, In. Lg. x Dia.	Maximum WVDC
MF-50	.150 x .065	200
MF-1/10	.260 x .093	200
MF-⅛	.406 x .135	300
MF-¼	.593 x .203	350
MFS-½	.730 x .250	500
MF-1	1.093 x .375	500
MF-2	2.188 x .375	750

PRICES AND STOCK VALUES ±1%

Dale Type	TC Code	Resis. Range, Ohms	Net Each, Lots 1-24	25-99	100-249
MF-50	T-0	24.9–100K	**$1.49**	**$0.54**	**$0.30**
	T-1	49.9–100K	**1.49**	**.54**	**.30**
	T-2	100–100K	**2.09**	**.76**	**.41**
	T-9	100–100K	**4.60**	**1.67**	**.85**
MF-1/10	T-0	10–301K	**1.05**	**.48**	**.24**
	T-1	30.1–301K	**1.05**	**.48**	**.24**
	T-2	30.1–301K	**1.44**	**.66**	**.32**
	T-9	30.1–301K	**1.77**	**1.07**	**.72**
MF-⅛ **MFF-⅛**	T-0	10–1 meg	**1.05**	**.48**	**.24**
	T-1	24.9–1 meg	**1.05**	**.48**	**.24**
	T-2	30.1–499K	**1.44**	**.66**	**.32**
	T-9	30.1–499K	**1.77**	**1.07**	**.72**
MF-¼ **MFF-¼**	T-0	10–2 meg	**1.05**	**.48**	**.24**
	T-1	24.9–2 meg	**1.05**	**.48**	**.24**
	T-2	30.1–1 meg	**1.44**	**.66**	**.32**
	T-9	30.1–1 meg	**1.77**	**1.07**	**.72**
MFS-½ **MFF-½**	T-0	10–2.49 meg	**1.05**	**.48**	**.24**
	T-1	24.9–2.49 meg	**1.05**	**.48**	**.24**
	T-2	24.9–1 meg	**1.44**	**.66**	**.32**
	T-9	24.9–1 meg	**1.77**	**1.07**	**.72**
MF-¾	T-0	10–2.49 meg	**1.43**	**.86**	**.52**
	T-1	24.9–2.49 meg	**1.43**	**.86**	**.52**
	T-2	100–1 meg	**1.91**	**1.14**	**.68**
	T-9	100–1 meg	**2.40**	**1.43**	**.86**
MF-1 **MFF-1**	T-0	10–5.11 meg	**1.38**	**.87**	**.68**
	T-1	24.9–4.02 meg	**1.38**	**.87**	**.68**
	T-2	49.9–2.61 meg	**2.15**	**1.23**	**.94**
	T-9	49.9–2.61 meg	**4.02**	**2.32**	**1.76**
MF-2 **MFF-2**	T-0	30.1–3 meg	**1.93**	**1.13**	**.78**
		3.01–6 meg	**2.77**	**1.98**	**1.63**
		6.01–10 meg	**4.13**	**3.33**	**2.98**
	T-1	100–3 meg	**1.93**	**1.13**	**.78**
		3.01–6 meg	**2.77**	**1.98**	**1.63**
		6.01–8 meg	**4.13**	**3.33**	**2.98**
	T-2	100–3 meg	**2.31**	**1.52**	**1.13**
		3.01–8 meg	**3.45**	**2.67**	**2.26**
	T-9	200–3 meg	**4.65**	**2.96**	**2.24**
		3.01–5.11 meg	**6.50**	**4.81**	**4.09**

TYPE DC: COATED CARBON FILM

Miniature-sized resistor designed for inherent stability, long load life and excellent protection against environmental factors. Pure crystalline carbon film bonded to selected ceramic cores. Good high frequency characteristics; low noise. Has solder coated copper leads*. Meets or exceeds MIL-R-10509 (Char. B and X). **Temperature Range:** −55° C to +165° C. **Tolerance:** ±1%; also available in ±.5%, ±2% or ±5%. **Suffix** (i.e., DC-¼) **indicates wattage rating.**

Dale Type (Size†)	Resis. Range, Ohms	Net Each, Lots of 1-24	25-99	100-499
DC-1/10 (.281 x .094)	2–9.99	**$1.61**	**$0.89**	**$0.60**
	10–400K	**1.03**	**.39**	**.20**
DC-⅛ (.343 x .109)	1–9.99	**1.19**	**.45**	**.23**
	10–1 meg	**1.07**	**.41**	**.16**
	1.01 meg-3 meg	**1.36**	**.62**	**.33**
	3.01 meg-4 meg‡	**1.36**	**.62**	**.33**

*For grade A weldable nickel leads, add **4c** per resistor; for .05″, gold-flashed dumet leads, add **10c** per resistor. †Lg. x dia. ‡2%.

TYPE DC (CONT'D)

Dale Type (Size†)	Resis. Range, Ohms	Net Each, Lots 1-24	25-99	100-499
DC-¼ (.468 x .109)	1–9.99	**$1.19**	**$0.45**	**$0.23**
	10–2 meg	**1.07**	**.41**	**.16**
	2.01 meg-5 meg	**1.60**	**.69**	**.46**
	5.01 meg-6 meg‡	**1.60**	**.69**	**.46**
DCS-½ (.562 x .187)	1–9.99	**1.19**	**.45**	**.23**
	10–2.49 meg	**1.07**	**.41**	**.16**
	2.5 meg-5 meg	**1.60**	**.69**	**.46**
	5.01 meg-10 meg	**1.99**	**1.02**	**.75**
	10.01 meg-15 meg‡	**1.99**	**1.02**	**.75**
DC-1 (.937 x .296)	1–9.99	**2.30**	**1.19**	**.81**
	10–5 meg	**1.42**	**.72**	**.48**
	5.01 meg-10 meg	**1.59**	**.78**	**.56**
	10.01 meg-15 meg	**2.62**	**1.30**	**.87**
	15.01 meg-30 meg‡	**2.62**	**1.30**	**.87**
DC-2 (2.062 x .296)	2–9.99	**2.89**	**1.49**	**1.04**
	10–10 meg	**1.77**	**.92**	**.63**
	10.01 meg-50 meg	**2.06**	**1.07**	**.80**
	50.01 meg-100 meg	**3.08**	**2.06**	**1.23**
	100.01 meg-125 meg‡	**3.85**	**2.68**	**2.19**
DC-5 (4.0 x .438)	5–9.99	**16.05**	**11.20**	**6.26**
	10–10 meg	**4.96**	**3.49**	**1.95**
	10.01 meg-50 meg	**8.13**	**5.67**	**3.19**
	50.01 meg-100 meg	**12.22**	**8.56**	**4.80**
	100.01 meg-150 meg	**17.61**	**12.35**	**6.81**
	150.01 meg-300 meg‡	**25.81**	**18.05**	**10.10**

*For grade A weldable nickel leads, add **4c** per resistor; for 50 micro-inch, gold-flashed dumet leads, add **10c** per resistor. †Lg. x dia., in. ‡2%.

PRECISION WIRE-WOUND RESISTORS

TYPE HG: ALUMINUM HOUSED

Precision power wire-wound resistor with beryllium oxide core for exceptional power-to-size ratio and stability. Molded construction with anodic coated, aluminum housing designed to utilize heat-sink effect of chassis for optimum heat dissipation and even heat distribution. Tinned Copperweld* terminals are standard. Screw mounts on chassis. Flat marking surface for easy identification. More than doubles MIL power requirements; exceeds MIL-R-18546 specifications. **Temperature Range:** −55° C to +275° C. **Temperature Coefficient:** ±50 ppm/° C, ±30 ppm/° C or ±20 ppm/° C depending on resistance value. **Tolerance:** ±1%; also available in ±.05%, ±.1%, ±.25%, ±.5% and ±3%.

*Reg. Copperweld TM.

STANDARD STOCK VALUES ±1%

Dale Type	W	Overall Size, In. Lg. x W. x H.	Resis. Range, Ohms, ±1%
HG-5	15	.600 x .334 x .320	.1–24.5K
HG-10	20	.750 x .420 x .390	.1–47.1K
HG-25	35	1.062 x .550 x .546	.1–95.2K
HG-50	50	1.968 x .630 x .610	.1–273K

PRICES FOR HG-5

Resistance, Ohms, ±1%	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.99	**$5.55**	**$5.10**	**$4.65**	**$4.20**
1–1K	**2.88**	**2.33**	**2.19**	**2.06**
1.1K–5K	**3.02**	**2.45**	**2.31**	**2.16**
5.1K–10K	**3.27**	**2.64**	**2.49**	**2.33**
10.1K–12K	**3.51**	**2.84**	**2.67**	**2.49**
12.1K–15K	**3.81**	**3.08**	**2.90**	**2.72**
15.1K–20K	**4.18**	**3.58**	**3.36**	**3.14**
20.1K–24.5K	**4.51**	**3.86**	**3.61**	**3.39**

PRICES FOR HG-10 AND HG-25

Resistance, Ohms, ±1%	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.99	**$6.66**	**$6.11**	**$5.55**	**$5.00**
1–1K	**3.37**	**2.68**	**2.52**	**2.35**
1.1K–5K	**3.53**	**2.83**	**2.66**	**2.48**
5.1K–10K	**3.85**	**3.07**	**2.89**	**2.68**
10.1K–12K	**4.14**	**3.31**	**3.11**	**2.89**
12.1K–15K	**4.51**	**3.61**	**3.39**	**3.16**
15.1K–25K	**4.85**	**4.42**	**4.03**	**3.61**
25.1K–40K	**5.37**	**4.90**	**4.46**	**4.01**
40.1K–50K	**5.90**	**5.38**	**4.88**	**4.48**
50.1K–60K	**6.44**	**5.86**	**5.31**	**4.70**
60.1K–75K	**6.93**	**6.30**	**5.72**	**5.06**
75.1K–95.2K	**7.29**	**6.63**	**6.02**	**5.33**

PRICES FOR HG-50

.1–.99	**$9.95**	**$9.11**	**$8.29**	**$7.47**
1–5.9	**8.53**	**6.84**	**6.39**	**5.97**
6–1K	**5.89**	**4.70**	**4.41**	**4.12**
1.1K–5K	**6.18**	**4.94**	**4.65**	**4.33**
5.1K–10K	**6.68**	**5.33**	**4.99**	**4.67**
10.1K–20K	**7.26**	**5.81**	**5.44**	**5.10**
20.1K–55K	**7.92**	**6.34**	**5.91**	**5.54**
55.1K–75K	**8.61**	**6.89**	**6.44**	**6.02**
75.1K–100K	**9.24**	**7.37**	**6.94**	**6.47**
100.1K–125K	**10.03**	**8.03**	**7.52**	**7.02**
125.1K–150K	**10.80**	**8.66**	**8.10**	**7.55**
150.1K–175K	**11.56**	**9.24**	**8.69**	**8.10**
175.1K–200K	**12.25**	**9.83**	**9.18**	**8.49**
200.1K–225K	**12.93**	**10.42**	**9.66**	**8.88**
225.1K–250K	**13.51**	**11.01**	**10.53**	**9.36**
250.1K–273K	**14.10**	**11.60**	**11.02**	**9.70**

TYPE G: SILICONE COATED

With features similar to those of type HG, but with tubular, silicone coated body and welded construction. Meets MIL-R-26 (Char. G and V) and MIL-R-23379 specs.

STANDARD STOCK VALUES ±1%

Dale Type	W	Size, In. Lg. x Dia.	Resis. Range, Ohms, ±1%
G-1	1	.250 x .078	1–3.4
G-2	1.5	.312 x .078	1–4.9
G-3	2.25	.422 x .093	.1–10.4K
G-5	4	.562 x .188	.1–24.5K
G-5A	4.5	.812 x .188	.1–42.1K
G-5C	5	.500 x .218	.1–32.3K
G-6	6	.625 x .250	.1–47.1K
G-10	7	.875 x .312	.1–95.2K
G-12	10	1.218 x .312	.1–154K
G-15	15	1.781 x .375	.1–273K

PRICES FOR G-1, G-2, G-3, G-5

Resistance, Ohms, ±1%	Net Each, Lots of 1-24	25-49	50-99	100-249
.1–.99	**$2.66**	**$2.08**	**$1.98**	**$1.82**
1–1K	**1.78**	**1.49**	**1.39**	**1.29**
1.1K–5K	**1.91**	**1.59**	**1.49**	**1.38**
5.1K–10K	**2.07**	**1.73**	**1.61**	**1.49**
10.1K–20K	**2.20**	**1.84**	**1.71**	**1.59**
20.1K–24.5K	**2.34**	**1.95**	**1.81**	**1.68**

PRICES FOR G-5A, G-5C, G-6 AND G-10

.1–.99	**$4.32**	**$3.60**	**$3.36**	**$3.12**
1–1K	**2.77**	**2.31**	**2.16**	**2.00**
1.1K–5K	**2.88**	**2.40**	**2.24**	**2.08**
5.1K–10K	**2.99**	**2.49**	**2.32**	**2.16**
10.1K–20K	**3.13**	**2.61**	**2.44**	**2.26**
20.1K–40K	**3.28**	**2.73**	**2.55**	**2.37**
40.1K–60K	**3.42**	**2.85**	**2.66**	**2.47**
60.1K–75K	**3.59**	**2.99**	**2.79**	**2.59**
75.1K–95.2K	**3.74**	**3.12**	**2.92**	**2.71**

PRICES FOR G-12 AND G-15

.1–.99	**$5.52**	**$5.16**	**$4.82**	**$4.47**
1–1K	**3.84**	**3.60**	**3.36**	**3.12**
1.1K–5K	**3.94**	**3.69**	**3.44**	**3.20**
5.1K–10K	**4.00**	**3.75**	**3.50**	**3.25**
10.1K–20K	**4.10**	**3.84**	**3.58**	**3.33**
20.1K–30K	**4.19**	**3.93**	**3.67**	**3.41**
30.1K–50K	**4.33**	**4.05**	**3.78**	**3.51**
50.1K–75K	**4.46**	**4.17**	**3.89**	**3.61**
75.1K–100K	**4.55**	**4.26**	**3.98**	**3.69**
100.1K–125K	**4.64**	**4.35**	**4.06**	**3.77**
125.1K–150K	**4.78**	**4.47**	**4.17**	**3.87**
150.1K–175K	**4.90**	**4.59**	**4.28**	**3.98**
175.1K–200K	**5.03**	**4.72**	**4.40**	**4.08**
200.1K–225K	**5.16**	**4.83**	**4.51**	**4.18**
225.1K–240K	**5.29**	**4.96**	**4.62**	**4.29**
240.1K–273K	**5.65**	**5.33**	**4.98**	**4.63**

For MIL-Bell Values See Page 114

BOURNS INC TRIMPOT® Potentiometers

BOURNS® HANDY INDEX

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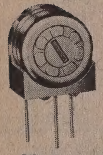
BOURNS® PART NUMBERING SYSTEM

Resistance tolerance given is standard; closer tolerances available. Standard resistance range given; special resistances available. Panel mount available with lead, lug or wire types as noted.

200, 3010	**L**	**1**	**102**	**M**
Basic Model	**Terminal Style**	**Modifying Number**	**Resistance Code**	**Panel Mount**
Contains 3 or 4 digits	**L**—Insulated stranded leads **J, S**—Solder lugs **P, T**—Printed circuit pins **H, W66, X**—PC pins, side-adjust **R, W**—PC pins, top-adjust **Y**—RJ12, RT12 PC pins	**1**—Standard resistance **2**—100K standard resistance	First 2 digits indicate significant numbers; 3rd digit indicates number of zeros	Available as noted

COMMERCIAL SINGLE-TURN POTENTIOMETERS

Model 3305P



Model 3305W

TRIMIT® WIRE-WOUND MODEL 3305

Sealed to prevent contamination from fluxing, soldering and cleaning. Stops provided at each end of travel. Mechanical Rotation: 280° nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±5%. Size: 0.31″ dia. x 0.19″ h. (**P**); 0.250″ w. x 0.312″ h. x 0.375″ lg. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3305	P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K	$1.75	$1.68	$1.61	$1.56	$1.47	$1.37
		10K	2.00	1.92	1.84	1.78	1.68	1.57
		25K	2.50	2.40	2.30	2.23	2.10	1.96
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K	2.25	2.16	2.07	2.00	1.89	1.77
		10K	2.50	2.40	2.30	2.23	2.10	1.96
		25K	3.00	2.88	2.76	2.67	2.52	2.36

Model 3345W

Model 3345P

WIRE-WOUND MODEL 3345

Sealed for printed circuit applications; meets MIL humidity test. Stops provided at each end of adjustment. Mechanical Rotation: 310° nom. Power Rating: 1.0 watt at 70° C. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.45″ dia. x 0.25″ h. (**P**); 0.45″ w. x 0.525″ h. x 0.295″ lg. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3345	P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$2.30	$2.09	$1.88	$1.71	$1.60	$1.45
		20K, 50K	2.53	2.30	2.07	1.88	1.76	1.60
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	3.00	2.74	2.46	2.22	1.09	1.89
		20K, 50K	3.30	3.01	2.71	2.44	2.30	2.08

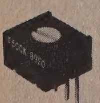
Model 3329H

HIGH PERFORMANCE PALIRIUM® CERMET MODEL 3329

Sealed to withstand any wave soldering and immersion cleaning process; meets MIL humidity test. Mechanical Rotation: 240° nom. Power Rating: 0.5 watt at 85° C. Operating Temperature: 150° C max. Tolerance: ±20%. Size: 0.25″ dia. x 0.18″ h. (**H, P**); 0.29″ w. x 0.245″ h. x 0.375″ lg. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3329	H P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$1.75	$1.66	$1.57	$1.50	$1.45	$1.40
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	2.50	2.38	2.25	2.15	2.07	2.00

Model 3389P



Model 3389T

Model 3389W

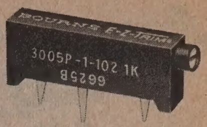
CERMET MODEL 3389

Low cost potentiometer sealed for industrial process cleaning; meets MIL humidity test. Mechanical Rotation: 280° nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±20%. Mounting: H, S and W, edge mounting PC pins; P, R and T, flat mounting PC pins. Size: 0.39″ w. x 0.24″ h. x 0.36″ lg. (**P, R, S, T, W**); 0.36″ h. x 0.24″ lg. (**H**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3389	H	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$0.91	$0.84	$0.79	$0.76	$0.71	$0.66
	P R S T W	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	.76	.70	.65	.63	.60	.56

BOURNS INC TRIMPOT® Potentiometers

COMMERCIAL MULTI-TURN POTENTIOMETERS

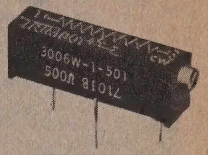


Models 3005P, 3007P, 3009P

WIRE-WOUND E-Z-TRIM® MODEL 3005

Humidity meets MIL-STD-202, Method 103. Self-locking adjustment screw; 20-turn screwdriver adjustment. Power Rating: 1.0 watt at 40° C. Abs. Min. Res.: 0.5% or 1.0 ohm, whichever is greater. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.16″ w. x 0.31″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3005P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K	$2.00	$1.85	$1.75	$1.72	$1.65	$1.55



Model 3006W

CERMET MODEL 3006

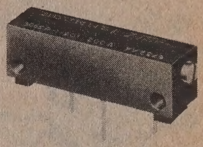
Low cost industrial model only 0.250″ high above the printed circuit board. TC: ±100 ppm/° C. Power Rating: 0.75 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±10%. Mechanical Adjustment: 15 turns nom. Size: 0.75″ x 0.190″ x 0.250″ th.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3006	P W Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.40	$1.30	$1.21	$1.19	$1.15	$1.08

WIRE-WOUND E-Z-TRIM® MODEL 3007

Humidity meets MIL-STD-202, Method 103. Self-locking adjustment screw; 20-turn screwdriver adjustment; welded terminations. Power Rating: 1.0 watt at 40° C. Abs. Min. Res.: 0.5% or 1.0 ohm, whichever is greater. Operating Temperature: 125° C. Tolerance: ±10%. Size: 0.16″ w. x 0.31″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3007P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K	$1.75	$1.62	$1.46	$1.39	$1.30	$1.23

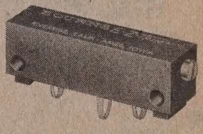


Models 3065P, 3067P

CERMET E-Z-TRIM® MODEL 3009

Wiper assembly idles at both ends; 20 turns nominal adjustment. TC: ±100 ppm/° C. Power Rating: 0.75 watt at 25° C. Abs. Min. Res.: 2.0% or 1 ohm, whichever is greater. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.19″ w. x 0.35″ h. x 0.75″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3009	P Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.94	$1.84	$1.75	$1.71	$1.65	$1.55



Models 3067S, 3068S

HUMIDITY-PROOF WIRE-WOUND E-Z-TRIM® MODEL 3065

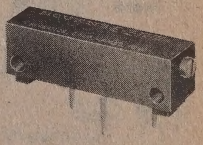
Meets steady-state humidity spec. Adjustment turns, 15 nom. Power Rating: 0.5 watt at 25° C. Operating Temperature: 85° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.36″ h. x 1.0″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3065	P S	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	$2.00	$1.85	$1.67	$1.58	$1.48	$1.41

WIRE-WOUND E-Z-TRIM® MODEL 3067

Wiper assembly idles at both ends of travel; 15-turn screwdriver adjustment. Power Rating: 0.5 watt at 25° C. Operating Temperature: 85° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.36″ h. x 1.0″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3067	P S	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K	$1.85	$1.71	$1.54	$1.46	$1.37	$1.30

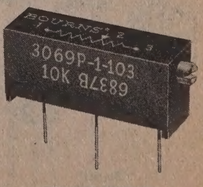


Model 3068P

CARBON E-Z-TRIM® MODEL 3068

Stable infinite resolution carbon element. Self-locking adjustment screw; 15-turn screwdriver adjustment. Power Rating: 0.2 watt at 25° C. End Setting: 0–5% voltage ratio. Operating Temperature: 85° C max. Tolerance: ±20%. Size: 0.28″ w. x 0.36″ h. x 1.00″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3068	P S	20K, 50K, 100K, 200K, 500K, 1 meg	$1.85	$1.71	$1.54	$1.46	$1.37	$1.30



Model 3069P

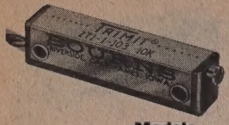
CERMET E-Z-TRIM® MODEL 3069

MIL spec immersion seal; tinned pins for compatibility with automated and hand soldering methods; 20 turns nominal adjustment. TC: ±100 ppm/° C. Power Rating: 0.75 watt at 25° C. Abs. Min. Res.: 2% or 1 ohm, whichever is greater. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.25″ w. x 0.35″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3069P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$1.94	$1.84	$1.75	$1.71	$1.65	$1.55

BOURNS INC TRIMPOT® Potentiometers

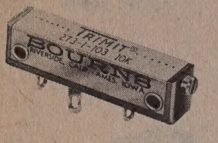
COMMERCIAL MULTI-TURN POTENTIOMETERS (CONT'D)


Models 271L, 272L

WIRE-WOUND TRIMIT® MODELS 271, 273, 275

Ideal for industrial controls and lab type applications. Self-locking adjustment shaft; wiper assembly idles both ends; 25-turn screwdriver adjustment. Power Rating: 0.5 watt at 70° C. Abs. Min. Res.: 2.0%. Operating Temperature: 105° C max. Tolerance: ±10%. Size: 0.26″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
271	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.19	$2.95	$2.66	$2.52	$2.36	$2.24
273	S	20K	4.32	4.00	3.60	3.42	3.20	3.04
275	P	50K	5.40	5.00	4.50	4.27	4.00	3.80
Panel mount		Available **271** or **273** model. Add to price	1.10	1.02	.92	.87	.82	.77


Models 273S, 274S

CARBON TRIMIT® RESISTALOY® MODELS 272, 274, 276

Infinite resolution Resistaloy® carbon element. Self-locking shaft; 25-turn adjustment. Power Rating: 0.2 watt at 25° C. End Setting: 0–5.0% voltage ratio. Operating Temperature: 105° C max. Tolerance: ±20%. Size: 0.25″ w. x 0.32″ h. x 1.25″ lg.

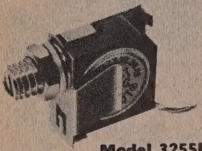
Bourns Model	Terminal	Resistance Range, Ohms	1-9	10-24	25-49	50-99	100-249	250-499
272 274 276	L S P	5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs, 5 megs	$3.78	$3.50	$3.15	$2.99	$2.80	$2.66
Panel mount		Available **272** or **274** model. Add to price	1.10	1.02	.92	.87	.82	.77

Models 275P, 276P

WIRE-WOUND MODEL 3255

High temperature all-plastic case; 25-turn screwdriver adjustment; meets MIL steady-state humidity specs. Power Rating: 1.0 watt at 50° C. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.50″ sq. x 0.19″ thk. (**L**); 0.22″ thk. (**P** or **W**).

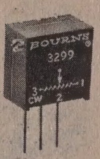
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3255	L, P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$3.19	$2.95	$2.66	$2.52	$2.36	$2.24
	W	20K, 25K	4.32	4.00	3.60	3.42	3.20	3.04
	W66	50K	4.78	4.43	3.98	3.78	3.54	3.36
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55


Model 3255L Panel Mount

CERMET MODEL 3299

Sealed to withstand wave-soldering and cleaning processes; humidity meets MIL-STD-202. Mechanical Adjustment: 25 turns nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.37″ w. x 0.39″ h. x 0.24″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	1-9	10-24	25-49	50-99	100-249	250-499
3299	P W X	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg, 2 megs	$1.66	$1.54	$1.44	$1.41	$1.37	$1.28


Model 3299X

HIGH PERFORMANCE SINGLE-TURN POTENTIOMETERS

HUMIDITY-PROOF HIGH TEMPERATURE WIRE-WOUND MODEL 3300

High temperature; humidity-proof to MIL specs. Single turn adjustment, 300° nom. Power Rating: 0.5 watt at 70° C. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.31″ dia. x 0.18″ h. (**P**); 0.31″ dia. x 0.46″ h. (**S**); 0.25″ w. x 0.37″ h. x 0.31″ lg. (**W**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3300	P or W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 5.94	$5.50	$4.95	$4.70	$4.40	$4.18
		25K	7.56	7.00	6.30	5.98	5.60	5.32
	S	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	8.91	8.25	7.43	7.05	6.60	6.27
		25K	10.53	9.75	8.78	8.33	7.80	7.41

Model 3300W

PALIRIUM® CERMET MODEL 3322 (RJ50)

Meets or exceeds MIL-R-22097, Style RJ50. Single turn adjustment, 240° nom. Power Rating: 0.5 watt at 85° C. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.25″ dia. x 0.22″ thk.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3322P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$5.50	$5.22	$4.90	$4.66	$4.35	$4.13

Model 3300S

Model 3322P

CERMET MODEL 3369

Single-turn adjustment, 295°. Tapers available. Power Rating: 1.0 watt at 70° C. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.50″ dia. x 0.492″ h. (**P**); 0.50″ dia. x 0.457″ h. (**S**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3369	P	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg, 2.5 megs, 5 megs	$3.20	$2.20	$1.70	$1.60	$1.50	$1.40
	S	100, 250, 500, 1K, 2.5K, 5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg, 2.5 megs, 5 megs	3.40	2.40	1.90	1.80	1.70	1.60

Model 3369P

Model 3369S

HIGH PERFORMANCE FOUR-TURN POTENTIOMETER

PALIRIUM® CERMET MODEL 3339

Sealed to withstand wave soldering and immersion cleaning process; humidity meets MIL-STD-202. Four turn adjustment. Power Rating: 0.5 watt at 85° C. Operating Temperature: 150° C max. Tolerance: ±20%. Size: 0.30″ dia. x 0.25″ thk. (**H, P**); 0.312″ w. x 0.315″ d. x 0.375″ h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	1-9	10-24	25-49	50-99	100-249	250-499
3339	H P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$2.50	$2.32	$2.09	$1.98	$1.86	$1.76
	W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	3.50	3.25	2.93	2.78	2.61	2.47

Model 3339P

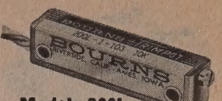
BOURNS INC TRIMPOT® Potentiometers

HIGH PERFORMANCE MULTI-TURN POTENTIOMETERS

WIRE-WOUND MODEL 200

Exceeds steady-state humidity of MIL-STD-202. Power Rating: 0.5 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
200	L P S	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$4.86	$4.50	$4.05	$3.84	$3.60	$3.42
		20K, 25K	6.48	6.00	5.40	5.12	4.80	4.56
		50K	7.56	7.00	6.30	5.98	5.60	5.32
		100K (**L** terminal only)	9.18	8.50	7.65	7.26	6.80	6.46
Panel mount		Available **L** or **S** terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77

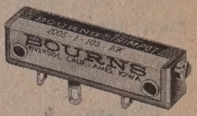

Models 200L, 215L, 260L

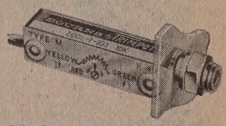
Models 200P, 215P, 260P

RESISTON® CARBON MODEL 215

Excellent shock, vibration and acceleration stability. Stable wiper assembly idles at both ends; self-locking adjustment, 22 turns nom. Power Rating: 0.25 watt at 50° C. Operating Temperature: 135° C max. Tolerance: ±20%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
215	L P S	5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs, 5 megs	$4.86	$4.50	$4.05	$3.84	$3.60	$3.42
Panel mount		Available **L** or **S** terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77

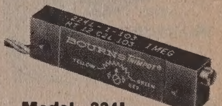

Models 200S, 215S, 260S


Models 200, 215, 260 Panel Mount

HIGH TEMPERATURE WIRE-WOUND MODEL 224

Meets or exceeds all requirements of MIL-R-27208. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

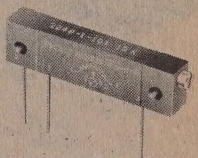
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
224	L P S	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 7.02	$ 6.50	$5.85	$5.55	$5.20	$4.94
		20K, 25K	8.64	8.00	7.20	6.83	6.40	6.08
		50K	9.18	8.50	7.65	7.26	6.80	6.46
		100K	11.34	10.50	9.45	8.97	8.40	7.98
Panel mount		Available **L** or **S** terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77


Model 224L

ULTRA-RELIABLE WIRE-WOUND MODEL 224-500 (RTR12)

Meets or exceeds all requirements of MIL-R-39015, Style RTR12. Power Rating: 0.5 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

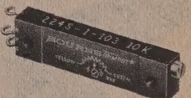
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
224	L-500 P-500	100, 200, 500, 1K, 2K, 5K, 10K	$14.58	$13.50	$12.15	$11.53	$10.80	$10.26
		20K	16.20	15.00	13.50	12.81	12.00	11.40


Model 224P

HIGH TEMPERATURE WIRE-WOUND MODEL 260

Exceeds steady-state humidity requirements to MIL-STD-202. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

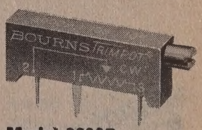
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
260	L P S	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.94	$5.50	$4.95	$4.70	$4.40	$4.18
		20K, 25K	7.56	7.00	6.30	5.98	5.60	5.32
		50K	8.10	7.50	6.75	6.41	6.00	5.70
		100K (**L** terminal only)	9.72	9.00	8.10	7.68	7.20	6.84
Panel mount		Available **L** or **S** terminals. Add to basic price	1.10	1.02	.92	.87	.82	.77


Model 224S

HIGH HUMIDITY-HIGH TEMPERATURE WIRE-WOUND MODEL 3000

Conforms to MIL-R-27208 humidity, shock, vibration, etc. Plastic case unaffected by normal flux, solvents or cleaning compounds. Power Rating: 0.5 watt at 70° C. Mechanical Adjustment: 15 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.16″ w. x 0.31″ h. x 0.75″ lg.

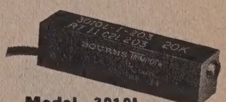
Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250-499
3000P	50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 9.72	$ 9.00	$8.10	$7.68	$7.20	$6.84
	20K	10.80	10.00	9.00	8.54	8.00	7.60

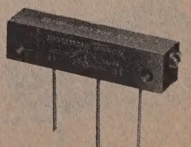

Model 3000P

HIGH TEMPERATURE WIRE-WOUND MODEL 3010

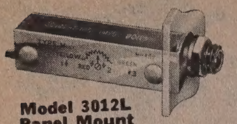
Meets MIL-R-27208. Sealed against humidity, liquids and potting compounds. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3010	L P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 7.02	$ 6.50	$5.85	$5.55	$5.20	$4.94
		20K, 25K	8.64	8.00	7.20	6.83	6.40	6.08
		50K	9.18	8.50	7.65	7.26	6.80	6.46
		100K	11.34	10.50	9.45	8.97	8.40	7.98
Panel mount		Available **L** terminal. Add to basic price	1.10	1.02	.92	.87	.82	.77


Model 3010L


Model 3010P

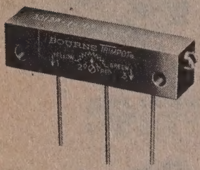
HIGH PERFORMANCE MULTI-TURN POTENTIOMETERS (CONT'D)


Model 3012L
Panel Mount

HIGH TEMPERATURE PALIRIUM® CERMET MODEL 3012

Meets or exceeds requirements of MIL-R-22097. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.28″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3012	L P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg	$5.94	$5.50	$4.95	$4.70	$4.40	$4.18
Panel mount		Available **L** terminal. Add to price	1.10	1.02	.92	.87	.82	.77

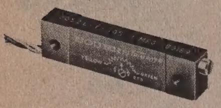


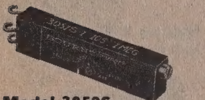
Model 3012P

HIGH TEMPERATURE PALIRIUM® CERMET MODEL 3052

Meets MIL humidity spec. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3052	L P S Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$5.94	$5.50	$4.95	$4.70	$4.40	$4.18
Panel mount		Available **L** or **S** terminals. Add to price	1.10	1.02	.92	.87	.82	.77

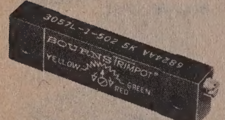

Model 3052L


Model 3052S

HIGH TEMPERATURE HUMIDITY-PROOF WIRE-WOUND MODEL 3057 (RT12)

Humidity proof to MIL spec; meets MIL spec tests for styles RT12 and RTR12 level M. Power Rating 1.0 watt at 70° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 150° C max. Tolerance ±5%. Size: 0.19″ w. x 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3057	J L P Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.46	$4.83	$4.15	$3.73	$3.56	$3.40
		20K	6.01	5.31	4.60	4.11	3.93	3.74
		50K	6.55	5.79	5.01	4.48	4.27	4.08
		100K	8.29	7.33	6.34	5.96	5.68	5.34
Panel mount		Available **J** or **L** terminals. Add to price	1.10	1.02	.92	.87	.82	.77

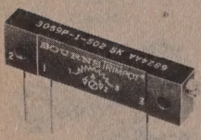


Models 3057L, 3059L

HIGH TEMPERATURE HUMIDITY-PROOF CERMET MODEL 3059 (RJ12)

MIL spec immersion seal gives trouble free operation after PC board processes. Gold plated nickel pins fo compatibility with automated and hand soldering methods. Power Rating: 1.0 watt at 70° C. Mechanica Adjustment: 22 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.19″ w. 0.32″ h. x 1.25″ lg.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3059	J L P Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs	$3.00	$2.85	$2.70	$2.57	$2.43	$2.2
Panel mount		Available **J** or **L** terminals. Add to price	1.10	1.02	.92	.87	.82	.7

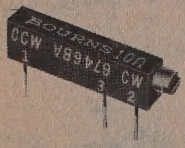


Models 3057P, 3059P

HUMIDITY-PROOF PALIRIUM® CERMET MODEL 3082

Meets MIL humidity spec. Power Rating: 0.3 watt at 85° C. Mechanical Adjustment: 10 turns nor Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.10″ w. x 0.15″ h. x 0.50″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250 49
3082P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg, 2 megs	$7.70	$7.13	$6.42	$6.09	$5.71	$5.4



Model 3082P

WIRE-WOUND DUAL-IN-LINE MODEL 3095

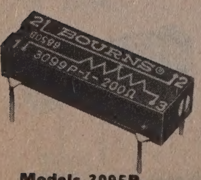
Sealed against humidity to MIL spec. Standard DIP size (TO-116) compatible with automatic inserti equipment. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 18 turns nom. Operating Temper ture: 150° C max. Tolerance: ±10%. Size: 0.25″ w. x 0.19″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	250 49
3095P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K	$3.75	$3.35	$3.00	$2.80	$2.60	$2.4
	50K	5.00	4.46	4.00	3.73	3.46	3.2

CERMET DUAL-IN-LINE MODEL 3099

Sealed to meet MIL-R-22097 immersion requirements. Standard DIP size (TO-116) compatible with D automatic insertion equipment. Power Rating: 0.75 watt at 25° C. Mechanical Adjustment: 20 turns no Operating Temperature: 125° C max. Tolerance: ±10%. Size: 0.25″ w. x 0.19″ h. x 0.75″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-9	10-24	25-49	50-99	100-249	25 49
3099P	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$3.75	$3.35	$3.00	$2.80	$2.60	$2.4



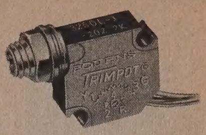
Models 3095P, 3099P

HIGH PERFORMANCE MULTI-TURN POTENTIOMETERS (CONT'D)

½" SQ. HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3250 (RT22)

Humidity-proof; sealed in high-temperature plastic case. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.50" sq. x 0.19" h. (**L**); 0.22" h. (**P, W, W66**).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3250	L	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 6.71	$ 6.22	$ 5.59	$ 5.31	$ 4.97	$ 4.72
		20K, 25K	7.56	7.00	6.30	5.98	5.60	5.32
		50K	10.00	9.27	8.34	7.91	7.41	7.04
	P W W66	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	7.23	6.69	6.02	5.71	5.35	5.08
		20K, 25K	7.97	7.38	6.64	6.30	5.90	5.61
		50K	10.53	9.75	8.78	8.33	7.80	7.41
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55



Model 3250L
Panel Mount

½" SQUARE HIGH RELIABILITY WIRE-WOUND MODEL 3250-501 (RTR22)

Incorporates the inherent reliability, performance and configuration of the field-proven Model 3250. Power Rating: 0.5 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 150° C max. Tolerance: ±5%. Size: 0.50" sq. x 0.19" h. (**L**); 0.22" (**P, W, X**).

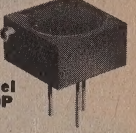
3250	L-501 P-501 W-501 X-501	100, 200, 500, 1K, 2K, 5K, 10K	$13.50	$12.50	$11.25	$10.68	$10.00	$ 9.50
		20K	14.58	13.50	12.15	11.53	10.80	10.26

Model 3252P

½" SQUARE HUMIDITY-PROOF CERMET MODEL 3252 (RJ22)

Meets or exceeds requirements of MIL-R-22097, Style RJ22. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 23 turns nom. Operating Temperature: 150° C max. Tolerance: ±10%. Size: 0.50" sq. x 0.22" h.

3252	L P W X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$ 5.62	$ 5.35	$ 5.06	$ 4.77	$ 4.50	$ 4.05
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55

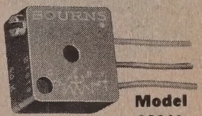


Model 3280P

⅜" SQUARE HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3280

Meets or exceeds requirements of MIL-R-27208. All plastic case provides sealing against liquids and potting compounds plus reliable moisture resistance. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.375" sq. x 0.203" h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3280	L P W W66	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$7.56	$7.00	$6.30	$5.98	$5.60	$5.32
		20K, 25K	9.18	8.50	7.65	7.26	6.80	6.46
		50K	9.72	9.00	8.10	7.69	7.20	6.84
Panel mount		Available **L** or **W** terminals. Add to basic price	2.20	2.03	1.83	1.74	1.63	1.55

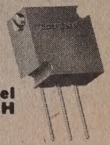


Model
3281L

⅜" SQUARE RESISTON® CARBON MODEL 3281

Meets or exceeds MIL-R-22097 requirements. All plastic case; positive end stops at both ends of travel; sealed against liquids and potting compounds. Power Rating: 0.5 watt at 50° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 150° C max. Tolerance: ±20%. Size: 0.375" sq. x 0.203" h.

3281	L P W W66	20K, 50K, 100K, 200K, 500K, 1 meg	$7.56	$7.00	$6.30	$5.98	$5.60	$5.32
Panel mount		Available **L** terminal. Add to basic price	2.20	2.03	1.83	1.74	1.63	1.55



Model
3282H

⅜" SQUARE HUMIDITY-PROOF PALIRIUM® CERMET MODEL 3282

Meets applicable requirements of MIL-R-22097. Stacking tabs for alignment and anti-rotation locking. Power Rating: 0.5 watt at 85° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.375" sq. x 0.20" h.

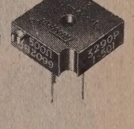
3282	H L P W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg	$6.50	$6.18	$5.85	$5.72	$5.52	$5.18

Model
3290L

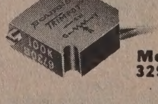
⅜" SQUARE HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3290 (RT24)

Meets or exceeds MIL-R-27208. All plastic case provides sealing against liquids and potting; positive end stops; reliable moisture resistance. Power Rating: 1.0 watt at 70° C. Mechanical Adjustment: 25 turns nom. Operating Temperature: 175° C max. Tolerance: ±5%. Size: 0.375" sq. x 0.145" h.

3290	H L P W	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$ 7.33	$6.79	$6.11	$5.80	$5.43	$5.16
		20K, 25K	8.75	8.10	7.30	6.92	6.48	6.16
		50K	10.10	9.35	8.42	7.99	7.48	7.11
Panel mount		Available **H, L, W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55



Model
3290P

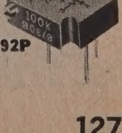


Model
3292L

⅜" SQUARE THIN LINE PALIRIUM® CERMET MODEL 3292 (RJ24)

Meets or exceeds all requirements of MIL-R-22097, Style RJ24. Power Rating: 0.5 watt at 85° C. Mechanical Adjustment: 22 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.375" sq. x 0.150" h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of					
			1-9	10-24	25-49	50-99	100-249	250-499
3292	L P W X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 750K, 1 meg	$6.50	$6.18	$5.85	$5.72	$5.52	$5.18
Panel mount		Available **L** or **W** terminals. Add to price	2.20	2.03	1.83	1.74	1.63	1.55

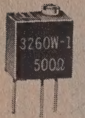


Model 3292P

BOURNS TRIMPOT® Potentiometers

HIGH-PERFORMANCE MULTI-TURN POTENTIOMETERS (CONT'D)

Models 3260H, 3262X


Models 3260W, 3262W

¼″ SQUARE HUMIDITY-PROOF HIGH TEMP. WIRE-WOUND MODEL 3260 (RT26)

Meets or exceeds all requirements of MIL-R-27208, Style RT26. Power Rating: 0.2 watt at 70° C. Mechanical Adjustment: 11 turns nom. Operating Temperature: 175° C max. Tolerance: ±10%. Size: 0.25″ sq. x 0.17″ h.

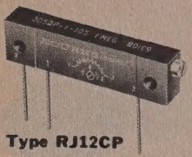
Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3260	H W	10, 20, 50, 100, 200, 500, 1K	$ 7.50	$ 6.95	$6.25	$5.93	$5.56	$5.28
		2K, 5K	8.25	7.64	6.88	6.53	6.11	5.81
		10K, 20K	10.50	9.72	8.75	8.31	7.78	7.39
		25K	11.00	10.19	9.17	8.70	8.15	7.74

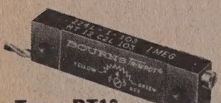
¼″ SQUARE HUMIDITY-PROOF HIGH TEMP. CERMET MODEL 3262 (RJ26)

Meets or exceeds all requirements of MIL-R-22097, Style RJ26. Power Rating: 0.25 watt at 85° C. Mechanical Adjustment: 12 turns nom. Operating Temperature: 175° C. Tolerance: ±10%. Size: 0.25″ sq. x 0.17″ h.

Bourns Model	Specify Terminal	Resistance Range, Ohms	1-9	10-24	25-49	50-99	100-249	250-499
3262	P W X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 250K, 500K, 1 meg	$ 7.00	$ 6.50	$5.84	$5.55	$5.20	$4.94

MIL-SPEC ADJUSTMENT POTENTIOMETERS


Type RJ12CP


Types RT12, RTR12

WIRE-WOUND MIL-R-27208 POTENTIOMETERS

MIL Type	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RT12C2L, RT12C2P, RT12C2Y	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	$5.56	$5.13	$4.71	$4.34	$4.03	$3.79
	20K	6.11	5.64	5.18	4.77	4.43	4.17
RT22C2L	50, 100, 200, 500, 1K, 2K, 5K, 10K	5.27	5.01	4.74	4.48	4.22	3.95
	20K	5.75	5.46	5.18	4.89	4.60	4.31
RT22C2P, RT22C2W, RT22C2X	50, 100, 200, 500, 1K, 2K, 5K, 10K	4.72	4.48	4.25	4.01	3.78	3.54
	20K	5.20	4.94	4.68	4.42	4.16	3.90
RT24C2L, RT24C2P, RT24C2W, RT24C2X	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K	7.33	6.79	6.11	5.80	5.43	5.16
RT26C2W, RT26C2X	10, 20, 50, 100, 200, 500, 1K	7.50	6.95	6.25	5.93	5.56	5.28
	2K, 5K	8.25	7.64	6.88	6.53	6.11	5.81

Type RJ22

WIRE-WOUND MIL-R-39015 POTENTIOMETERS

Failure rate level M and P except RJR12, failure rate level M only.

MIL Type	Resistance Range, Ohms	1-9	10-24	25-49	50-99	100-249	250-499
RTR12DL, RTR12DP, RTR12DY	100, 200, 500, 1K, 2K, 5K, 10K	$19.78	$18.32	$16.49	$15.65	$14.66	$13.93
	20K	21.40	19.82	17.84	16.93	15.86	15.07
RTR22DL RTR22DP RTR22DW RTR22DX	500, 1K, 2K, 5K, 10K	11.75	10.85	9.72	9.40	8.87	8.39
	20K	13.41	12.38	11.10	10.73	10.13	9.58
RTR24DP, RTR24DW, RTR24DX	500, 1K, 2K, 5K, 10K	8.66	8.02	7.22	6.85	6.42	6.10
RJR1212CL, RJR1212CY, RJR1212FL, RJR1212FY	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K, 1 meg	8.66	8.02	7.22	6.85	6.42	6.10

Type RJ24, RTR24

Type RJ26

Type RJ50

CERMET MIL-R-22097 POTENTIOMETERS

MIL Type	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
RJ12BL, RJ12BP, RJ12BY	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	$5.56	$5.13	$4.71	$4.34	$4.03	$3.79
RJ12CL, RJ12CP, RJ12CY	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	5.94	5.22	4.95	4.84	4.66	4.38
RJ22CL*, RJ22CP*, RJ22CW*, RJ22CX*	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	6.25	5.94	5.63	5.30	5.00	4.50
RJ24CL†, RJ24CP†, RJ24CW†, RJ24CX†	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	6.50	6.18	5.85	5.72	5.52	5.18
RJ26CP‡, RJ26CW‡, RJ26CX‡	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 250K, 500K, 1 meg	7.00	6.50	5.84	5.55	5.20	4.94
RJ50CP	10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	5.50	5.22	4.90	4.66	4.35	4.13

*Also available at same price: Char. **F** (RJ22**F**L) in same resistance range; Char. **B** (RJ22**B**L) in 20K–1 meg resistance range. †Also available at same price in Char. **B** (RJ24**B**L) in 20K–1 meg resistance range. ‡Also available at same price in Char. **F** (RJ26**F**P) in same resistance range.

STAINLESS STEEL POTENTIOMETER MOUNTING HARDWARE, ACCESSORY

For use on all Bourns potentiometer models. Mounting brackets for potentiometers with ¾″, 0.830″ and 1″ mtg. centers; threaded and stack mounting brackets for 0.520″ mtg. centers and panel mount seal washers are also available.

Bourns Model	Description	Net Each	Bourns Model	Description	Net Each
H-01	#2-56 x 1½″ lg. round head machine screw	$0.02	H-03	#2-56 hex nut for H-01 screws	$0.03
H-02	#2-56 x 12″ lg. threaded rod stock	.80	H-90	Screwdriver with clip	.35*

*Lots of 1-24; Lots of 25-99, **$0.30.**

KNOBPOT® AND LABPOT® READOUT POTENTIOMETERS AND ACCESSORIES

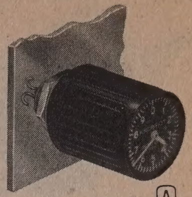
KNOBPOT® WIRE-WOUND READOUT POTENTIOMETERS

Knob, readout dial and potentiometer in one package requires less front panel space than most dials alone. Self-locking feature provides excellent stability during vibration and shock; 100% contact pressure control insures high mechanical life. Sealed to pass MIL-STD-202, Method 103, humidity. Shock: 50G. Vibration: 10G. Electrical Rotation: 3600° nom. Mechanical Life: 200,000 dial revolutions (Model 3610, 50,000 dial revolutions). Lockwasher and mounting nut included.

10-TURN ¾″ DIA. CLOCK FACE READOUT KNOBPOT® MODEL 3600 (FIG. A)

Dial Accuracy: ±0.5% VR. Dial Repeatability: ±0.1% VR. Power Rating: 1.5 watts at 25° C. Operating Temperature: −65° C to +85° C max. Resistance Tolerance: ±5%. Size: ¾″ dia. x 1″ lg. FMS; 1 7/32″ lg. overall.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3600S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$19.80	$19.32	$17.54	$16.50	$15.60
	200K, 250K	29.27	28.57	25.92	24.39	23.06

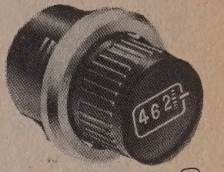


A

10-TURN ⅞″ DIA. DIGITAL READOUT KNOBPOT® MODEL 3610 (FIG. B)

Dial Accuracy: ±0.5% VR. Dial Repeatability: ±0.1% VR. Power Rating: 1.5 watts at 25° C. Operating Temperature: −25° C to +85° C max. Resistance Tolerance: ±5%. Size: ⅞″ dia. x ¾″ lg. FMS; 1 9/16″ lg. overall.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3610S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K	$21.00	$20.50	$18.60	$17.50	$16.55
	250K	28.92	28.23	25.61	24.10	22.79

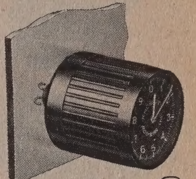


B

10-TURN 1¼″ DIA. CLOCK FACE READOUT KNOBPOT® MODEL 3640 (FIG. C)

Dial Accuracy: ±0.1% VR. Dial Repeatability: ±0.05% VR. Power Rating: 2.5 watts at 25° C. Operating Temperature: −25° C to +85° C max. Resistance Tolerance: ±3%. Size: 1¼″ dia. x 1½″ lg. FMS; 2 1/32″ lg. overall.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3640S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K, 100K, 125K, 200K, 250K	$23.00	$21.30	$19.17	$18.19	$17.04
	500K	34.00	31.48	28.34	26.89	25.18

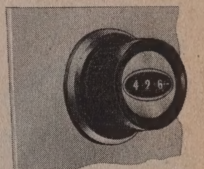


C

10-TURN 1¼″ DIA. DIGITAL READOUT KNOBPOT® MODEL 3650 (FIG. D)

Dial Accuracy: ±0.1% VR. Dial Repeatability: ±0.05% VR. Power Rating: 2.5 watts at 25° C. Operating Temperature: −25° C to +85° C max. Resistance Tolerance: ±3%. Size: 1¼″ dia. x 2 9/32″ lg. FMS; 2 15/32″ lg. overall.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
3650S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K, 100K, 200K, 250K	$28.50	$26.39	$23.75	$22.54	$21.11
	500K	39.25	36.35	32.71	31.04	29.07

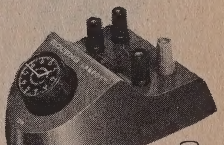


D

LABPOT® WIRE-WOUND READOUT POTENTIOMETER

Model 3660 Labpot® clock face readout potentiometer is a precision unit designed for a variety of circuit development and educational applications. Large, five-way binding posts facilitate fast hook-up of any leads. Unit is fused for protection against burn-out; an extra fuse is furnished inside the case. Dial Accuracy: 0.20% VR, 100 ohms; 0.15% VR, 1K; 0.10%, VR, 10K and 100K. Repeatability: ±0.05% VR. Mechanical Life: 200,000 dial revolutions. Power Rating: 2.5 watts at room temperature. Operating Temperature: −65° C to +85° C. Resistance Tolerance: ±1%. Weight, 14 oz.

Bourns Model	Fig.	Readout Description	Resistance Range, Ohms	Net Each, Lots of				
				1-9	10-24	25-49	50-99	100-249
3660	E	Clock dial face	100, 1K, 10K, 100K	$45.00	$42.66	$38.39	$36.43	$34.13



E

KNOBPOT® READOUT POTENTIOMETER ACCESSORIES

Accessory colors meet Federal Standard 595.

Bourns No. For Knobpot®		Description	Net Each, Lots of			
Model 3600	Model 3640		1-24	25-99	100-499	500-999
H-93	H-99	Snap-on color rings*	$0.35	$0.30	$0.25	$0.20
H-95	....	Stainless steel skirt	1.50	1.25	1.00	.75
....	H-98		3.77	3.43	3.10	2.92
H-103	H-97	Plastic slip-over friction brake	1.25	1.07	.97	.90
....	H-105	Flat face recess mounting bracket	2.19	1.99	1.80	1.70
H-107	....		2.73	2.48	2.25	2.15
....	H-106	Beveled face recess mounting bracket	2.61	2.38	2.15	2.05
H-108	....		2.49	2.26	2.05	1.95
H-361		Removal tool for Model 3610	No Charge when Ordered with Model 3610			

*Specify color: **-1**, red; **-2**, yellow; **-3**, blue; **-4**, green; **-5**, white.

TURNS-COUNTING DIALS

H-490 Series (Fig. F)—1″ dia.; for use with precision potentiometers or other rotating devices up to 30 turns. Readability of 1 part in 1000 for ten turns.

H-510 Series (Fig. G)—1⅜″ dia.; for use with precision potentiometers or other rotating devices up to 10 turns. Readability equal to larger 1 13/16″ dia. dials; excellent number definition in two-thirds the panel space.

Bourns Model	Finish	Shaft Dia.	Bushing Size	Brake	Net Each, Lots of				
					1-9	10-24	25-99	100-249	250-499
H-491-1*	Clear	3/32″	¼″-32NEF-2A	No	$7.05	$6.70	$6.35	$5.99	$5.64
H-492-1*	Clear	3/32″	¼″-32NEF-2A	Yes	7.25	6.89	6.53	6.16	5.80
H-493-1*	Black	3/32″	¼″-32NEF-2A	No	7.25	6.89	6.53	6.16	5.80
H-494-1*	Black	3/32″	¼″-32NEF-2A	Yes	7.40	7.03	6.66	6.29	5.92
H-491-3	Clear	¼″	⅜″-32NEF-2A	No	6.75	6.41	6.08	5.74	5.40
H-492-3	Clear	¼″	⅜″-32NEF-2A	Yes	6.95	6.60	6.26	5.91	5.56
H-493-3	Black	¼″	⅜″-32NEF-2A	No	6.95	6.60	6.26	5.91	5.56
H-494-3	Black	¼″	⅜″-32NEF-2A	Yes	7.15	6.79	6.44	6.08	5.72
H-510-1	Clear	⅛″	....	Yes	5.70	5.42	5.13	4.85	4.56
H-510-2	Clear	¼″	....	Yes	5.70	5.42	5.13	4.85	4.56

*Available with ⅛″ shaft dia.; to order, substitute **-2** for suffix **-1** (H-491-2).

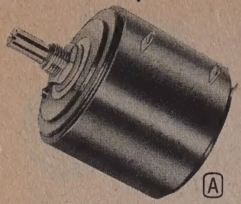
F

G

BOURNS INC TRIMPOT® Potentiometers

BUSHING MOUNT PRECISION POTENTIOMETERS

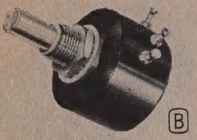
Lockwasher and mounting nut supplied. Standard resistance range given; special resistances available. Resistance Code: First 2 digits indicate significant Nos.; 3rd digit number of zeros, e.g., 101 = 100 ohms.


A

10-TURN 1-13/16″ DIAMETER WIRE-WOUND MODEL 3400 (FIG. A)

Power Rating: 5 watts at 40° C. Independent Linearity: ±0.15%. Operating Temperature: 105° C max. Resistance Tolerance: ±3%. Size: 1 13/16″ dia. x 1¾″ lg.

Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-4	5-9	10-24	25-49	50-99	100-249
3400S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K	$11.00	$10.00	$ 9.50	$ 9.00	$ 8.50	$ 8.00
	500K	20.90	19.00	18.05	17.10	16.15	15.20


B

SINGLE-TURN 1-1/16″ DIAMETER WIRE-WOUND MODEL 3437 (FIG. B)

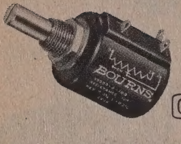
Power Rating: 1 watt at 40° C. Independent Linearity: ±0.5%. Operating Temperature: 80° C max. Resistance Tolerance: ±5%. Size: 1 1/16″ dia. x 1 1/16″ lg.

3437S-1	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K	$13.75	$12.50	$10.00	$9.00	$8.50	$8.00

SINGLE-TURN 1-1/16″ DIAMETER CONDUCTIVE PLASTIC MODEL 3438 (FIG. B)

Power Rating: 1 watt at 40° C. Independent Linearity: ±1.0%. Operating Temperature: 105° C max. Resistance Tolerance: ±20%. Size: 1 1/16″ dia. x 1 1/16″ lg.

3438S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg	$13.75	$12.50	$11.25	$10.00	$9.50	$9.00


C

10-TURN ⅞″ DIAMETER WIRE-WOUND MODEL 3500 (FIG. C)

Power Rating: 2.0 watts at 70° C. Independent Linearity: ±0.20%. Operating Temperature: 125° C max. Resistance Tolerance: ±3%. Size: ⅞″ dia. x 1″ lg.

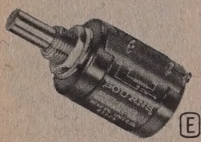
3500S-1 or 3500S-2	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 125K	$11.00	$10.00	$ 9.50	$ 9.00	$ 8.50	$ 8.00
	150K, 200K, 250K	20.90	19.00	18.05	17.10	16.15	15.20
	500K	30.80	28.00	26.60	25.20	23.80	22.40

D

10-TURN ⅞″ DIAMETER CONDUCTIVE PLASTIC MODEL 3501 (FIG. D)

Power Rating: 2 watts at 70° C. Independent Linearity: ±0.5%. Operating Temperature: 105° C max. Resistance Tolerance: ±10%. Size: ⅞″ dia. x 1″ lg.

3501S-1	1K, 2K, 5K, 10K, 20K, 50K, 100K, 125K, 150K, 200K, 250K, 500K	$16.50	$15.00	$14.25	$13.50	$12.75	$12.00
	1 meg, 2 megs, 4 megs	38.50	35.00	33.25	31.50	29.75	28.00


E

10-TURN INDUSTRIAL ⅞″ DIAMETER WIRE-WOUND MODEL 3507 (FIG. E)

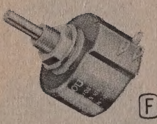
Power Rating: 2 watts at 25° C. Independent Linearity: ±0.25%. Operating Temperature: 105° C max. Resistance Tolerance: ±5%. Size: ⅞″ dia. x 1⅛″ lg. For slotted shaft, order 3507S-3.

3507S-1 or 3507S-3	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$ 8.25	$ 7.50	$ 6.60	$ 6.25	$ 5.95	$ 5.50
	250K	18.15	16.50	14.52	13.74	13.08	12.09

10-TURN ⅞″ DIAMETER WIRE-WOUND MODEL 3509 (FIG. E)

Same specifications as Model 3507 above. Nonmetallic shaft and bushing (suffix **1**); for stainless steel shaft and aluminum bushing, order 3509S-**8**.

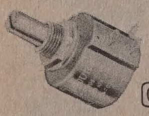
3509S-1	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$6.55	$5.95	$5.66	$5.36	$5.06	$4.76
3509S-8	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	7.37	6.70	6.36	6.03	5.69	5.36


F

3-TURN ⅞″ DIAMETER WIRE-WOUND MODEL 3510 (FIG. F)

Power Rating: 1 watt at 70° C. Independent Linearity: ±0.3%. Operating Temperature: 125° C max. Resistance Tolerance: ±3%. Size: ⅞″ dia. x 9/16″ lg.

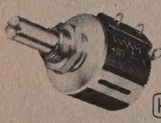
Bourns Model	Resistance Range, Ohms	Net Each, Lots of					
		1-4	5-9	10-24	25-49	50-99	100-249
3510S-1	25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K	$16.50	$15.00	$14.25	$13.50	$12.75	$12.00
	100K	36.30	33.00	31.35	29.70	28.05	26.40


G

5-TURN ⅞″ DIAMETER WIRE-WOUND MODEL 3520 (FIG. G)

Power Rating: 1.5 watts at 70° C. Independent Linearity: ±0.3%. Operating Temperature: 125° C max. Resistance Tolerance: ±3%. Size: ⅞″ dia. x 1 1/16″ lg.

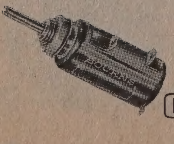
3520S-1	25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 75K	$14.85	$13.50	$12.82	$12.15	$11.47	$10.80
	100K	24.75	22.50	21.37	20.25	19.12	18.00
	250K	34.65	31.50	29.92	28.35	26.77	25.20


H

10-TURN ⅞″ DIAMETER WIRE-WOUND MODEL 3540 (FIG. H)

Power Rating: 2.0 watts at 70° C. Independent Linearity: ±0.25%. Operating Temperature: 125° C max. Resistance Tolerance: ±5%. Size: ⅞″ dia. x ¾″ lg.

3540S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$6.25	$6.25	$5.65	$5.35	$5.05	$4.75


I

10-TURN ½″ DIAMETER WIRE-WOUND MODEL 3700 (FIG. I)

Power Rating: 1.0 watt at 70° C. Independent Linearity: ±0.5%. Operating Temperature: 125° C max. Resistance Tolerance: ±5%. Size: ½″ dia. x 1″ lg.

3700S-1	50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$26.95	$24.50	$23.27	$22.05	$20.82	$19.60

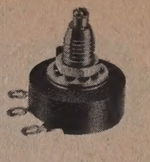
10-TURN ½″ DIAMETER WIRE-WOUND MODEL 3707 (FIG. I)

Power Rating: 1.0 watt at 40° C. Independent Linearity: ±1.0%. Operating Temperature: 105° C max. Resistance Tolerance: ±5%. Size: ½″ dia. x 1″ lg.

3707S-1	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K	$18.98	$17.25	$16.39	$15.53	$14.67	$13.80

BOURNS CERMET AND CARBON CONTROLS

CERMET CONTROLS


Model 3852E

Cermet infinite resolution element offers stable performance in all environments. Resistance Tolerance: ±10%. Taper: Linear (A). Contact Resistance Variation: ±3% max. of total resistance. TC: ±150 ppm/° C. High Performance Models meet or exceed the applicable requirements of MIL-R-94 and MIL-R-23285. Single turn except otherwise noted. **High Performance Model 3852:** Housing ¾″ dia. x ¼″ lg. Resistance Range: 50 ohms to 5 megs. Power Rating: 2 watts at 70° C. Operating Temperature: −65° C to +150° C. **Multi-Turn Model 3856:** Features 3¾ turns which provide 1350° of electrical continuity travel. Housing: ¾″ dia. x ¼″ lg. Resistance Range: 50 ohms to 5 megs. Power Rating: 2 watts at 70° C. Operating Temperature Range: −65° C to +150° C. **Commercial Model 3859:** Same as Model 3852 except Operating Temperature Range: −65° C to +125° C and has plastic bushing. **High Performance Model 3862:** Housing ½″ dia. x 0.453″ lg. Resistance Range: 100 ohms to 5 megs. Power Rating: 1 watt at 125° C. Operating Temperature Range: −65° C to +175° C. All models supplied with hardware; types with locking bushings supplied with lock nut.

Available Options: (With Minimum Order Requirements.) Plain and flatted shaft ends; lug or PC terminals; other nominal resistance values; 10% audio CW taper (C) and CCW taper (F) with ±10% resistance tolerance; and ±5% resistance tolerance (H) are also available on special order.

PART NUMBERING SYSTEM AND ORDERING

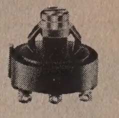
3852 A 16 2 101 A

Bourns Model	Bushing Style	Bushing Lgth.	Shaft Dia.	Standard Shaft Lgth. (FMS) Lgth.	Code*
3852	A	⅜″	¼″	½″† ⅞″	16 28
3852	B	½″	¼″	⅝″†	20
3852	C	¼″	⅛″	⅜″† ⅞″	12 28
3852	E	⅜″	⅛″	½″†	16
3856	A	½″	¼″	⅞″†	28
3856	H	½″	⅛″	⅞″†	28
3859	A	⅜″	¼″	½″† ⅞″	16 28
3859	B	¼″	¼″	⅜″†	12
3862	C	¼″	⅛″	⅜″† ⅞″	12 28
3862	E	½″	⅛″	⅝″†	20

Terminal and Shaft End
2, lugs, slotted
6, printed circuit, slotted

Resistance Code Value Ohms	Code	Value Ohms	Code
50‡	500	25K	253
100	101	50K	503
250	251	100K	104
500	501	250K	254
1K	102	500K	504
2.5K	252	1,000K	105
5K	502	2,500K	255
10K	103	5,000K	505

Taper and Resistance Tolerance
Linear taper, ±10% resistance tolerance

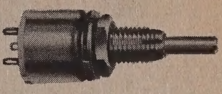

Model 3859B

*Shaft length numbering code is based on the number of 1/32″ increments in the length from the mounting surface (FMS), thus a ⅞″ shaft length is ordered as **28.** Shaft lengths other than those listed above are available with Minimum Order Requirements. †Minimum length slotted shaft available for each model bushing combination shown. ‡50 ohm value not available in Model 3862.

Model 3862C

DESCRIPTION AND PRICING

Bourns Model	Bushing Style	Bushing Lgth.	Shaft Dia.	Standard Shaft Lgth. (FMS)	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3852A	⅜-32 UNEF	⅜″	¼″	½″ or ⅞″	$2.40	$2.14	$2.09	$1.99	$1.56	$1.23
3852B	⅜-32 UNEF locking	½″	¼″	⅝″	2.80	2.49	2.44	2.32	1.82	1.43
3852C	¼-32 UNEF	¼″	⅛″	⅜″ or ⅞″	2.50	2.23	2.18	2.08	1.63	1.28
3852E	¼-32 UNEF locking	⅜″	⅛″	½″	2.80	2.49	2.44	2.32	1.82	1.43
3856A	⅜-32 UNEF	½″	¼″	⅞″	5.60	4.99	4.75	4.30	3.64	2.86
3856H	⅜-32 UNEF	½″	⅛″	⅞″	5.60	4.99	4.75	4.30	3.64	2.86
3859A	⅜-32 UNEF threaded plastic	⅜″	¼″	½″ or ⅞″	1.95	1.74	1.70	1.62	1.27	1.00
3859B	Plastic snap-in	¼″	¼″	⅜″	1.85	1.65	1.61	1.54	1.20	.95
3862C	¼-32 UNEF-2A	¼″	⅛″	⅜″ or ⅞″	4.20	3.95	3.80	3.40	2.20	1.70
3862E	¼-32 UNEF-2A locking	½″	⅛″	⅝″	4.60	4.32	4.16	3.68	2.54	1.85

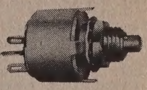

Model 3862E

MODEL 3861 (RV6) HOT MOLDED CARBON CONTROLS

Listed on DESC QPL for MIL-R-94, RV6 style. Resistance Tolerance: ±10% to 500K; ±20% 1 meg and above. Taper: Linear. Housing: 0.500″ dia. x 0.453″ lg. Resistance Range: 100 ohms thru 5 megs. Power Rating: ½ watt at 70° C. Operating Temperature Range: −55° C to +120° C. **Model 3861C (RV6N):** ¼-32 UNEF-2A non-locking bushing, ⅜″ or ⅞″ lg. shaft with screwdriver slot; solder lug terminals. **Model 3861E (RV6L):** ¼-32 UNEF-2A locking bushing, ⅝″ lg. shaft with screwdriver slot; solder lug terminals.

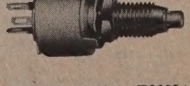
STANDARD RESISTANCES AND PART NUMBERING

Resistance Ohms	Non-Locking Bushing ⅜″ Shaft Bourns No.	Non-Locking Bushing ⅜″ Shaft Military No. RV6-	Non-Locking Bushing ⅞″ Shaft Bourns No.	Non-Locking Bushing ⅞″ Shaft Military No. RV6-	Locking Bushing ⅝″ Shaft Bourns No.	Locking Bushing ⅝″ Shaft Military No. RV6-
100	3861C-122-101A	NAYSL101A	3861C-282-101A	NAYSD101A	3861E-202-101A	LAYSA101A
250	3861C-122-251A	NAYSL251A	3861C-282-251A	NAYSD251A	3861E-202-251A	LAYSA251A
500	3861C-122-501A	NAYSL501A	3861C-282-501A	NAYSD501A	3861E-202-501A	LAYSA501A
1000	3861C-122-102A	NAYSL102A	3861C-282-102A	NAYSD102A	3861E-202-102A	LAYSA102A
2500	3861C-122-252A	NAYSL252A	3861C-282-252A	NAYSD252A	3861E-202-252A	LAYSA252A
5000	3861C-122-502A	NAYSL502A	3861C-282-502A	NAYSD502A	3861E-202-502A	LAYSA502A
10K	3861C-122-103A	NAYSL103A	3861C-282-103A	NAYSD103A	3861E-202-103A	LAYSA103A
25K	3861C-122-253A	NAYSL253A	3861C-282-253A	NAYSD253A	3861E-202-253A	LAYSA253A
50K	3861C-122-503A	NAYSL503A	3861C-282-503A	NAYSD503A	3861E-202-503A	LAYSA503A
100K	3861C-122-104A	NAYSL104A	3861C-282-104A	NAYSD104A	3861E-202-104A	LAYSA104A
250K	3861C-122-254A	NAYSL254A	3861C-282-254A	NAYSD254A	3861E-202-254A	LAYSA254A
500K	3861C-122-504A	NAYSL504A	3861C-282-504A	NAYSD504A	3861E-202-504A	LAYSA504A
1 meg	3861C-122-105B	NAYSL105B	3861C-282-105B	NAYSD105B	3861E-202-105B	LAYSA105B
2.5 megs	3861C-122-255B	NAYSL255B	3861C-282-255B	NAYSD255B	3861E-202-255B	LAYSA255B
5 megs	3861C-122-505B	NAYSL505B	3861C-282-505B	NAYSD505B	3861E-202-505B	LAYSA505B


Model 3861C (RV6N)

PRICING

Bourns Model	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	Bourns Model	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
3861C (RV6N)	$4.10	$3.65	$2.19	$1.90	$1.61	3861E (RV6L)	$4.15	$3.70	$2.33	$2.02	$1.71


Model 3861E (RV6L)

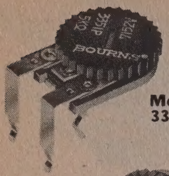
VARIABLE AND SELECTABLE FIXED RESISTORS

SINGLE-TURN VARIABLE RESISTORS

Resistance change after solvent bath in Freon* TFE or Trichloroethane is less than 1%.

See beginning of Bourns listing for Part Numbering System.

*Registered DuPont trademark.



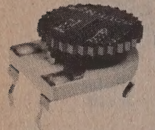
Model 3351P

Model 3351W

19/32″ DIAMETER COMPOSITION MODEL 3351

Feature wide resistance range; screwdriver and thumbwheel adjustment; compatible with standard circuit board cleaning processes. Power Rating: 1/3 watt at 60° C ambient. Resistance Tolerance: ±30% for 100 ohms; ±20% for others. Operating Temperature: 0° C to +70° C. Humidity: Less than ±7.5% to ±12.5% change in total resistance after 24 hours at 95% relative humidity, 40° C. Size: 19/32″ dia. x 13/32″ thk. (P); 5/16″ thk. (W).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-49	50-99	100-249	250-499
3351	P W	100, 250, 500, 1K, 2.5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg, 2.5 megs, 5 megs	$0.35	$0.29	$0.26	$0.21



Model 3353P

Model 3353W

19/32″ DIAMETER COMPOSITION MODEL 3353

Same features as above Model 3351. Power Rating: 1/3 watt at 60° C ambient. Resistance Tolerance: ±20% thru 1 meg; ±30% 2.5 megs and up. Operating Temperature: 0° C to +100° C. Humidity: Less than ±12.5% change in total resistance after 24 hours at 95% relative humidity, 40° C. Size: 19/32″ dia. x 5/16″ thk. (P); 9/32″ thk. (W).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-49	50-99	100-249	250-499
3353	P W	500, 1K, 2.5K, 10K, 25K, 50K, 100K, 250K, 500K, 1 meg, 2.5 megs, 5 megs	$0.46	$0.43	$0.34	$0.28

Model 3359P

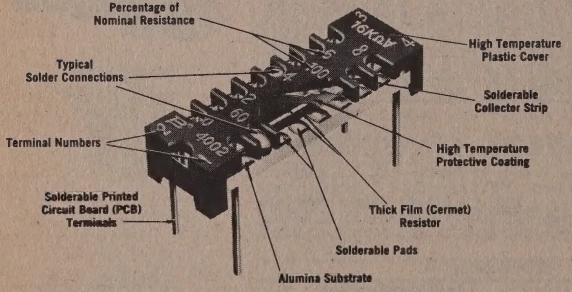
Model 3359W

3/8″ DIAMETER CERMET MODEL 3359

Features infinite resolution, cermet element; easily adjusted with any tool; low TC. Power Rating: 1/2 watt at 70° C ambient; 3/4 watt at 40° C ambient. Resistance Tolerance: ±20%. Operating Temperature: −65° C to +125° C. Humidity: Less than 1% change in total resistance after 500 hours at 95% relative humidity, 40° C. Size: 0.375″ dia. x 0.288″ thk. (P); 0.236″ thk. (W).

Bourns Model	Specify Terminal	Resistance Range, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
3359	P	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	$0.95	$0.85	$0.75	$0.70	$0.65	$0.60
	W	100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1 meg, 2 megs	.98	.88	.78	.72	.67	.62

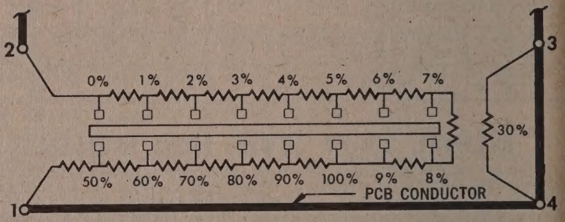
SFR™ SELECTABLE FIXED RESISTOR MODEL 4002


Percentage of Nominal Resistance
Typical Solder Connections
Terminal Numbers
Solderable Printed Circuit Board (PCB) Terminals
High Temperature Plastic Cover
Solderable Collector Strip
High Temperature Protective Coating
Thick Film (Cermet) Resistor
Solderable Pads
Alumina Substrate

Microelectronic thick film fixed resistive component with adjustability of ±1% or better without pressure-type contacts or moving parts; series of 1% and 10% taps fired on a ceramic substrate. Provides functional PCB adjustment for optimum tuning after final component assembly. Designed to meet MIL-R-55182 performance. Typical application requires four steps: (1) Determine approximate resistance value required for optimum circuit performance; (2) specify SFR resistor which covers desired resistance value; (3) install SFR resistor onto circuit board with other components; (4) select and set precise value required for circuit function and solder. Resistance Tolerance: ±20%, −0% between terminals 1 and 2. Operating Temperature: −65° C to +150° C. TC: ±50 ppm/° C avg.; ±100 ppm/° C max. MIL-STD-202, Method 304. Adjustment Method: Solder in 10% and 1% slots with rosin flux cored 60/40 tin/lead solder to establish resistance value. Use .045″ max. tip dia. on soldering iron (800° F max. tip temperature). Terminals: Tin-plate copper printed circuit pins are solderable. Size: 0.750″ w. x 0.250″ d. x 0.140″ h. plus 0.200″ lg. pins. Weight: 1 gram max.

MODEL 4002 PRICING

Bourns Model	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499
4002P-1-(RC)	$2.22	$1.36	$1.05	$0.97	$0.89	$0.84



Normal Range Connection—As Shown

Extended Range Connection—Break 3-4

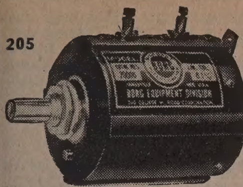
STANDARD RESISTANCE RANGES

Order by Model number, which includes code for nominal resistance value: 4002P-1-**600** indicates resistor with nominal resistance of 60 ohms.

Bourns Model	Nom. Resistance Ohms	Guaranteed Selection Range: Normal* Ohms	Extended* Ohms
4002P-1-600	60	33–60	48–75
4002P-1-131	130	72–130	116–163
4002P-1-251	250	138–250	223–313
4002P-1-501	500	275–500	445–625
4002P-1-102	1000	550–1000	890–1250
4002P-1-202	2000	1100–2000	1780–2500
4002P-1-402	4000	2200–4000	3560–5000
4002P-1-802	8000	4400–8K	7120–10K
4002P-1-163	16K	8800–16K	14.2K–20K
4002P-1-323	32K	17.6K–32K	28.5K–40K
4002P-1-643	64K	35.2K–64K	57K–80K
4002P-1-134	130K	72K–130K	116K–163K
4002P-1-254	250K	138K–250K	223K–313K
4002P-1-504	500K	275K–500K	445K–625K
4002P-1-105	1 meg	550K–1 meg	890K–1250K

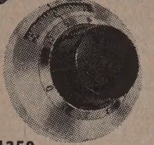
*Terminal connection; see above.

BUNKER RAMO AMPHENOL Micropots, Microdials


205

2201B, 4401B

2151B, 4301B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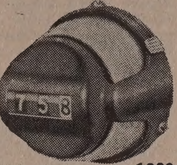
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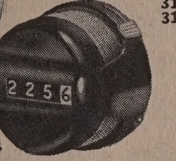
3121, 3141

1334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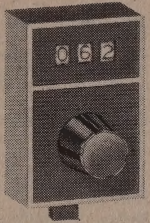

1381, 1385

TEN-TURN PRECISION MICROPOTS

Model 205: Bushing mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance (Zero-Based), ±0.1%. Resistance Tolerance, ±10% below 50 ohms; ±3%, 50 ohms and above. Size, 1¾″ dia. x 2⅛″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 1.15, 2.9, 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 50K or 100K ohms.

Model 2101B: Bushing-servo mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +125° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±5%, 25 and 50 ohms; ±3%, 100–100K ohms; ±5%, 120K ohms. Size, ⅞″ dia. x 1.448″ lg., bushing; ⅞″ dia. x 1.573″ lg., servo; ⅛″ dia. shaft. Standard Resistance: Specify 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 40K, 50K, 100K or 120K ohms.

Model 2151B: Bushing mount. Power Rating, 3 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±3%. Size, ⅞″ dia. x 1.455″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 100, 500, 1K, 5K, 10K, 20K, 30K, 50K or 100K ohms.

Model 2161B: Same as Model 2151B, except bushing-servo mtg.; ⅛″ dia. shaft.

Model 2201B: Bushing mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.5% below 100 ohms, ±0.25%, 100–100K; ±0.5%, 200K. Resistance Tolerance, ±5%, 25 and 50 ohms; ±3%, 100–100K; ±5%, 200K. Size, 1 13/16″ dia. x 2⅛″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 30K, 50K, 100K or 200K ohms.

Model 2251B: Bushing mount. Power Rating, 5 watts max. at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.5% below 100 ohms; ±0.25%, 100–100K; ±0.5%, 200K. Resistance Tolerance, ±5%, 25 and 50 ohms; ±3%, 100–100K; ±5%, 200K. Size, 1 13/16″ dia. x 2⅛″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 25, 50, 100, 500, 1K, 2K, 5K, 10K, 30K, 50K, 100K or 200K ohms.

Model 4101B: Bushing mount. Power Rating, 2 watts max. at 40° C. Temperature Range, −55° C to +125° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±5%. Size, ⅞″ dia. x 1.182″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K or 100K ohms.

Model 4301B: Bushing-servo mount. Power Rating, 3 watts at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.25%. Resistance Tolerance, ±5%. Size, ⅞″ dia. x 1.455″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K or 100K ohms.

Model 4401B: Bushing mount. Power Rating, 5 watts at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.5% below 100 ohms; ±0.25%, 100–100K ohms. Resistance Tolerance, ±5%. Size, 1 13/16″ dia. x 2⅛″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 25, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K or 100K ohms.

Model MF-78: Bushing mount. Power Rating, 2 watts at 40° C. Temperature Range, −55° C to +85° C. Linearity Tolerance, ±0.2%. Resistance Tolerance, ±3%. Size, ⅞″ dia. x 1¼″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K or 125K ohms.

THREE-TURN PRECISION MICROPOT

Model 205-3T: 3-turn precision Micropot. Bushing mount. Power Rating, 3 watts at 40° C. Temperature Range, −55° C to +105° C. Linearity Tolerance, ±0.5%, zero-based. Resistance Tolerance, ±10%, 10 ohms; ±3%, 50–50K ohms. Size, 1¾″ dia. x 1 31/64″ lg.; ¼″ dia. shaft. Standard Resistance: Specify 10, 50, 100, 500, 1K, 5K, 10K, 20K, 30K or 50K ohms.

Model 2131B: Bushing-servo mount. Power Rating, 4 watts at 40° C. Temperature Range, −55° C to +125° C. Linearity Tolerance, ±0.5%. Resistance Tolerance, ±5%, 10–30 ohms; ±3%, 100–50K. Size, ⅞″ dia. x 0.930″ lg. bushing; ⅞″ dia. x 1.055″ lg., servo; ⅛″ dia. shaft. Standard Resistance: Specify 10, 30, 100, 200, 300, 500, 1K, 2K, 3K, 5K, 10K, 20K, 30K or 50K ohms.

MICROPOT PRICES

Prices are for all resistance ranges.

Amphenol Model	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-249	250 Up
205	$19.42	$18.42	$17.48	$16.48	$15.54	Prices on Request
205-3T	15.43	14.64	13.91	13.12	12.33	
2101B	27.30	25.93	24.57	23.20	21.84	
2131B	27.30	25.93	24.57	23.20	21.84	
2151B	10.50	9.97	9.45	8.92	8.40	
2161B	10.50	9.97	9.45	8.92	8.40	
2201B	10.50	9.97	9.45	8.92	8.40	
2251B	10.50	9.97	9.45	8.92	8.40	
4101B	5.95	5.65	5.35	5.05	4.75	
4301B	6.95	6.45	6.20	5.90	5.45	
4401B	6.95	6.45	6.20	5.90	5.45	
MF-78*	6.50	6.20	5.85	5.55	5.20	
MF-78†	7.80	7.40	7.00	6.65	6.25	

*Resistance range, 100–20K ohms. †50–125K ohms.

CONCENTRIC SCALE MICRODIALS®

Type 1350: Ten-turn concentric scale increment dial has 100 divisions; turns-counting dial numbered 0–10. Extra-large outer vernier dial and foolproof turns dial for readout accuracy of 1000:1. Smooth epicyclic gear movement. Zero backlash. Fingertip brake. Clear anodized aluminum finish. Size, 1 13/16″ dia. x 1″ deep. For ¼″ dia. shafts.

Type 1370: Same as Type 1350, except size only ⅞″ dia. x .898″ deep. For ¼″ dia. shafts.

Type DFA: Ten-turn dial has 1000:1 indexing accuracy; couples directly to potentiometer shaft, hence no backlash. Single numeral in window above the knob indicates completed turns of shaft. Available in satin chrome finish **DFA-N** or with white numbers on black finish **DFA-NB.** Size, 1.06″ w. x 1.25″ h. (1.63″ h. with lock lever).

DIGITAL READOUT MICRODIALS

Type 1300: Digital units for fast, accurate readings; indicates precise shaft position up to 1000 turns. Available in 3-digit 10-turn, 4-digit 100-turn, and 5-digit 1000-turn models with counts to 6000 per minute. Optional fingertip brakes. Knurled aluminum knobs; Cycolac* counter wheels. Rugged, dust-sealed case. Continuous rotation. Numbers 3/16″ high. *Reg. TM Borg-Warner Corp.

Amphenol Number		No. Digits	No. Turns	Counts	Size, In. Dia. x Depth
Std.	With Brake				
1310	1309	3	10	000–999	1 13/16 x 1 21/32
1304	1314	4	100	0000–9999	2 1/16 x 1 21/32
1305	1315	5	1000	00000–99999	2 1/16 x 1 21/32

Type 1330: Ten-turn 3-digit units with on-off switchable brake and magnified digits for widest versatility. Internally illuminated. Lens type window gives 1½X magnification of digits. Snap-on cap for easy lamp replacement. Sealed against dust and moisture. Machined aluminum knob with fluted rim. Numbers 3/16″ high. Size, 1¾″ dia. x 1 27/32″ deep.

No Light No.	White Light No.	Red Light No.	Std. Color
1331	1331LW	1331LR	Dark Gray
1332	1332LW	1332LR	Light Gray
1333	1333LW	1333LR	Red
1334	1334LW	1334LR	Black
1335	1335LW	1335LR	White

Type 1380: Ten-turn dial has 1000:1 indexing accuracy; mounts to ¼″ potentiometer shaft with a single set screw. Control knob mounts directly to shaft to eliminate backlash inaccuracy; on-off brake switch. Available in black finish **1381** or in black with gray hammertone finish **1385.** Size, 1 7/64″ w. x 1.075″ d. x 1 51/64″ h.

Type 3100: Extremely precise, digital Microdial. Measures 1⅛″ x 1 21/32″ and protrudes only 25/32″ from panel. Digits (illumination optional) magnified by convex lens in recessed window. Three-digit 10-turn dial rotates continuously forward and backward with fingertip brake to lock settings. Indexing accuracy, 1000:1. For panels 1/16″ to 3/16″ thick. Natural brush aluminum finish. Illuminated types supplied with 28-volt bulb; optional 6-volt bulb available, specify.

Amphenol Number	Shaft Dia.	Light	Amphenol Number	Shaft Dia.	Light
3121	⅛″	None	3141	¼″	None
3121-2	⅛″	White	3141-2	¼″	White
3121-3	⅛″	Red	3141-3	¼″	Red

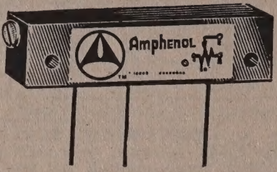
Type DFD: Ten-turn 3-digit readout with a vernier wheel providing 4 graduations intermediate between adjacent digits on the least significant digit counter wheel permits interpolating to 250 parts per million. Magnified digits and vernier scale for easy viewing. Size, less than 1″ wide and less than 2″ high.

MICRODIAL PRICES

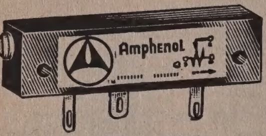
Amphenol Model	Net Each, Lots of				
	1-9	10-24	25-49	50-99	100-249
1304	$21.00	$19.95	$18.90	$17.85	$16.80
1305	22.57	21.42	20.31	19.16	18.06
1309	16.38	15.54	14.75	13.91	13.12
1310	15.22	14.43	13.70	12.91	12.18
1314	22.57	21.42	20.31	19.16	18.06
1315	25.20	23.94	22.68	21.42	20.16
1331-1335	19.42	18.42	17.48	16.48	15.54
1331LW-1335LW	19.42	18.42	17.48	16.48	15.54
1331LR-1335LR	19.42	18.42	17.48	16.48	15.54
1350	5.75	5.46	5.18	4.89	4.60
1370	6.50	6.17	5.85	5.53	5.20
1381, 1385	9.00	8.55	8.10	7.65	7.20
3121	13.65	12.96	12.28	11.60	10.92
3121-2, -3	15.40	14.61	13.88	13.05	12.32
3141	12.60	11.97	11.34	10.71	10.08
3141-2, -3	14.35	13.62	12.94	12.16	11.48
DFA-N, DFA-NB	4.50	4.25	4.05	3.80	3.60
DFD	9.00	8.50	8.00	7.60	7.20

BUNKER RAMO AMPHENOL Micropot® Trimmers

992L, 994L, 2850L, 2860L

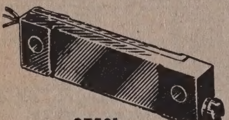


992P, 994P, 2850P, 2851P, 2855P



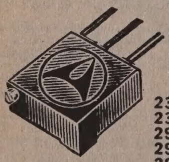
992SL, 994SL, 2850SL, 6034

2600P, 2610P, 3800P, 3805P, 3810P, 3811P, 3815P



2750L

2300P, 2305P, 3600P, 3610P



2300W, 2301W, 2900W, 2901W, 2905W

2900L, 2901L, 2905L

6203P

6203X

6900, 6905

Linear electrical output with shaft adjustment. Units may also be gang mounted. Power rating given is maximum. **Terminals:** Indicated by suffix: **L,** color coded wire leads; **P,** gold plated printed circuit pins; **SL,** gold plated solder lugs; **W,** printed circuit pins, top adjustable leadscrew; **X,** printed circuit pins, side adjustable leadscrew; **Y,** printed circuit pins—staggered, top adjustable screw; **K,** printed circuit pins with .200″ spacing.

GENERAL PURPOSE TYPES

Table below shows humidity-proof types that are otherwise equivalent to listed general-purpose types.

Amphenol Series	Description	Equivalent Humidity Proof Amph. Series
992	Gen. Purpose Wire-Wound	See 994
2600P	Microminiature Wire-Wound	See 2610P
2860	High Temperature Wire-Wound	See 2850
3600	Microminiature Wire-Wound	See 3610
3800*	Microminiature Wire-Wound	See 3810
3805*	Cermet Microminiature	See 3815

WIRE-WOUND TYPES

Series 992: Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10% below 75 ohms; ±5%, 100 ohms and above. Temperature Range, −55° C to +125° C. Temperature Coefficient, 70 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.28″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K or 50K ohms.

Series 2600 Microminiature: Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 100 ppm/° C. Adjustment, 22 turns. Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** only. Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 2860 High Temperature: Meets MIL-R-27208 style RT11. Power Rating, ¾ watt at 85° C. Resistance Tolerance, ±5%. Temperature Range, −55° C to +150° C. Temperature Coefficient, 50 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.28″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K or 50K ohms.

Series 3600 Microminiature: Power Rating, ½ watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 100 ppm/° C. Adjustment, 23 turns. Size, ⅜″ sq. x 0.20″ d. Terminals: **P, W** or **X.** Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 3800* Microminiature: Solvent resistant. Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 100 ppm/° C. Adjustment, 22 turns. Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** or **K.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

CERMET INFINITE RESOLUTION TYPES

Series 3805* Microminiature: Solvent resistant. Power Rating, ¾ watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient†, ±150 ppm/° C. Adjustment, 22 turns Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** or **K.** Standard Resistances: Specify 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K or 500K ohms.

*For Vista-Trim view top, use suffix **-2,** (e.g., 3805P-100-**2**).
†±100 ppm/° C also available in 1K and up resistance values.

HUMIDITY-PROOF TYPES

Pass MIL-R-27208A moisture resistance test.

WIRE-WOUND TYPES

Series 994: Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10% below 75 ohms; ±5%, 100 ohms and above. Temperature Range, −55° C to +125° C. Temperature Coefficient, 70 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.28″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K or 50K ohms.

Series 2300 Microminiature: Meets MIL-R-27208 style RT24. Power Rating, ¾ watt at 85° C. Resistance Tolerance, ±5%. Temperature Range, −55° C to +150° C. Temperature Coefficient, 50 ppm/° C. Adjustment, 26 turns. Size, ⅜″ sq. x 0.198″ d., P; 0.415″ h. x 0.193″ w. x 0.375″ lg., W; 0.415″ h x 0.200″ w. x 0.375″ lg., X. Terminals: **P, W** or **X.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 2610 Microminiature: Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 100 ppm/° C. Adjustment, 22 turns. Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** only. Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 2750 High Temperature: Meets MIL-R-27208 style RT12. Power Rating, ¾ watt at 85° C. Resistance Tolerance, ±5%. Temperature Range, −55° C to +150° C. Temperature Coefficient, 50 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.19″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K or 50K ohms.

MICROPOT TRIMMERS CONTINUED ON FOLLOWING PAGE

MICROPOT® HUMIDITY-PROOF TRIMMERS (CONT'D)

WIRE-WOUND TYPES (CONT'D)

Series 2850 High Temperature: Meets MIL-R-27208 style RT11. Power Rating, ¾ watt at 85° C. Resistance Tolerance, ±5%. Temperature Range, −55° C to +150° C. Temperature Coefficient, 50 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.28″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K or 50K ohms.

Series 2900 Subminiature: Meets MIL-R-27208 style RT22. Power Rating, ¾ watt at 85° C. Resistance Tolerance, ±5%. Temperature Range, −55° C to +150° C. Temperature Coefficient, 50 ppm/° C. Adjustment, 25 turns. Size, ½″ sq. x 0.187″ d., L; 0.220″ d., P; 0.195″ d., W or X; 0.575″ h. x 0.190″ w. x 0.500″ lg., Y. Terminals: **L, P, W, X** or **Y.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K or 50K ohms.

Series 3610 Microminiature: Power Rating, ½ watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 100 ppm/° C. Adjustment, 23 turns. Size, ⅜″ sq. x 0.20″ d. Terminals: **P, W** or **X.** Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 3810* Microminiature: Solvent resistant. Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 100 ppm/° C. Adjustment, 22 turns. Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** or **K.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 6900 Subminiature: Power Rating, 1 watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, 50 ppm/° C. Adjustment, single turn. Size, 0.500″ dia. x 0.255″ h. Terminals: **P** only. Resistance Range: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 10K, 20K or 50K ohms.

CERMET INFINITE RESOLUTION TYPES

Series 2305 Microminiature: Meets MIL-R-22097 style RJ24. Power Rating, ½ watt at 85° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +150° C. Temperature Coefficient†, ±150 ppm/° C. Adjustment, 26 turns. Size: Same as Series 2300. Terminals: **P, W** or **X.** Standard Resistances: Specify 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K or 1 megohm.

Series 2855 High Temperature: Meets MIL-R-22097 style RJ11. Power Rating, ¾ watt at 85° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +150° C. Temperature Coefficient†, ±150 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.28″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K or 1 megohm.

Series 2905 Subminiature: Meets MIL-R-22097 style RJ22. Power Rating, ½ watt at 85° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +150° C. Temperature Coefficient†, ±150 ppm/° C. Adjustment, 25 turns. Size, Same as Series 2900. Terminals: **L, P, W, X** or **Y.** Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 250K, 500K, 1 meg, 2.5 megs, 5 megs or 10 megs.

Series 3815* Microminiature: Solvent resistant. Power Rating, ¾ watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient†, ±150 ppm/° C. Adjustment, 22 turns. Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** or **K.** Standard Resistances: Specify 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K or 500K ohms.

Series 6034 Microminiature: Power Rating, ½ watt at 85° C. Resistance Tolerance, ±10%; ±5% available on request. Temperature Range, −55° C to +125° C. Temperature Coefficient, ±100 ppm/° C. Adjustment, 15 turns. Size, 0.20″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P, K** or **Y.** Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K or 1 megohm.

Series 6203 Microminiature: Power Rating, ¼ watt at 85° C. Resistance Tolerance, ±20%. Temperature Range, −25° C to +125° C. Temperature Coefficient, ±100 ppm/° C. Adjustment, single turn. Size, 0.22″ h. x 0.25″ dia., P; 0.33″ h. x 0.26″ w. x 0.26″ lg., X. Terminals: **P** or **X.** Standard Resistances: Specify 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K or 1 megohm.

Series 6905 Subminiature: Power Rating, ½ watt at 40° C. Resistance Tolerance, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient†, ±150 ppm/° C. Adjustment, Single turn. Size, 0.500″ dia. x 0.255″ h. Terminals: **P** only. Resistance Range: Specify 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K, 20K, 25K, 50K, 100K, 200K, 500K, 1 meg, 2 megs, 2.5 megs or 5 megs.

*For Vista-Trim view top, use suffix **-2,** (e.g., 3815P-100-2).
†±100 ppm/° C also available in 1K and up resistance values.

HOW TO ORDER

3815 **P** **-100** **-2**
(A) (B) (C) (D)

(A) Series Number.

(B) Terminal type; select from types indicated as available for particular series. See previous page for explanation of terminal types.

(C) Resistance code. First two digits are significant figures of resistance; last digit is number of zeroes that follow (e.g., **100** is 10 ohms, **504** is 500K ohms).

(D) Add **-2** suffix only when ordering Vista-Trim view top on series that offer this option.

FILM-MET™ INFINITE RESOLUTION TYPES

Series 2301 Microminiature: Power Rating, ½ watt at 85° C. Resistance Tolerance†, ±10%. Temperature Range, −55° C to +150° C. Temperature Coefficient, ±50 ppm/° C. Adjustment, 26 turns. Size: P, W or X, same as Series 2300. Terminals: **P, W** or **X.** Standard Resistances: Specify 10, 20, 50, 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

Series 2851 High Temperature: Power Rating, ¾ watt at 85° C. Resistance Tolerance†, ±10% Temperature Range, −55° C to +150° C. Temperature Coefficient, ±50 ppm/° C. Adjustment, 22 turns. Size, 0.32″ h. x 0.28″ w. x 1.25″ lg. Terminals: **L, P** or **SL.** Standard Resistances: Specify 20, 50, 100, 200, 500, 1K, 2K, 5K or 10K ohms.

Series 2901 Subminiature: Power Rating, ¾ watt at 85° C. Resistance Tolerance†, ±10%. Temperature Range, −55° C to +150° C. Temperature Coefficient, ±50 ppm/° C. Adjustment, 25 turns. Size: L, P, W, X or Y same as Series 2900. Terminals: **L, P, W, X** or **Y.** Standard Resistances: Specify 50, 100, 200, 500, 1K, 2K, 5K or 10K ohms.

Series 3811* Microminiature: Solvent resistant. Power Rating, ¾ watt at 40° C. Resistance Tolerance†, ±10%. Temperature Range, −55° C to +125° C. Temperature Coefficient, ±50 ppm/° C. Adjustment, 15 turns. Size, 0.31″ h. x 0.16″ w. x 0.75″ lg. Terminals: **P** or **K.** Standard Resistance: Specify 50, 100, 200, 500, 1K, 2K, 5K, 10K or 20K ohms.

*For Vista-Trim view top, use suffix **-2,** (e.g., 3811P-100-2).
†Also available in ±5% Resistance Tolerance.

MODEL 999 PANEL MOUNTING BRACKET

For use with trimmer models 992, 994, 2700, 2750, 2850, 2851, 2855, 2860, 2900, 2901 or 2905 with **L** terminals. Adapts trimmer to panel use; self-locking; permits screwdriver adjustment. Gold anodized aluminum. Fits panel ⅛″ thick with #1 drill hole (.228″ dia.). Hex nut threaded 10-32 NF2.

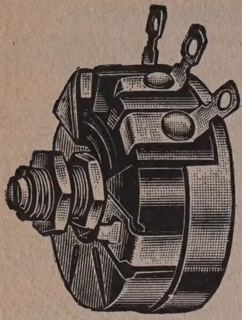
TRIMMER PRICES

Amphenol Model	Resis. Values, Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499*
992L, P or SL	50–10K	$2.95	$2.73	$2.46	$2.33	$2.18	$2.07
	20K, 50K	4.10	3.79	3.42	3.24	3.03	2.88
994L, P or SL	50–10K	3.10	2.87	2.59	2.45	2.29	2.18
	20K, 50K	4.25	3.94	3.54	3.36	3.14	2.99
999	Bracket	.81	.75	.68	.64	.60	.....
2300P, W or X	10–20K	6.90	6.35	5.80	5.43	5.16	4.88
2301P, W or X	10–20K	8.27	7.61	6.95	6.52	6.19	5.86
2305P, W or X	20–1 meg	7.32	6.74	6.15	5.77	5.48	5.18
2600P	100–20K	1.75	1.62	1.46	1.39	1.30	1.23
2610P	100–20K	2.45	2.27	2.04	1.95	1.82	1.72
2700L or W	100–10K	5.93	5.50	5.15	4.83	4.61	4.28
	20K, 30K	6.45	6.00	5.62	5.27	5.03	4.68
	50K	7.00	6.50	6.10	5.73	5.46	5.06
2750L, P or SL	10–10K	5.21	4.83	4.53	4.27	4.04	3.78
	20K	5.74	5.32	4.99	4.70	4.45	4.16
	50K	6.50	6.05	5.66	5.31	5.07	4.70
2850L, P or SL	10–10K	5.21	4.83	4.53	4.27	4.04	3.78
	20K	5.74	5.32	4.99	4.70	4.45	4.16
	50K	6.55	6.07	5.67	5.33	5.08	4.71
2851L, P or SL	20–10K	7.02	6.50	5.85	5.56	5.20	4.94
2855L, P or SL	100–1 meg	5.72	5.26	4.81	4.51	4.28	4.05
2900L, W, X or Y	10–10K	5.43	5.04	4.72	4.45	4.21	3.94
	20K	5.93	5.50	5.16	4.85	4.60	4.30
	50K	7.10	6.60	6.16	5.80	5.53	5.13
2900P	10–10K	4.87	4.52	4.24	3.98	3.77	3.53
	20K	5.36	4.97	4.67	4.39	4.16	3.89
	50K	7.10	6.60	6.16	5.80	5.53	5.13
2901L, P, W, X or Y	50–10K	7.35	6.95	6.60	6.25	5.85	5.50
2905L, P, W, X or Y	100–10 megs	6.48	6.01	5.64	5.31	5.02	4.69
3600P, W or X	100–20K	2.95	2.73	2.46	2.33	2.18	2.07
3610P, W or X	100–20K	3.55	3.31	3.02	2.85	2.58	2.51
3800P or K	10–20K	1.75	1.62	1.46	1.39	1.30	1.23
3805P or K	50–500K	1.92	1.77	1.64	1.53	1.43	1.34
3810P or K	10–20K	2.14	1.98	1.86	1.75	1.66	1.55
3811P or K	50–20K	2.94	2.77	2.59	2.44	2.31	2.16
3815P or K	50–500K	2.02	1.87	1.74	1.63	1.53	1.44
6034P, K or Y	100–1 meg	1.58	1.46	1.31	1.25	1.17	1.08
6203P or X	100–1 meg	1.75	1.62	1.46	1.39	1.30	1.23
6900P	10–10K	3.06	2.82	2.57	2.41	2.29	2.17
	20K	3.74	3.44	3.14	2.95	2.80	2.65
	50K	5.54	5.10	4.66	4.36	4.14	3.92
6905P	50–5 megs	3.83	3.50	3.28	3.12	2.95	2.76

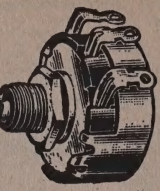
★LARGER QUANTITY DISCOUNTS ON REQUEST

Clarostat Controls, Potentiometers

"C LINE®" WIRE-WOUND INDUSTRIAL CONTROLS



Series 58C2



Series 43C2

Clarostat "C Line" controls are designed primarily for industrial applications. They feature moisture and dust-proof construction, corrosion proof finish and locking or standard bushing. Suffix C1 indicates 1⅝" round shaft beyond bushing and ⅜" long bushing with ⅜-32-NEF-2 thread. Suffix C2 indicates ⅛" screwdriver slotted shaft, ½" split locking bushing. One nickel plated hex mounting nut and internal lock washer supplied with all units. All C2 units supplied with a nickel plated machined hex locking nut. Switches, ohmages not listed, tapers not listed, bushings and shaft lengths not listed, and dual combinations are also available on special order. (Prices and delivery information available on request.)

SERIES 43C1 AND 43C2

2-WATT CONTROLS

Smallest 2-watt wire-wound control available up to 50K ohms. Tolerance ±5%. Independent Linearity ±2%.

	Net Each			Net Each	
Ohms	43C1	43C2	Ohms	43C1	43C2
5	$2.36	$2.63	1000	$2.36	$2.63
10	2.36	2.63	1500	2.36	2.63
20	2.36	2.63	2000	2.36	2.63
25	2.36	2.63	2500	2.36	2.63
30	2.36	2.63	3000	2.36	2.63
40	2.36	2.63	4000	2.36	2.63
50	2.36	2.63	5000	2.36	2.63
75	2.36	2.63	7500	2.36	2.63
100	2.36	2.63	10K	2.36	2.63
150	2.36	2.63	15K	2.68	2.95
200	2.36	2.63	20K	2.68	2.95
300	2.36	2.63	25K	2.68	2.95
400	2.36	2.63	30K	3.15	3.47
500	2.36	2.63	40K	3.15	3.47
750	2.36	2.63	50K	3.15	3.47

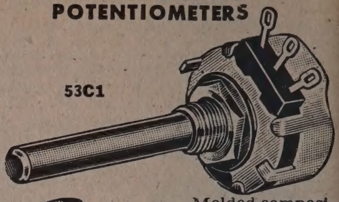
SERIES 58C1 AND 58C2

3-WATT CONTROLS

Tolerance ±5%. Linearity ±1%.

	Net Each			Net Each	
Ohms	58C1	58C2	Ohms	58C1	58C2
1	$2.36	$2.63	500	$2.36	$2.63
2	2.36	2.63	750	2.36	2.63
4	2.36	2.63	1000	2.36	2.63
6	2.36	2.63	1500	2.36	2.63
10	2.36	2.63	2000	2.36	2.63
15	2.36	2.63	2500	2.36	2.63
20	2.36	2.63	3000	2.36	2.63
25	2.36	2.63	5000	2.36	2.63
30	2.36	2.63	7500	2.36	2.63
40	2.36	2.63	10K	2.36	2.63
50	2.36	2.63	15K	2.68	2.95
60	2.36	2.63	20K	2.68	2.95
75	2.36	2.63	25K	2.68	2.95
100	2.36	2.63	30K	3.15	3.47
200	2.36	2.63	40K	3.15	3.47
300	2.36	2.63	50K	3.15	3.47
400	2.36	2.63			

2-WATT "C-LINE®" POTENTIOMETERS



53C1

53C2

Molded composition element type totally sealed against moisture. High quality resistance device has high stability under extreme conditions. Use for critical applications such as test equipment, military, computers, servo mechanisms, etc. One-piece wiper assembly; carbon to carbon contact for low noise level; stainless steel shaft; gold plated terminals. Electrical tolerances are ±10% for values up to 1 megohm; ±20%, 1 meg. and above. "S" taper supplied. **Size:** 1$\frac{1}{16}$" dia. x $\frac{9}{16}$" deep.

Clarostat Model 53C1, Taper S— Specify resistance value. Net Each **$1.95**

Clarostat Model 53C2, Taper S— Specify resistance. Net Each..... **$2.25**

Ohms	Ohms	Ohms
50	7.5K	500K
100	10K	750K
150	15K	1 meg
250	20K	1.5 meg
350	25K	2 meg
500	35K	2.5 meg
750	50K	3 meg
1000	75K	3.5 meg
1500	100K	4 meg
2000	150K	5 meg
2500	200K	7.5 meg
3500	250K	10 meg
5000	350K	

MILITARY WIRE-WOUND AND CARBON POTENTIOMETERS

RV4LAYSA, 53C2

MIL-R-19A VARIABLE WIRE-WOUND POTENTIOMETERS

Certified for MIL-R-19A and available in common shaft lengths and values. Linear taper. **Tolerance:** ±10%. **Ratings:** RA10, one watt. RA20, two watts. RA30, four watts **Bushing and Shaft:** Specify by letters (i.e. RA20**NASD**351A). RA10: NASD, ⅞" lg. x ¼" dia.; NASL, $\frac{5}{16}$" lg. x ¼" dia.; LASM, $\frac{7}{16}$" lg. x ¼" dia., lock bushing. RA10, 20: LASD, ⅞" lg. x ¼" dia., lock bushing. RA20, 30: NASA, ½" lg. x ¼" dia.; NASD, ⅞" lg. x ¼" dia.; LASB, ⅝" lg. x ¼" dia., lock bushing. All have slotted shafts.

Ohms ±10%	No. RA10()-, RA20()-, RA30()-	Ohms ±10%	No. RA10()-, RA20()-, RA30()-
3	3R0A*	350	351A
6	6R0A*	500	501A
8	8R0A*	750	751A
10	100A*	1000	102A
15	150A	1500	152A
20	200A*	2000	202A
25	250A	2500	252A
35	350A*	3500	352A*
50	500A	5000	502A*
75	750A	7500	752A*
100	101A	10K	103A*
150	151A	15K	153A*
200	201A	20K	203A†
250	251A	25K	253A†

*Not available in one-watt type. †Not available in one- or two-watt types.

MIL-R-94B VARIABLE 2-WATT CARBON POTENTIOMETERS

Certified for MIL-R-94B and available in common shaft lengths and values. Linear taper. **Tolerance:** ±10% unless otherwise specified. **Rating:** 2 watts. **Bushing and Shaft:** Specify by letters (example: RV4**NAYSD**101A, or 53C3-100-S): NAYSD (53C3) for standard bushing with ⅞" l. x ¼" dia. slotted shaft; LAYSA (53C2) for lock bushing and ⅝" l. x ¼" dia. slotted shaft. **Note:** Where no military number is shown, no MIL value is available; and, only the commercial version may be ordered (53C). All others are dual-marked.

Resis., Ohms ±10%	MIL No. RV4()-	Claro. No. 53C()-	Resis. Ohms ±10%	MIL No. RV4()-	Claro. No. 53C()-	Resis., Ohms ±10%	MIL No. RV4()-	Claro. No. 53C()-
50	500A	50-S	7500	752A	7500-S	500K	504A	500K-S
100	101A	100-S	10K	103A	10K-S	750K†	754B	750K-S
150	151A	150-S	15K	153A	15K-S	1 meg†	105B	1 Meg-S
250	251A	250-S	20K	....	20K-S	1.5 meg†	155B	1.5 Meg-S
350	351A	350-S	25K	253A	25K-S	2 meg†	205B	2 Meg-S
500	501A	500-S	35K	353A	35K-S	2.5 meg†	255B	2.5 Meg-S
750	751A	750-S	50K	503A	50K-S	3 meg†	....	3 Meg-S
1000	102A	1000-S	75K	753A	75K-S	3.5 meg†	355B	3.5 Meg-S
1500	152A	1500-S	100K	104A	100K-S	4 meg†	....	4 Meg-S
2000	....	2000-S	150K	154A	150K-S	5 meg†	505B	5 Meg-S
2500	252A	2500-S	200K	....	200K-S	10 meg†	....	10 Meg-S
3500	352A	3500-S	250K	254A	250K-S			
5000	502A	5000-S	350K	354A	350K-S			

MIL-R-94B HOT MOLDED ½-WATT CARBON POTENTIOMETERS

Rated 0.5 watt at 70° C, derated to zero at 120° C. Available with standard (RV6NAYSD) or locking (RV6LAYSA) bushing. Dia., ½"; 350 WVDC.

Ohms ±10%	No.* RV6()-	Ohms ±10%	No.* RV6()-	Ohms ±10%	No.* RV6()-	Ohms ±10%	No.* RV6()-
100	101A	2,500	252A	25,000	253A	250,000	254A
250	251A	5,000	502A	50,000	503A	500,000	504A
500	501A	10,000	103A	100,000	104A	1 meg	105A
1000	102A	15,000	153A	150,000	154A		

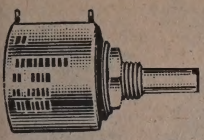
INDUSTRIAL NET PRICES

MIL or (Clarostat) Type*	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-249	250-499
RV4NAYSD- or (53C3-)	$1·95	$1·60	$1·60	$1·50	$1·25	$0·92
RV4LAYSA- or (53C2-)	2·25	1·90	1·90	1·58	1·33	·99
RV6NAYSD-	5·00	3·65	3·65	2·19	1·90	1·61
RV6LAYSA	5·00	3·88	3·88	2·33	2·02	1·71
RA20NAS( )-	3·00	2·01	2·01	1·41	1·16	·88
RA20LAS( )-	3·00	2·09	2·09	1·49	1·24	·95
RA30NAS( )-	3·00	2·19	2·19	1·59	1·34	1·06
RA30LASB-	3·00	2·27	2·27	1·67	1·42	1·14
RA10NAS( )-	5·19	3·94	3·41	2·88	2·52	2·34*
RA10LAS( )-	5·37	4·08	3·53	2·97	2·60	2·41*

*Ordering number must show bushing and shaft desired (as described above) and appropriate suffix to indicate ohms. Example: RA20**NASD3R0A.** †Tol., ±20%. *Larger quantity pricing on request.

Clarostat POTENTIOMETERS, DECADES AND DIALS

SMALL, 10-TURN 2-WATT POTENTIOMETER ONLY ¾" IN BODY LENGTH

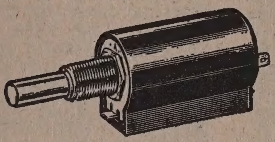


Series 73JA has brought the ten-turn potentiometer down in size, down in price and down in wear-outs. Only ¾" body length, priced less than $4.00 in quantity, and a rotational life of 500,000 cycles. **Resistance Range:** 100–100K ohms. **Resistance Tolerance:** ±5%. **Power Rating:** At 20° C, 2 watts. **Operating Temperature Range:** −55° C to +105° C. **Temperature Coefficient:** ±20 PPM/° C max. **End Resistance:** 0.25% or 1 ohm. **Noise During Adjustment (ENR):** 100 ohms, maximum. **Insulation Resistance:** 1000 megohms at 500 VDC. **Dielectric Strength:** 1000 V rms. **Actual Electrical Travel:** 3600° +10° −0°. **Linearity:** 0.25%, independent. **Mechanical Torque:** 1.5 oz.-in. maximum. **Stop Strength:** 50 oz.-in. minimum. To order, add resistance required to Clarostat No., example 73JA-**100.** See stock value, ohms, below.

Clarostat Number	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250-499	500-999
73JA	$4.69	$4.52	$4.35	$4.01	$3.83	$3.69	$3.54

Stock Value, Ohms	Nominal Resolution	Stock Value, Ohms	Nominal Resolution
100	.055%	5000	.020%
200	.037%	10K	.017%
500	.030%	20K	.015%
1000	.025%	50K	.011%
2000	.021%	100K	.009%

SERIES 62JA TEN-TURN POTENTIOMETER



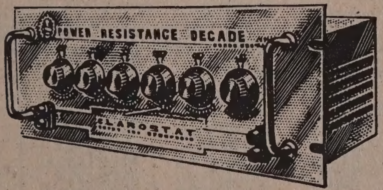
Opens new application areas for the advantages of multi-turn potentiometer design, including far greater resolution in trimming, better instrument control and settings for all types of electronic equipment. Resistance tolerance, ±5%. Functional output, linear. Absolute linearity, ±0.25%. Power dissipation at 25° C, 2 watts, derated to zero at 85° C. Dielectric strength, 1000 VAC. Electrical and mechanical rotation, 3600°, +10, −0. Maximum torque, 3 oz.-in. Stop strength, 50 oz.-in. Insulation resistance, 1000 megohms. Life, 100,000 shaft revolutions. Max. rotation speed, 60 rpm. Size, ⅞" dia. x 2½" overall.

Net Each, Lots of 1–9.......................................**$7.50**
Net Each, Lots of 10–24.......................................**$6.50**
Net Each, Lots of 25–99.......................................**6.00**
Net Each, Lots of 100–499.......................................**5.50**

Stock Value, Ohms	Resolutions 100/Total Turns	Stock Value, Ohms	Resolutions 100/Total Turns
100*	.062%	5,000	.026%
200*	.048%	10,000	.024%
250*	.038%	20,000	.019%
500	.036%	25,000	.017%
1,000	.030%	30,000	.016%
2,000	.023%	50,000	.013%
2,500	.022%	100,000	.012%

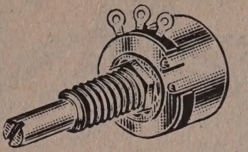
*Absolute linearity, ±0.5%.

MODEL 250 RACK MOUNTED DECADE



Same as Model 240C except for rack mounting. Fits in standard 19" relay rack. **Size:** 19" w. x 13¼" d. x 7" h. Weight, 18½ lbs.
Model 250 Power Resistor Decade Box—
Net Each.......................................**$157.50**

SERIES 381 1-WATT ⅝" DIA. POTENTIOMETERS



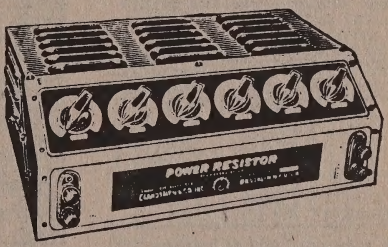
Clarostat "Quiet One" series, a new, low cost potentiometer with characteristics exceeding those of higher priced models. Features reliable, homogeneous, strain-free resistance element with 1% dynamic noise and 5% independent linearity. Mechanical parts precision machine-finished for smooth operation, long life. Manufactured to MIL-R-94 specifications. **Resistance Tolerance:** Linear, up to 500K ohms ±10%; above 500K ohms, ±20%. **Power Rating:** 1 watt max. continuous power rating for linear taper, but voltage not to exceed rating. Full rating at 70° C, derated linearly to zero watts at 120° C. Derate all non-linear tapers by multiplying wattage rating by 0.5. **Mechanical and Rotation:** 300° ±5° with switch. **Dynamic Noise:** Linear single controls maximum initial noise level 1% of total resistance. **Linearity:** ±5% independent. **Working Voltage:** 350 VDC across end terminals, power not to exceed rating. Models 381N have plain ¼" long bushing, ½" long shaft, screwdriver slotted. Models 381NS same, but equipped with attached SPST switch rated 1 amp at 125 VAC or DC. Models 381L have ⅜" shaft-locking bushing, 1/16" long shaft, screwdriver slotted. To order, add resistance required to Clarostat No., example: 381N-**100.** See Stock Values Table, below.

Clarostat Number	Shaft Length, Screwdriver Slotted	Bushing Length	Net Each, Lots of 1-9	10-49	50-99	100-249
381N	¾"	¼"	$2.66	$2.00	$1.71	$1.24
381NS	¾"	¼"	4.06	3.05	2.61	1.89
381L	7/16"	⅜"	2.86	2.14	1.84	1.33

TABLE OF STOCK VALUES

Ohms				
100	1000	10K	100K	1.0 meg
250	2500	25K	250K	2.5 megs
500	5000	50K	500K	5.0 megs

MODEL 240C PORTABLE DECADE

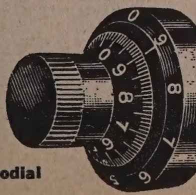


The Model 240C portable resistance decade allows the changing of resistance at a flip of a switch in a working circuit. Any ohms value can be obtained, from one ohm to 999,999 ohms, in steps of one ohm and at a maximum power rating of 225 watts, using a maximum of 1,000 volts DC or 660 volts AC. Dependable Clarostat "Greenohm" resistors are used throughout. These are inorganic-cement-coated, wire-wound power resistors. The resistors are mounted on rigid metal supports; a baffle plate separating the resistor bank from the switch assembly protects the latter against heat. Resistance changing switches are of the type that prevents a resistance breakdown between steps, thus protecting delicate meters and measuring instruments in the circuit. Pointer knobs indicate at a glance the resistance value being used.

Resistance Tolerance: ±2.0% all decades except No. 1, ±5.0%. **Max. Current:** 5 amps, No. 1; 1.5 amps, No. 2; 0.5 amp, No. 3; 0.15 amp, No. 4; 0.05 amp, No. 5; 0.005 amp, No. 6.

In a heavy gauge metal case, finished in frosted gray wrinkle, with an etched black-and-aluminum front panel. Overall length, 13"; 8½" deep; 5¾" high. Weight, 11.5 lbs.
Model 240C Power Resistor Decade Box—Net......**$115.50**

CLARODIALS—10-TURN CONCENTRIC SCALE DIALS



Clarodial

Calibrated dials designed for multi-turn potentiometers up to ten turns or other rotary devices. Requires only one inch of panel space. Knob attaches directly to the shaft, and the body of the dial is mounted rigidly to the panel. Therefore, accurate readings with a ratio of 1000 to one for 10 turns are provided with zero backlash and no reading error. Made of anodized aluminum. Mounting requirements: ¼" shaft and ⅜"-32 NEF-2A bushing. Model 411 is black, has no lock. Model 412 is black, has lock. Model 461 is clear, has no lock. Model 462 is clear, has lock.

Clarostat No.	Net Each, Lots of 1-9	10-24	25-99	100-249
411	$7.75	$7.30	$6.95	$6.55
412	8.95	8.50	8.05	7.60
461	8.25	7.80	7.40	7.00
462	9.45	8.95	8.50	8.00

MALLORY Carbon Controls

MIDGETROLS®

Mallory Midgetrols are used in both replacement and industrial applications. Rated 1 watt linear, ½ watt audio taper. 1⁵⁄₁₆″ dia. **Tapers:** 1, left hand audio; 2, reverse audio; 4, linear.

BUSHING MOUNT—METAL SHAFT

⅜″-32 x ⅜″ bushing; shaft ¼″ dia. x 2⅜″ FMS (Front Mounting Surface). Furnished with two knob adapters and hex nut.

Mallory U Midgetrols—Without taps. Net Each.................. **$1.10**

Mallory U Midgetrols—Double taps. Net Each.................. **$1.36**

WITHOUT TAPS

Mall. No.	Resis., Ohms	Taper	Mall. No.	Resis., Ohms	Taper
U1	100	4	**U36**	75K	1
U2	500	4	**U39**	100K	1
U52R	500	2	**U40**	100K	2
U3	1K	2	**U41**	100K	4
U4	1K	4	**U415**	125K	4
U5	1500	2	**U42**	150K	1
U5L	1500	4	**U43**	200K	4
U6	2K	4	**U44**	250K	1
U7	2500	2	**U45**	250K	2
U8	3K	4	**U46**	250K	4
U9	3K	2	**U48**	500K	1
U12	5K	1	**U50**	500K	4
U14	5K	4	**U51**	750K	1
U18	10K	1	**U52**	1 meg	2
U19	10K	2	**U53**	1 meg	1
U20	10K	4	**U54**	1 meg	4
U21	15K	1	**U155**	1.5 megs	4
U22	15K	2	**U55**	2 megs	1
U24	20K	1	**U56**	2 megs	4
U26	20K	4	**U255**	2.5 megs	4
U28	25K	2	**U57**	3 megs	1
U28A	25K	1	**U59**	3 megs	4
U29	25K	4	**U63**	5 megs	2
U30	30K	4	**U65**	5 megs	1
U33	50K	1	**U67**	5 megs	4
U34	50K	2	**U82**	10 megs	4
U35	50K	4			

DOUBLE TAPPED

Mallory No.	Resistance, Ohms	Taps at	
		Tap 1	Tap 2
UDT283	500K	100K	200K
UDT289	1 meg	250K	500K
UDT291	1.5 megs	225K	500K

BUSHING MOUNT—NYLON SHAFT

Same bushing as U type. Shaft ¼″ dia. x ¾″ FMS nylon.

Mallory SU Midgetrols—Net Ea.. **$1.00**

Mallory No.	Resis., Ohms	Taper	Mallory No.	Resis., Ohms	Taper
SU6	1500	4	**SU50**	500K	4
SU8	3K	4	**SU54**	1 meg	4
SU14	5K	4	**SU56**	2 megs	4
SU20	10K	4	**SU565**	2.5 megs	4
SU29	25K	4	**SU59**	3 megs	4
SU35	50K	4	**SU67**	5 megs	4
SU41	100K	4	**SU69**	7.5 megs	4
SU46	250K	4			

TAB MOUNT—METAL SHAFT

Mounts on two twist-tab lugs. Shaft ¼″ dia. x 2⅜″ FMS. Furnished with three knob adapters.

Mallory TA Midgetrols—Net Ea.. **$0.81**

Mallory No.	Resis., Ohms	Taper	Mallory No.	Resis., Ohms	Taper
TA52L	500	4	**TA55L**	500K	4
TA751L	750	4	**TA16A**	1 meg	1
TA13L	1000	4	**TA16L**	1 meg	4
TA14L	10K	4	**TA155L**	1.5 megs	4
TA153L	15K	4	**TA26A**	2 megs	1
TA253L	25K	4	**TA26L**	2 megs	4
TA54L	50K	4	**TA255L**	2.5 megs	4
TA15L	100K	4	**TA36L**	3 megs	4
TA254L	250K	4	**TA56R**	5 megs	2
TA55A	500K	1	**TA56L**	5 megs	4

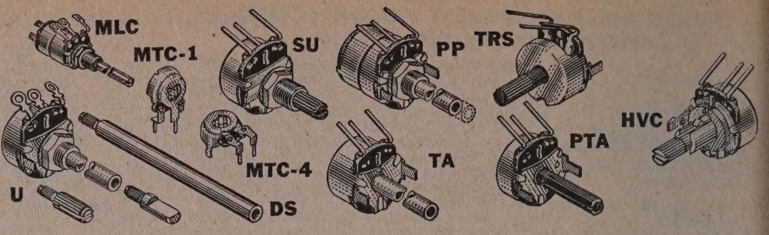
TAB MOUNT—NYLON SHAFT

Same as TA except has ¼″ dia. x 1″ FMS nylon shaft. Furn. with 2″ shaft extender.

Mallory PTA Midgetrols—Net... **$0.64**

Mall. No.	Ohms	†	Mall. No.	Megs	†
PTA52L	500	4	**PTA754L**	750K*	4
PTA751L	750	4	**PTA16L**	1	4
PTA152L	1500	4	**PTA1254L**	1.25	4
PTA252L	2500	4	**PTA26L**	2	4
PTA352L	3500	4	**PTA355L**	3.5	4
PTA53L	5000	4	**PTA46A**	4	1
PTA54L	50K	4	**PTA56R**	5	2
PTA15L	100K	4	**PTA56L**	5	4
PTA35L	300K	4	**PTA755L**	7.5	4
PTA55R	500K	2	**PTA855L**	8.5	4
PTA55L	500K	4			

*Ohms. †Taper.



TAB MOUNT—REVERSE NYLON SHAFT

Same as PTA except ¼″ dia. nylon shaft projects ¾″ out REAR of control. Screwdriver slot in mounting end of shaft.

Mallory TRS Midgetrols—Net... **$0.58**

Mall. No.	Ohms	†	Mall. No.	Ohms	†
TRS12L	100	4	**TRS44L**	40K	4
TRS351L	350	4	**TRS74L**	70K	4
TRS751L	750	4	**TRS15A**	100K	1
TRS152L	1500	4	**TRS15L**	100K	4
TRS152R	1500	2	**TRS25L**	200K	4
TRS252L	1500	4	**TRS254A**	250K	1
TRS23A	2K	1	**TRS254L**	250K	4
TRS23L	2K	4	**TRS55L**	500K	4
TRS53L	5K	4	**TRS754L**	750K	4
TRS153L	15K	4	**TRS16L**	1 M	4
TRS153-DT14	15K*	4	**TRS26A**	2 M	1
			TRS26L	2 M	4
TRS253L	25K	4	**TRS36L**	3 M	4
TRS-34T14	30K	4	**TRS46A**	4 M	1
			TRS56L	5 M	4

*Taps at 5K and 10K ohms. †Taper.

BUSHING MOUNT WITH P-P SWITCH

Standard U control with SPST 6 amps at 125 VAC push-pull switch, UL Approved. Shaft ¼″ dia. x 2″ FMS. Furnished with knob adapters and hex nut.

Mallory Number	Resis., Ohms	Tap, Ohms	Taper	Net Each
PP13R	1K	....	2	**$1.45**
PP252R	2.5K	....	2	**1.45**
PP253R	25K	....	2	**1.45**
PP15A	100K	....	1	**1.45**
PP254A	250K	....	1	**1.45**
PP254DT154	250K	100K–150K	4	**1.71**
PP55A	500K	....	1	**1.45**
PP55L	500K	....	4	**1.45**
PP55T254	500K	250K	1	**1.71**
PP16A	1 meg	....	1	**1.45**
PP16L	1 meg	....	4	**1.45**
PP16T15	1 meg	100K	1	**1.71**
PP16T25	1 meg	200K	1	**1.71**
PP16DT55	1 meg	250K–500K	4	**1.71**
PP16T55	1 meg	500K	2	**1.71**
PP26A	2 megs	....	1	**1.45**
PP26DT16	2 megs	500K–1 meg	1	**1.71**
PP26T16	2 megs	1 meg	4	**1.71**
PP36DT26	3 megs	1 & 2 megs	4	**1.71**
PP36L	3 megs	....	4	**1.45**
PP46T26	4 megs	2 megs	4	**1.71**
PP56L	5 megs	....	4	**1.45**

SWITCH/CIRCUIT BREAKER

AC Switch/Circuit Breaker. Use with U, UT, UDT, TA or PTA Controls.

Mallory No.	Oper. Current	Break Current	Net Each
USB29	1.6A	2.5A	**$1.05**

SPECIAL CARBON ELEMENT FOCUS CONTROL

Especially designed to withstand high voltage surges in color TV sets. Available in two tab mounting configurations. Nylon shaft, ¼″ dia. x 1½″ h., FMS.

Mallory No.	Shaft	Resis.	Taper	Net Each
FCT17L	Front	10 meg	4	**$0.91**
FCT156L	Front	15 meg	4	**.91**
FCR156L	Rear	15 meg	4	**.91**

HIGH VOLTAGE COLOR CONTROL

To isolate control mounting from up to 4000 volts rms. Nylon insulating mounting plate and ¼″ dia. x 1⅛″ FMS nylon shaft.

Mallory HVC Midgetrols—Net... **$1.02**

Mallory No.	Resistance	Taper
HVC63L	6000 ohms	4
HVC155L	1.5 megs	4
HVC355L	3.5 megs	4

SWITCHES, SHAFT EXTENDERS

Switches for U, UT, UDT, TA or PTA controls.

Mall. No.	Description	Net
US26*	SPST, 6 amps at 125 VAC	**$0.45**
US26T	SPST, w/dummy terminal	**.55**
US27	DPST, 6 amps at 125 VAC	**.55**
US28	SPDT, 3 amps at 125 VAC	**.55**
DS36	¼″ dia. x 2¹³⁄₁₆″	**.68**
DS37	³⁄₁₆″ dia. x 2¼″	**.68**

*Flame retardant, UL Approved.

½″ SUBMINIATURE CONTROLS

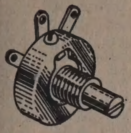
Only ½″ dia. Rated ¼ watt linear, ⅛ watt audio. ¼″-32 x ¼″ bushing with nut. Shaft: ⅛″ dia. x 1⁷⁄₁₆″ FMS, MLC (steel); ⅛″ dia. x ⁹⁄₁₆″ FMS, MLCN (nylon). SPST switch rated 3 amps at 125 VAC, UL Approved. MTC has open screwdriver slot. **Type MLC Bushing Mount.**

Mallory No.	Ohms	Taper	Switch	Net
MLC13L	1000	4	....	**$1.23**
MLC222LS	2200	4	SPST	**2.01**
MLC252A	2500	1	....	**1.23**
MLC252AS	2500	1	SPST	**2.01**
MLC53A	5000	1	....	**1.23**
MLC53AS	5000	1	SPST	**2.01**
MLC53L	5000	4	....	**1.23**
MLC53LS	5000	4	SPST	**2.01**
MLC14A	10K	1	....	**1.23**
MLC14AS	10K	1	SPST	**2.01**
MLC14L	10K	4	....	**1.23**
MLC54L	50K	4	....	**1.23**
MLC15A	100K	1	....	**1.23**
MLC15AS	100K	1	SPST	**2.01**
MLC15L	100K	4	....	**1.23**
MLC25L	200K	4	....	**1.23**
MLC254L	250K	4	....	**1.23**
MLC55A	500K	1	....	**1.23**
MLC55AS	500K	1	SPST	**2.01**
MLC55LS	500K	4	SPST	**2.01**
MLCN55A	500K	1	....	**1.23**
MLCN55L	500K	4	....	**1.23**
MLC16AS	1 meg	1	SPST	**2.01**
MLC16LS	1 meg	4	SPST	**2.01**
MLCN16A	1 meg	1	....	**1.23**
MLCN16L	1 meg	4	....	**1.23**

Type MTC PT Mt. Linear taper.
Net Each.......................... **$0.39**

Vert. Mtg.	Horiz. Mtg.	Resis., Ohms
MTC12L1	**MTC12L4**	100
MTC22L1	**MTC22L4**	200
MTC251L1	**MTC251L4**	250
MTC32L1	**MTC32L4**	300
MTC52L1	**MTC52L4**	500
MTC751L1	**MTC751L4**	750
MTC13L1	**MTC13L4**	1000
MTC152L1	**MTC152L4**	1500
MTC23L1	**MTC23L4**	2000
MTC252L1	**MTC252L4**	2500
MTC33L1	**MTC33L4**	3000
MTC53L1	**MTC53L4**	5000
MTC63L1	**MTC63L4**	6000
MTC682L1	**MTC682L4**	6800
MTC14L1	**MTC14L4**	10K
MTC153L1	**MTC153L4**	15K
MTC24L1	**MTC24L4**	20K
MTC253L1	**MTC253L4**	25K
MTC54L1	**MTC54L4**	50K
MTC15L1	**MTC15L4**	100K
MTC124L1	**MTC124L4**	120K
MTC184L1	**MTC184L4**	180K
MTC254L1	**MTC254L4**	250K
MTC3253L1	**MTC3253L4**	325K
MTC454L1	**MTC454L4**	450K
MTC55L1	**MTC55L4**	500K
MTC16L1	**MTC16L4**	1 meg
MTC26L1	**MTC26L4**	2 megs
MTC355L1	**MTC355L4**	3.5 megs

MALLORY Wire-Wound Controls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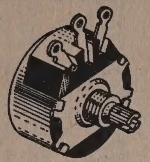
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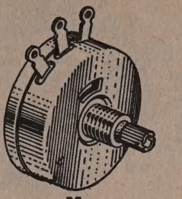
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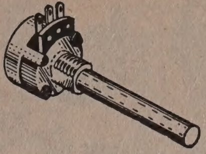
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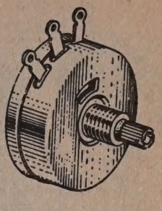

MG

2 WATT TYPE C

Rated 2 watts at 40° C. 1 3/64″ diameter. **Mech. Rotation:** 280°. **Elec. Rotation:** 255°. **Resis. Tolerance:** ±10%. Contact arm grounded. **Bushing:** ⅜″-32 x ⅜″. **Shaft:** ¼″ dia. x ¾″ FMS with screwdriver slot. Furn. with nut.

POTENTIOMETERS

Mallory No.	Ohms Resis.	Carrying Capacity in Amps	Net Each
C6P	6	.58	$1.17
C10P	10	.45	1.17
C20P	20	.32	1.17
C50P	50	.2	1.17
C100P	100	.14	1.17
C200P	200	.1	1.17
C400P	400	.07	1.17
C1MP	1K	.045	1.30
C3MP	3K	.025	1.30
C5MP	5K	.02	1.59
C6MP	6K	.018	1.59
C10MP	10K	.014	1.59

RHEOSTATS*

Mallory No.	Ohms Resis.	Carrying Capacity in Amps	Net Each
C6R	6	.58	$1.00
C10R	10	.45	1.00
C20R	20	.32	1.00
C30R	30	.26	1.00
C40R	40	.2	1.00
C100R	100	.14	1.00

*"Open" or "off" position counterclockwise.

3 WATT TYPE R

Standard TV wire-wound control rated 3 watts at 40° C. 1 7/64″ diameter. **Mech. Rotation:** 297°. **Elec. Rotation:** 290°. **Voltage Breakdown:** 900 VAC rms. **Bushing:** ⅜″-32 x ¼″. **Shaft:** ¼″ dia. x 19/32″ FMS, knurled with screwdriver slot. Furn. with nut. See listing below for switches for R controls.

Mallory No.	Ohms Resistance	Net Each
R2L	2	$1.00
R5L	5	1.00
R6L	6	1.00
R8L	8	1.00
R10L	10	1.00
R15L	15	1.00
R20L	20	1.00
R25L	25	1.00
R30L	30	1.00
R50L	50	1.00
R100L	100	1.00
R250L	250	1.00
R500L	500	1.00
R750L	750	1.00
R1000L	1000	1.00
R1500L	1500	1.00
R2500L	2500	1.00
R3000L	3000	1.00
R5000L	5000	1.00
R7500L	7500	1.17
R10ML	10000	1.17
R15ML	15000	1.17
R20ML	20000	1.17

SWITCH FOR TYPE R POTS

Mall. No.	Description	Net Each
US30	Single Pole, Single Throw	$0.45

4 WATT TYPE M

Rated 4 watts at 40° C. 1⅝″ diameter. **Mech. Rotation:** 294°. **Elec. Rotation:** 275°. **Resis. Tolerance:** ±10%. **Voltage Breakdown:** 900 VAC rms. **Bushing:** ⅜″-32 x ⅜″ FMS. **Shaft:** ¼″ dia. x ¾″ FMS, knurled with screwdriver slot. Furn. with nut.

POTENTIOMETERS

Mallory Number	Ohms Resis.	Capacity in Amps	Net Each
M1PK	1	2.00	$1.46
M3PK	3	1.15	1.46
M6PK	6	82	1.46
M15PK	15	.52	1.46
M20PK	20	.45	1.46
M25PK	25	.40	1.46
M30PK	30	.37	1.46
M40PK	40	.32	1.46
M50PK	50	.28	1.46
M60PK	60	.26	1.46
M75PK	75	.23	1.46
M100PK	100	.20	1.46
M200PK	200	.14	1.46
M300PK	300	.116	1.46
M400PK	400	10	1.46
M500PK	500	.09	1.46
M600PK	600	.082	1.46
M1MPK	1K	.063	1.46
M1.5MPK	1.5K	.052	1.46
M2MPK	2K	.045	1.46
M2.5MPK	2.5K	.04	1.46
M3MPK	3K	.037	1.46
M4MPK	4K	.032	1.46
M5MPK	5K	.028	1.46
M10MPK	10K	.02	1.46
M15MPK	15K	.016	1.59
M20MPK	20K	.014	1.59
M25MPK	25K	.013	1.59
M50MPK	50K	.009	1.88
M70MPK	70K	.0075	1.88
M75MPK	75K	.0073	2.66
M100MPK	100K	.0062	2.66

CENTER-TAPPED POTENTIOMETERS

Mallory Number	Ohms Resis.	Capacity in Amps	Net Each
MT10PK	10	.63	$1.43
MT20PK	20	.45	1.43

RHEOSTATS*

Mallory Number	Ohms Resis.	Capacity in Amps	Net Each
M05RK	0.5	2.80	$1.00
M4RK	4	1.00	1.00
M6RK	6	.82	1.00
M10RK	10	.63	1.00
M15RK	15	.52	1.00
M20RK	20	.45	1.00
M25RK	25	.40	1.00
M30RK	30	.37	1.00
M40RK	40	.32	1.00
M50RK	50	.28	1.00
M60RK	60	.26	1.00
M75RK	75	.23	1.00
M100RK	100	.20	1.00

*"Open" or "Off" position counterclockwise.

STANDARD TAPER FOR MALLORY WIRE-WOUND CONTROLS IS NORMAL LINEAR TAPER. OTHER TAPERS MAY BE SPECIFIED ON SPECIAL ORDER.

5 WATT TYPE VW SUBMINIATURE

Rated 5 watts at 35° C. ¾″ diameter. **Mech. Rotation:** 305°. **Elec. Rotation:** 275°. **Resis. Tolerance:** ±10%. **Voltage Breakdown:** 900 VAC rms. **Bushing:** ⅜″-32 x ⅜″. **Shaft:** ¼″ dia. x 2½″ FMS. Furn. with nut and lug.

Mallory No.	Ohms Resistance	Net Each
VW1	1	$1.49
VW2	2	1.49
VW3	3	1.49
VW5	5	1.49
VW6	6	1.49
VW8	8	1.49
VW10	10	1.49
VW15	15	1.49
VW20	20	1.49
VW25	25	1.49
VW30	30	1.49
VW40	40	1.49
VW50	50	1.49
VW60	60	1.49
VW75	75	1.49
VW100	100	1.49
VW200	200	1.49
VW250	250	1.49
VW300	300	1.49
VW400	400	1.49
VW500	500	1.49
VW600	600	1.49
VW750	750	1.49
VW1K	1000	1.49
VW1P5K	1500	1.56
VW2K	2000	1.56
VW2P5K	2500	1.56
VW3K	3000	1.56
VW4K	4000	1.56
VW5K	5000	1.56
VW7P5K	7500	1.62
VW10K	10000	1.62
VW15K	15000	1.68
VW20K	20000	1.68
VW25K	25000	1.78

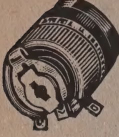
12½ WATT TYPE MG

Rated 12½ watts at 35° C. 1⅝″ diameter. **Mech. Rotation:** 294°. **Elec. Rotation:** 275°. **Resis. Tolerance:** ±10%. **Voltage Breakdown:** 900 VAC rms. **Bushing:** ⅜″-32 x ⅜″ FMS. **Shaft:** ¼″ dia. x ¾″ FMS, knurled with screwdriver slot. Furn. with nut.

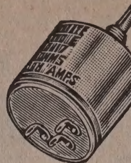
Mallory No.	Ohms Resistance	Net Each
MG1	1	$2.35
MG3	3	2.35
MG6	6	2.35
MG10	10	2.35
MG15	15	2.35
MG20	20	2.35
MG25	25	2.35
MG50	50	2.35
MG100	100	2.35
MG200	200	2.35
MG500	500	2.35
MG600	600	2.35
MG1000	1000	2.40
MG1500	1500	2.40
MG2000	2000	2.40
MG2500	2500	2.40
MG3000	3000	2.40
MG4000	4000	2.40
MG5000	5000	2.40
MG10K	10K	2.50
MG15K	15K	2.50
MG20K	20K	2.50
MG25K	25K	2.50
MG50K	50K	2.70
MG100K	100K	2.94

OHMITE Rheostats, Couplings

VITREOUS ENAMELED RHEOSTATS, TANDEM COUPLING KITS



"E"



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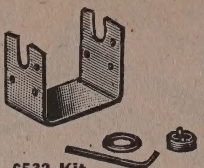
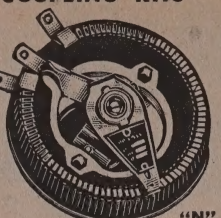


6532 Kit



"N"

Wire-wound vitreous enameled rheostats with solid ceramic core. Pivoted, universal action. Metal-graphite contact brushes, varied to fit current and resistance. All Series "A" units are listed under UL Reexamination Service except silicone-ceramic coated types. Current ratings listed are in free air; when enclosed, currents should be reduced up to 50% depending on ventilation. *Silicone-ceramic coated.

Model "E" Rheostats, 12½-Watt—Rating on metal panel. Size, ⅞" dia. x 11/16" d. behind panel.

No.	Res., Ohms	Net Each, Lots of				
		1-4	5-9	10-24	25-49	50Up
0101	1	$6.30	$5.36	$4.22	$3.47	$2.65
0102	2	6.30	5.36	4.22	3.47	2.65
0102A	2.5	6.30	5.36	4.22	3.47	2.65
0103	3	6.30	5.36	4.22	3.47	2.65
0103A	5	6.30	5.36	4.22	3.47	2.65
0104	6	6.30	5.36	4.22	3.47	2.65
0105	8	6.30	5.36	4.22	3.47	2.65
0106	10	6.30	5.36	4.22	3.47	2.65
0107	15	5.50	4.68	3.69	3.03	2.31
0108	25	5.50	4.68	3.69	3.03	2.31
0109	35	5.50	4.68	3.69	3.03	2.31
0110	50	5.50	4.68	3.69	3.03	2.31
0111	75	5.50	4.68	3.69	3.03	2.31
0112	100	5.50	4.68	3.69	3.03	2.31
0113	125	5.50	4.68	3.69	3.03	2.31
0113A	150	5.50	4.68	3.69	3.03	2.31
0114	175	5.50	4.68	3.69	3.03	2.31
0114A	200	5.50	4.68	3.69	3.03	2.31
0115	250	5.50	4.68	3.69	3.03	2.31
0116	350	5.50	4.68	3.69	3.03	2.31
0117	500	5.50	4.68	3.69	3.03	2.31
0118	750	5.50	4.68	3.69	3.03	2.31
0119	1000	6.30	5.36	4.22	3.47	2.65
0120	1500	6.30	5.36	4.22	3.47	2.65
0121	2500	6.30	5.36	4.22	3.47	2.65
0122*	3500	7.60	6.46	5.09	4.18	3.19
0123*	5000	7.60	6.46	5.09	4.18	3.19
4190*	7500	7.90	6.72	5.29	4.35	3.32
4191*	10K	7.90	6.72	5.29	4.35	3.32
4192*	12.5K	8.60	7.31	5.76	4.73	3.61
4193*	15K	8.60	7.31	5.76	4.73	3.61

Model "E" Enclosed Rheostats—Same, but in corrosion-resistant dust-proof case. Use prefix **W** (**W**0101). Mt. on ⅛" panels.

Range, Ohms	Net Each, Lots of			
	1-4	5-9	10-24	25 Up
1–10	$ 8.70	$7.40	$5.83	$4.79
15–750	8.00	6.80	5.36	4.40
1K–2.5K	8.70	7.40	5.83	4.79
3.5K*, 5K*	9.60	8.16	6.43	5.28
7.5K*, 10K*	9.80	8.33	6.57	5.39
12.5K*, 15K*	11.70	9.95	7.84	6.44

Model "H" Rheostats, Series A—25-Watt—Size, 1 9/16" dia. x 1⅜" d. behind panel.

No.	Res., Ohms	Net Each, Lots of				
		1-4	5-9	10-24	25-49	50Up
0140	1	$6.30	$5.36	$4.22	$3.47	$2.65
0141	2	6.30	5.36	4.22	3.47	2.65
0142	3	6.30	5.36	4.22	3.47	2.65
0143	6	6.30	5.36	4.22	3.47	2.65
0144	8	6.30	5.36	4.22	3.47	2.65
0145	10	6.30	5.36	4.22	3.47	2.65
0146	15	5.50	4.68	3.69	3.03	2.31
0147	25	5.50	4.68	3.69	3.03	2.31
0148	35	5.50	4.68	3.69	3.03	2.31
0149	50	5.50	4.68	3.69	3.03	2.31
0150	75	5.50	4.68	3.69	3.03	2.31
0151	100	5.50	4.68	3.69	3.03	2.31
0152	125	5.50	4.68	3.69	3.03	2.31
0153	175	5.50	4.68	3.69	3.03	2.31
0154	250	5.50	4.68	3.69	3.03	2.31
0155	350	5.50	4.68	3.69	3.03	2.31
0156	500	5.50	4.68	3.69	3.03	2.31
0157	750	5.50	4.68	3.69	3.03	2.31
0158	1000	6.30	5.36	4.22	3.47	2.65
0159	1500	6.30	5.36	4.22	3.47	2.65
0160	2500	6.30	5.36	4.22	3.47	2.65
0161	3500	7.10	6.04	4.76	3.91	2.98
0162	5000	7.10	6.04	4.76	3.91	2.98
4200*	7500	7.40	6.29	4.96	4.07	3.11
4201*	10K	7.40	6.29	4.96	4.07	3.11
4202*	15K	7.90	6.72	5.29	4.35	3.32
4203*	20K	8.40	7.14	5.63	4.62	3.53
4204*	25K	9.20	7.82	6.16	5.06	3.86

Model "J" Rheostats, Series A—50-Watt—Size, 2 5/16" dia. x 1⅜" d. behind panel.

No.	Res., Ohms	Net Each, Lots of				
		1-4	5-9	10-24	25-49	50Up
0308	0.5	$7.40	$6.29	$4.96	$4.07	$3.11
0309	1	7.40	6.29	4.96	4.07	3.11
0310	2	7.40	6.29	4.96	4.07	3.11
0311	4	7.40	6.29	4.96	4.07	3.11
0312	6	7.40	6.29	4.96	4.07	3.11
0313	8	6.60	5.61	4.42	3.63	2.77
0314	12	6.60	5.61	4.42	3.63	2.77
0315	16	6.60	5.61	4.42	3.63	2.77
0316	22	6.60	5.61	4.42	3.63	2.77
0317	35	6.60	5.61	4.42	3.63	2.77
0318	50	6.60	5.61	4.42	3.63	2.77
0319	80	6.60	5.61	4.42	3.63	2.77
0320	125	6.60	5.61	4.42	3.63	2.77
0321	150	6.60	5.61	4.42	3.63	2.77
0322	225	6.60	5.61	4.42	3.63	2.77
0323	300	6.60	5.61	4.42	3.63	2.77
0324	500	6.60	5.61	4.42	3.63	2.77
0325	800	7.00	5.95	4.69	3.85	2.94
0326	1000	7.00	5.95	4.69	3.85	2.94
0327	1600	7.00	5.95	4.69	3.85	2.94
0328	2500	7.00	5.95	4.69	3.85	2.94
0329	3500	7.40	6.29	4.96	4.07	3.11
0330	5000	7.40	6.29	4.96	4.07	3.11
0331	8K	7.40	6.29	4.96	4.07	3.11
0332	10K	7.40	6.29	4.96	4.07	3.11
4210*	15K	8.40	7.14	5.63	4.62	3.53
4211*	20K	9.40	7.99	6.30	5.17	3.95
4212*	25K	10.40	8.84	6.97	5.72	4.37
4213*	30K	11.50	9.78	7.71	6.33	4.83
4214*	40K	13.20	11.22	8.84	7.26	5.54
4215*	50K	14.70	12.50	9.85	8.09	6.17

Model "G" Rheostats, Series A—75-Watt—Size, 2¾" dia. x 1¾" d. behind panel.

No.	Res., Ohms	Net Each, Lots of			
		1-4	5-9	10-24	25 Up
1100	0.5	$ 9.80	$8.33	$6.57	$5.39
1101	1	9.80	8.33	6.57	5.39
1102	2	9.80	8.33	6.57	5.39
1103	3	9.80	8.33	6.57	5.39
1104	5	9.80	8.33	6.57	5.39
1105	7.5	9.80	8.33	6.57	5.39
1106	10	9.80	8.33	6.57	5.39
1107	16	8.30	7.06	5.56	4.57
1108	25	8.30	7.06	5.56	4.57
1109	50	8.30	7.06	5.56	4.57
1110	75	8.30	7.06	5.56	4.57
1111	100	8.30	7.06	5.56	4.57
1112	200	8.30	7.06	5.56	4.57
1113	300	8.30	7.06	5.56	4.57
1114	400	8.30	7.06	5.56	4.57
1115	500	8.30	7.06	5.56	4.57
1116	750	9.80	8.33	6.57	5.39
1117	1000	9.80	8.33	6.57	5.39
1118	1500	9.80	8.33	6.57	5.39
1119	2000	9.80	8.33	6.57	5.39
1120	2500	9.80	8.33	6.57	5.39
1121	5000	10.40	8.84	6.97	5.72
1122	7500	11.30	9.61	7.57	6.22
1123	10K	11.30	9.61	7.57	6.22

Model "K" Rheostats, Series A—100-Watt—Size, 3⅛" dia. x 1¾" d. behind panel.

0440	0.5	$10.60	$ 9.01	$7.10	$5.83
0441	1	10.60	9.01	7.10	5.83
0442	2	10.60	9.01	7.10	5.83
0443	3	10.60	9.01	7.10	5.83
0444	5	10.60	9.01	7.10	5.83
0445	7.5	10.60	9.01	7.10	5.83
0446	10	10.60	9.01	7.10	5.83
0447	16	9.70	8.25	6.50	5.34
0448	25	9.70	8.25	6.50	5.34
0449	50	9.70	8.25	6.50	5.34
0450	75	9.70	8.25	6.50	5.34
0451	100	9.70	8.25	6.50	5.34
0452	200	9.70	8.25	6.50	5.34
0453	300	9.70	8.25	6.50	5.34
0454	400	9.70	8.25	6.50	5.34
0455	500	9.70	8.25	6.50	5.34
0456	750	9.70	8.25	6.50	5.34
0457	1000	10.60	9.01	7.10	5.83
0458	1500	10.60	9.01	7.10	5.83
0459	2000	10.60	9.01	7.10	5.83
0460	2500	10.60	9.01	7.10	5.83
0461	5000	13.10	11.14	8.78	7.21
0462	7500	14.20	12.07	9.51	7.81
0463	10K	14.90	12.67	9.98	8.20

Model "L" Rheostats, Series A—150-Watt—Size, 4" dia. x 2" d. behind panel.

No.	Res., Ohms	Net Each, Lots of			
		1-4	5-9	10-24	25 Up
0524	0.5	$13.90	$11.82	$ 9.31	$ 7.65
0525	1	13.90	11.82	9.31	7.65
0526	2	13.90	11.82	9.31	7.65
0527	3	13.90	11.82	9.31	7.65
0528	5	13.90	11.82	9.31	7.65
0529	7.5	13.90	11.82	9.31	7.65
0530	10	13.90	11.82	9.31	7.65
0531	15	13.90	11.82	9.31	7.65
0532	25	12.90	10.97	8.64	7.10
0533	35	12.90	10.97	8.64	7.10
0534	50	12.90	10.97	8.64	7.10
0535	75	12.90	10.97	8.64	7.10
0536	100	12.90	10.97	8.64	7.10
0537	150	12.90	10.97	8.64	7.10
0538	200	12.90	10.97	8.64	7.10
0539	250	12.90	10.97	8.64	7.10
0540	350	12.90	10.97	8.64	7.10
0541	500	12.90	10.97	8.64	7.10
0542	750	13.90	11.82	9.31	7.65
0543	1250	13.90	11.82	9.31	7.65
0544	1800	14.90	12.67	9.98	8.20
0545	2250	14.90	12.67	9.98	8.20
0546	3000	14.90	12.67	9.98	8.20
0547	4500	16.00	13.60	10.72	8.80
0548	7500	17.75	15.09	11.89	9.76
0549	10K	21.75	18.49	14.57	11.96

Model "P" Rheostats, Series A—225-Watt—Size, 5" dia. x 2⅛" d. behind panel. Net Ea., 1–2. **$20.75**; Net Ea., 3 Up. **$17.64**

Model "N" Rheostats, Series A—300-Watt—Size, 6" dia. x 2⅜" d. behind panel. Net Ea., 1–2. **$23.25**; Net Ea., 3 Up. **$19.76**

Resis., Ohms	Model "P"	Model "N"	Resis., Ohms	Model "P"	Model "N"
1	1250	0650	150	1262	0662
2	1251	0651	200	1263	0663
3	1252	0652	300	1264	0664
4	1253	0653	400	1265	0665
5	1254	0654	700	1266	0666
7.5	1255	0655	900	1267	0667
10	1256	0656	1200	1268	0668
15	1257	0657	1500	1269	0669
25	1258	0658	1750	1270	0670
50	1259	0659	2000	1270A	0670A
75	1260	0660	2500	1271	0671
100	1261	0661			

Model "R" Rheostats, 500-Watt—Size, 8" dia. x 2⅛" d. behind panel.
Net Ea., 1–2. **$27.00**; Net Ea., 3 Up. **$22.95**

Model "T" Rheostats, 750-Watt—Size, 10" dia. x 3" d. behind panel.
Net Ea., 1–2. **$39.00**; Net Ea., 3 Up. **$34.85**

Model "U" Rheostats, 1000-Watt—Size, 12" dia. x 3" d. behind panel.
Net Ea., 1–2. **$46.00**; Net Ea., 3 Up. **$41.40**

Resis., Ohms	Model "R"	Model "T"	Model "U"
1	0849	1300	1450
1.5	0850	1301	1451
2	0851	1302	1452
2.5	0852	1303	1453
3	0853	1304	1454
4	0854	1305	1455
5	0855	1306	1456
8	0856	1307	1457
10	....	1308	1458
12.5	0857	1309	1459
16	0858	1310	1460
25	0859	1311	1461
40	0860	....	....
50	0872	1312	1462
75	....	....	1463
80	0861	1313	....
100	....	1314	1464
125	0862	....	....
160	....	1315	....
175	0863	....	1465
200	....	1316	....
225	....	....	1466
250	0864	....	....
300	....	1317	1467
325	0865	....	....
400	....	1318	1468
500	0866	....	1469
600	....	1319	....
750	0867	1320	1470
1000	0868	....	1471
1200	....	1321	....
1500	0869	....	1472
1800	....	1322	....
2000	0870	1322A	....
2500	0871	1323	1473

Tandem Coupling Kits—Includes steel "U" frame, coupling with set screw, mica washer, Allen wrench and instructions.

No.	For Models	Net Each, Lots of			
		1-4	5-9	10-24	25 Up
6532	H, J	$2.75	$2.34	$1.84	$1.51
6533	G, K, L	3.45	2.93	2.31	1.90
6591	E	2.75	2.34	1.84	1.51

OHMITE Quality Controls

MODEL C MINIATURE 7.5-WATT RHEOSTATS

Ultra-miniature 7.5-watt (at 40° C ambient) power rheostat sets the standards for high performance with minimum size. Resistance element wound on ceramic ring, coated with vitreous enamel and joined to ceramic base. Completely insulated and enclosed in corrosion-resistant case, it is designed to operate at 340° C max. hot spot temperature. **Power Rating:** 7.5 watts on steel panel 4″ sq. x .04″ th. at 40° C; 5 watts in non-metallic panel or transistor socket. **Resistance Tolerance:** ±10%. **Torque:** 1–3 oz.-in. **Rotation:** 300° (±5°). **Knob:** No. 5151 recommended (not supplied). **Shaft:** ⅛″ dia. with screwdriver slot for standard (with knob) or locking bushing. **Size:** Body .515″ dia. x ⁹⁄₁₆″ lg.; bushing ¼″-32 flatted and threaded x ¼″ lg. for panels to ⅛″ thick. Lug terminals take 22 ga. solid or 24 ga. stranded wire; fit EIA type TS–E3R100 transistor socket. Taper pin terminals for quick-connect connectors, or spade lug terminals available on special order.

NET PRICES

Resistance Range, Ohms	With Standard Shaft Net Each, Lots of 1-4	5-9	10 Up	With Locking Shaft Net Each, Lots of 1-4	5-9	10 Up
10 thru 750	$ 9.50	$8.08	$5.70	$11.60	$ 8.93	$6.26
1000 thru 2500	10.80	9.18	6.48	12.90	9.93	6.97
3500 and 5000	11.30	9.61	6.78	13.40	10.32	7.24

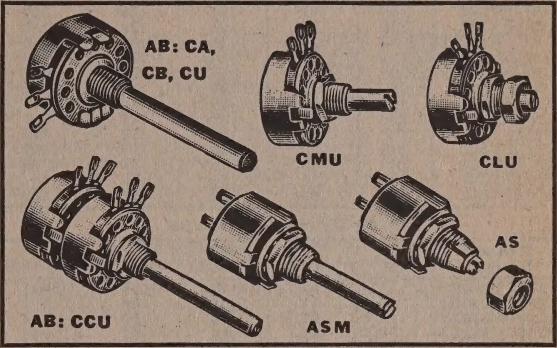
● **FITS TRANSISTOR SOCKETS**

STOCK VALUES

Ohms	Amps	Ohmite Model No. for Std. Shaft	Ohmite Model No. for Locking Shaft
10	.86	4908	4948
15	.71	4909	4949
25	.55	4910	4950
35	.46	4911	4951
50	.39	4912	4952
75	.32	4913	4953
100	.27	4914	4954
150	.22	4915	4955
200	.19	4916	4956
250	.17	4917	4957
350	.15	4918	4958
500	.12	4919	4959
750	.1	4920	4960
1000	.086	4921	4961
1500	.071	4922	4962
2500	.055	4923	4963
3500	.046	4924	4964
5000	.039	4925	4965

MOLDED COMPOSITION POTENTIOMETERS

Available in MIL-R-94 Styles RV4N, RV4L, RV6L, RV6N. High reliability for universal use as rheostats or potentiometers in industrial, military or other high quality electronic devices. All units provide a very large safety factor; overloads of short duration can be safely absorbed. Positive, trouble-free connections assured with terminals molded directly into control elements. Resistance and collector tracks are bridged by a molded composition brush for long life. Noise level is exceedingly low; actually decreases with use of the unit. Various elements of the unit are molded together at one time into a single, integral structure that is sealed against moisture. A metal cover is sealed to the element to electrically shield the internal parts; a synthetic resin is the sealing agent with non-mercurial fungicide to assure dust-tight, splash-proof and fungus resistant safety. Molding method permits predetermination of resistance-rotation characteristics to such a fine degree that ideal curves are followed quite closely. Thus, a single element with a smoothly graduated resistance change produces modified logarithmic tapers in AB units. **Type AB Controls:** Rated 2 watts at 70° C; 500 volts, rms, 60-Hz max. continuous across resistance elements: 1000 V rms for 1 sec., high potential test. Size, 1⁵⁄₃₂″ dia. Available in Style CMU, single control with ⅞″ slotted shaft, linear taper, MIL Style RV4N; Style CU single control with 2″ unslotted shaft, linear taper; Style CA clockwise modified log taper version of CU; Style CB, counter-clockwise modified log taper version of CU; Style CLU single control with locking-type shaft, linear taper MIL Style RV4L; and, Style CCU dual control with 2″ shaft, linear taper. **Type AS Miniature Controls:** Rated ½ watt at 70° C; 350 volts, rms, 60-Hz max. continuous voltage across resistance elements; 750 V rms for 1 sec., high potential test. Size, ½″ dia. Available with locking type shaft, slotted for screwdriver with collet bushing and conical nut; linear taper, MIL Style RV6L; or, ⅞″ lg. shaft for knob control, standard bushing MIL Style RV6N. **Temp. Range:** −55° C to +120° C, operating; derate linearly from full rating at +70° C to zero at +120° C, for linear taper; other tapers, multiply ratings obtained for linear taper by 0.5. **Humidity and Corrosion:** Temporary resistance changes less than 5% after exposure for 100 hours at 40° C to 95% relative humidity. Meets 200 hr. salt spray corrosion test QQ-M-151, military specification. **Rotation:** 312° ±3°, Type AB without on-off switch; 333°, ±3°, with switch. Type AS, 295°, ±5°.



TYPE AB NET PRICES

Ohmite No.	Description	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249	250 Up
CMU	⅞″ shaft, sgle. MIL	$1.95	$1.75	$1.70	$1.62	$1.26	$0.97
CU	2″ shaft, linear	1.95	1.75	1.70	1.62	1.26	.97
CA	2″ shaft, CW log	2.25	2.02	1.97	1.87	1.32	1.00
CB	2″ shaft, CCW log	2.25	2.02	1.97	1.87	1.32	1.00
CLU	Locking shaft, MIL	2.55	2.29	2.24	2.12	1.41	1.09
CCU	Dual locking shaft	5.85	5.26	5.20	5.06	3.20	2.47

TYPE AS, ASM NET PRICES

Ohmite No.	Description	Net Each, Lots of 1-9	10-49	50-99	100 Up
AS	Locking shaft, min. MIL	$5.10	$4.59	$4.25	$2.71
ASM	⅞″ knob shaft, MIL	4.87	4.37	4.03	2.56

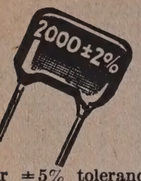
STOCK VALUES

Resistance Ohms ±10%	Type AB (1⁵⁄₃₂″ Dia.) Single, ⅞″ Shaft Style CMU Linear	Single, ⅞″ Shaft MIL Desig. RV4NAY	Single Unit 2″ Shaft Style CU Linear	Single Unit 2″ Shaft Style CA CW log	Single Unit 2″ Shaft Style CB CCW log	Locking Style CLU Linear	Locking MIL Desig. RV4LAY-	Dual Style CCU Linear	Type AS (½″ Dia.) Min. Locking Style AS Linear	Min. Locking MIL Desig. RV6LAY-	Min. ⅞″ Shaft Style ASM Linear	Min. ⅞″ Shaft MIL Desig. RV6NAY-
50	CMU5001	SD500A	CU5001	....	....	CLU5001	SA500A	....	....	....	....	....
100	CMU1011	SD101A	CU1011	....	....	CLU1011	SA101A	....	AS3601	SA101A	ASM6661	SD101A
150	CMU1511	SD151A	CU1511	....	....	CLU1511	SA151A	....	....	....	....	....
250	CMU2511	SD251A	CU2511	....	....	CLU2511	SA251A	....	AS3602	SA251A	ASM6662	SD251A
350	CMU3511	SD351A	CU3511	....	....	CLU3511	SA351A	....	....	....	....	....
500	CMU5011	SD501A	CU5011	....	....	CLU5011	SA501A	....	AS3603	SA501A	ASM6663	SD501A
750	CMU7511	SD751A	CU7511	....	....	CLU7511	SA751A	....	....	....	....	....
1,000	CMU1021	SD102A	CU1021	....	....	CLU1021	SA102A	....	AS3604	SA102A	ASM6664	SD102A
1,500	CMU1521	SD152A	CU1521	....	....	CLU1521	SA152A	....	....	....	....	....
2,500	CMU2521	SD252A	CU2521	....	....	CLU2521	SA252A	....	AS3605	SA252A	ASM6665	SD252A
3,500	CMU3521	SD352A	CU3521	....	....	CLU3521	SA352A	....	....	....	....	....
5,000	CMU5021	SD502A	CU5021	....	....	CLU5021	SA502A	....	AS3606	SA502A	ASM6666	SD502A
7,500	CMU7521	SD752A	CU7521	....	....	CLU7521	SA752A	....	....	....	....	....
10,000	CMU1031	SD103A	CU1031	....	CB1031	CLU1031	SA103A	CCU1031†	AS3607	SA103A	ASM6667	SD103A
15,000	CMU1531	SD153A	CU1531	....	....	CLU1531	SA153A	....	....	....	....	....
25,000	CMU2531	SD253A	CU2531	....	CB2531	CLU2531	SA253A	CCU2531†	AS3608	SA253A	ASM6668	SD253A
35,000	CMU3531	SD353A	CU3531	....	....	CLU3531	SA353A	....	....	....	....	....
50,000	CMU5031	SD503A	CU5031	....	CB5031	CLU5031	SA503A	CCU5031†	AS3609	SA503A	ASM6669	SD503A
75,000	CMU7531	SD753A	CU7531	....	....	CLU7531	SA753A	....	....	....	....	....
.1 meg	CMU1041	SD104A	CU1041	CA1041	....	CLU1041	SA104A	CCU1041†	AS3610	SA104A	ASM6670	SD104A
.15 meg	CMU1541	SD154A	CU1541	....	....	CLU1541	SA154A	....	....	....	....	....
.25 meg	CMU2541	SD254A	CU2541	CA2541	....	CLU2541	SA254A	CCU2541†	AS3611	SA254A	ASM6671	SD254A
.35 meg	CMU3541	SD354A	CU3541	....	....	CLU3541	SA354A	....	....	....	....	....
.5 meg	CMU5041	SD504A	CU5041	CA5041	....	CLU5041	SA504A	CCU5041†	AS3612	SA504A	ASM6672	SD504A
.75 meg*	CMU7542	SD754B	CU7542	....	....	CLU7542	SA754B	....	....	....	....	....
1.0 meg*	CMU1052	SD105B	CU1052	CA1052	....	CLU1052	SA105B	CCU1052†	AS3613	SA105B	ASM6673	SD105B
1.5 meg*	CMU1552	SD155B	CU1552	....	....	CLU1552	SA155B	....	....	....	....	....
2.0 meg*	CMU2052	SD205B	CU2052	....	....	CLU2052	SA205B	....	AS3684	SA205B	ASM6674	SD205B
2.5 meg*	CMU2552	SD255B	CU2552	CA2552	....	CLU2552	SA255B	....	AS3614	SA255B	ASM6675	SD255B
3.5 meg*	CMU3552	SD355B	CU3552	....	....	CLU3552	SA355B	....	....	....	....	....
5.0 meg*	CMU5052	SD505B	CU5052	....	....	CLU5052	SA505B	....	AS3615	SA505B	ASM6676	SD505B

*±20% tolerance. †Resistance shown is for each unit.

Arco Dur-Mica Capacitors

TYPE DM DUR-MICA DIPPED SILVERED MICA CAPACITORS



Highly reliable, compact silvered mica capacitors coated for maximum protection against moisture and temperature extremes. Meet or exceed MIL-C-5D and EIA standards for fixed mica capacitors. **Operating Temperature Range:** −55° C to +150° C. **Type DM:** Per MIL-C-5D. **Type SCDM:** Single coat of resin; thinner than regular DM-10's and DM-15's. To order, use prefix **SC. Tolerances Available:** ±10%, ±5%, ±2%, ±1%, ±½%, ±0.5 pF and ±1.0 pF. Prices are for ±5% tolerance (suffix **J**) unless otherwise noted. **Working Voltage:** As shown; MIL-C-5D indicated by sixth character in MIL number (e.g., CM05C**D**060D03): A=100, C=300, and D=500 WVDC.

TYPE DM-5—50 WVDC

Elmenco Number	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-4990
DM5EY680	68	$0.16	$0.15	$0.14	$0.127
DM5EY750	75	.17	.15	.14	.13
DM5EY820	82	.17	.15	.14	.13
DM5FY910	91	.18	.16	.15	.139
DM5FY101	100	.19	.17	.16	.147
DM5FY111	110	.20	.18	.17	.155
DM5FY121	120	.21	.19	.18	.161
DM5FY131	130	.22	.19	.18	.169
DM5FY151	150	.23	.21	.20	.183
DM5FY161	160	.24	.22	.21	.191
DM5FY181	180	.27	.24	.23	.208
DM5FY201	200	.29	.26	.25	.227
DM5FY221	220	.31	.28	.26	.241
DM5FY241	240	.33	.30	.28	.257
DM5FY251	250	.34	.30	.29	.263
DM5FY271	270	.35	.32	.30	.277
DM5FY301	300	.39	.35	.33	.317
DM5FY331	330	.42	.38	.36	.329
DM5FY361	360	.45	.40	.38	.35
DM5FY391	390	.48	.44	.41	.379

TYPE DM-5—300 WVDC

Elmenco Number	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-4990
DM5CC010A*	1	$0.11	$0.10	$0.09	$0.084
DM5CC020A*	2	.11	.10	.09	.084
DM5CC030A*	3	.11	.10	.09	.084
DM5CC040A*	4	.11	.10	.09	.084
DM5CC050A*	5	.11	.10	.09	.084
DM5CC060A*	6	.13	.12	.11	.10
DM5CC070A*	7	.13	.12	.11	.10
DM5CC080A*	8	.13	.12	.11	.10
DM5CC100J	10	.20	.18	.17	.157
DM5CC120J	12	.21	.19	.18	.161
DM5CC150J	15	.21	.19	.18	.161
DM5CC180J	18	.21	.19	.18	.161
DM5CC200J	20	.14	.13	.12	.108
DM5CC220J	22	.15	.14	.13	.117
DM5CC240J	24	.15	.14	.13	.117
DM5EC270J	27	.15	.14	.13	.117
DM5EC300J	30	.15	.14	.13	.117
DM5EC330J	33	.16	.14	.13	.117
DM5EC360J	36	.17	.15	.14	.129
DM5EC390J	39	.17	.15	.14	.129
DM5EC430J	43	.17	.15	.14	.129
DM5EC470J	47	.17	.15	.14	.129
DM5EC500J	50	.17	.15	.14	.129
DM5EC510J	51	.18	.16	.15	.139
DM5EC560J	56	.19	.17	.16	.147
DM5EC620J	62	.20	.18	.17	.155
DM5EC680J	68	.21	.19	.18	.17
DM5EC750J	75	.21	.19	.18	.164
DM5EC820J	82	.23	.21	.20	.183
DM5FC910J	91	.25	.23	.21	.197
DM5FC101J	100	.26	.24	.22	.205
DM5FC111J	110	.28	.25	.24	.219
DM5FC121J	120	.30	.27	.26	.235
DM5FA131J†	130	.25	.23	.21	.197
DM5FA151J†	150	.28	.25	.24	.219
DM5FA161J†	160	.29	.26	.25	.227
DM5FA181J†	180	.32	.29	.27	.249
DM5FA201J†	200	.35	.31	.29	.271

TYPE DM-10—500 WVDC

(SCDM-10 values and prices the same.) **C** characteristic 1–18 pF; **E** characteristic 20–82 pF; **F** characteristic 91 pF and up.

Elmenco Number	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-4990
DM-10-010D‡	CM04CD010D03‡	1	$0.16	$0.15	$0.14	$0.127
DM-10-020D‡	....	2	.16	.15	.14	.127
DM-10-030D‡	....	3	.16	.15	.14	.127
DM-10-050D‡	CM04CD050D03‡	5	.16	.15	.14	.127
DM-10-100J	CM04CD100J03	10	.16	.15	.14	.127
DM-10-120J	CM04CD120J03	12	.17	.15	.14	.13
DM-10-150J	CM04CD150J03	15	.17	.15	.14	.13
DM-10-180J	CM04CD180J03	18	.17	.15	.14	.13
DM-10-200J	CM04ED200J03	20	.13	.12	.11	.10
DM-10-220J	CM04ED220J03	22	.13	.12	.11	.10
DM-10-240J	CM04ED240J03	24	.13	.12	.11	.10
DM-10-270J	CM04ED270J03	27	.13	.12	.11	.10
DM-10-300J	CM04ED300J03	30	.13	.12	.11	.10
DM-10-330J	CM04ED330J03	33	.13	.12	.11	.10
DM-10-360J	CM04ED360J03	36	.14	.13	.12	.11
DM-10-390J	CM04ED390J03	39	.14	.13	.12	.11

*Tolerance, ±1 pF. †100 WVDC. ‡Tolerance, ±0.5 pF. §300 WVDC.

TYPE DM-10—WVDC (CONT'D)

Elmenco Number	MIL-C-5D Type	Cap., pF	Net Each, Lots of 10-90	100-490	500-990	1000-4990
DM-10-430J	CM04ED430J03	43	$0.14	$0.13	$0.12	$0.11
DM-10-470J	CM04ED470J03	47	.14	.13	.12	.11
DM-10-500J	....	50	.13	.12	.11	.10
DM-10-510J	CM04ED510J03	51	.14	.13	.12	.11
DM-10-560J	CM04ED560J03	56	.14	.13	.12	.11
DM-10-620J	CM04ED620J03	62	.14	.13	.12	.11
DM-10-680J	CM04ED680J03	68	.15	.14	.12	.11
DM-10-750J	CM04ED750J03	75	.15	.14	.12	.11
DM-10-820J	CM04ED820J03	82	.14	.13	.12	.12
DM-10-910J	CM04FD910J03	91	.15	.14	.13	.12
DM-10-101J	CM04FD101J03	100	.15	.14	.13	.12
DM-10-111J	CM04FD111J03	110	.15	.14	.13	.12
DM-10-121J	CM04FD121J03	120	.16	.15	.14	.13
DM-10-131J	CM04FD131J03	130	.15	.14	.13	.12
DM-10-151J	CM04FD151J03	150	.16	.15	.14	.13
DM-10-161J	CM04FD161J03	160	.17	.16	.15	.135
DM-10-181J	CM04FD181J03	180	.19	.17	.16	.146
DM-10-201J	CM04FD201J03	200	.20	.18	.17	.157
DM-10-221J	CM04FD221J03	220	.21	.19	.18	.163
DM-10-241J	CM04FD241J03	240	.22	.20	.19	.174
DM-10-251J	....	250	.22	.20	.19	.171
DM-10-271J§	CM04FC271J03§	270	.21	.19	.18	.167
DM-10-301J§	CM04FC301J03§	300	.23	.21	.20	.183
DM-10-331J†	CM04FA331J03†	330	.22	.20	.19	.174
DM-10-361J†	CM04FA361J03†	360	.23	.21	.20	.183
DM-10-391J†	CM04FA391J03†	390	.25	.23	.21	.196

TYPE DM-15—500 WVDC

(SCDM-15 values and prices are the same.)

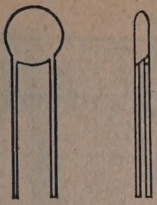
DM-15-010D‡	CM05CD010D03‡	1	$0.13	$0.12	$0.11	$0.10
DM-15-020D‡	....	2	.13	.12	.11	.10
DM-15-030D‡	....	3	.13	.12	.11	.10
DM-15-040D‡	....	4	.13	.12	.11	.10
DM-15-050D‡	CM05CD050D03‡	5	.13	.12	.11	.10
DM-15-060D‡	CM05CD060D03‡	6	.13	.12	.11	.10
DM-15-070D‡	CM05CD070D03‡	7	.13	.12	.11	.10
DM-15-080D‡	CM05CD080D03‡	8	.13	.12	.11	.10
DM-15-100J	CM05CD100J03	10	.13	.12	.11	.10
DM-15-120J	CM05CD120J03	12	.13	.12	.11	.10
DM-15-150J	CM05CD150J03	15	.13	.12	.11	.10
DM-15-180J	CM05CD180J03	18	.13	.12	.11	.10
DM-15-200J	CM05ED200J03	20	.12	.11	.10	.09
DM-15-220J	CM05ED220J03	22	.12	.11	.10	.09
DM-15-240J	CM05ED240J03	24	.12	.11	.10	.09
DM-15-270J	CM05ED270J03	27	.12	.11	.10	.09
DM-15-300J	CM05ED300J03	30	.12	.11	.10	.09
DM-15-330J	CM05ED330J03	33	.12	.11	.10	.09
DM-15-360J	CM05ED360J03	36	.12	.11	.10	.09
DM-15-390J	CM05ED390J03	39	.12	.11	.10	.09
DM-15-430J	CM05ED430J03	43	.12	.11	.10	.09
DM-15-470J	CM05ED470J03	47	.12	.11	.10	.09
DM-15-500J	....	50	.12	.11	.10	.09
DM-15-510J	CM05ED510J03	51	.12	.11	.10	.09
DM-15-620J	CM05ED620J03	62	.12	.11	.10	.09
DM-15-680J	CM05ED680J03	68	.12	.11	.10	.09
DM-15-750J	CM05ED750J03	75	.12	.11	.10	.09
DM-15-820J	CM05ED820J03	82	.12	.11	.10	.09
DM-15-910J	CM05FD910J03	91	.12	.11	.10	.09
DM-15-101J	CM05FD101J03	100	.12	.11	.10	.09
DM-15-111J	CM05FD111J03	110	.12	.11	.10	.09
DM-15-121J	CM05FD121J03	120	.12	.11	.10	.09
DM-15-131J	CM05FD131J03	130	.13	.12	.11	.10
DM-15-151J	CM05FD151J03	150	.13	.12	.11	.10
DM-15-161J	CM05FD161J03	160	.13	.12	.11	.10
DM-15-181J	CM05FD181J03	180	.13	.12	.11	.10
DM-15-201J	CM05FD201J03	200	.13	.12	.11	.10
DM-15-221J	CM05FD221J03	220	.14	.13	.12	.112
DM-15-241J	CM05FD241J03	240	.15	.14	.13	.12
DM-15-251J	....	250	.15	.14	.13	.121
DM-15-271J	CM05FD271J03	270	.15	.14	.13	.125
DM-15-301J	CM05FD301J03	300	.16	.15	.14	.132
DM-15-331J	CM05FD331J03	330	.18	.16	.15	.146
DM-15-361J	CM05FD361J03	360	.18	.17	.16	.152
DM-15-391J	CM05FD391J03	390	.19	.17	.16	.158
DM-15-431J	....	430	.20	.18	.17	.164
DM-15-471J	....	470	.21	.19	.18	.168
DM-15-501J	....	500	.21	.19	.18	.175
DM-15-511J	....	510	.22	.20	.19	.182
DM-15-561J§	....	560	.22	.20	.19	.183
DM-15-621J§	....	620	.24	.21	.20	.198
DM-15-681J§	....	680	.26	.23	.22	.215
DM-15-751J§	....	750	.28	.25	.23	.228
DM-15-821J§	....	820	.30	.27	.26	.244
DM-15-911J†	....	910	.26	.23	.22	.215
DM-15-102J†	....	1000	.28	.25	.24	.233
DM-15-112J†	....	1100	.34	.30	.29	.28
DM-15-122J†	....	1200	.36	.33	.31	.30

TYPE DM-19—500 WVDC

DM-19-101J	....	100	$0.11	$0.10	$0.09	$0.084
DM-19-111J	....	110	.11	.10	.09	.084
DM-19-121J	....	120	.11	.10	.09	.084
DM-19-131J	....	130	.11	.10	.09	.084
DM-19-151J	....	150	.11	.10	.09	.084
DM-19-161J	....	160	.11	.10	.09	.084
DM-19-181J	....	180	.11	.10	.09	.084
DM-19-201J	....	200	.11	.10	.09	.084
DM-19-221J	....	220	.11	.10	.09	.084

CERAMIC DISC AND RADIAL LEAD ALUMINUM CAPACITORS

CERAMIC DISC CAPACITORS



Ceramic disc capacitors exhibit a level of performance and reliability consistent with modern design techniques. Available in high (1000 VDC) and low (50 and 100 VDC) voltage ratings. Higher voltage ratings improve reliability and provide extra reserve for resistance to surges and temporary overloads. Rugged phenolic coating and high temperature wax impregnation give superior moisture resistance and physical strength.

1000 WVDC

Arco No.	Cap., pF	Tol., ±%	Size, In.		Net Each, Lots of*			
			A	B	5-20	25-95	100-999	1000-4999
CCD-3R3	3.3	.5*	.290	.250	$0.18	$0.15	$0.047	$0.043
CCD-050	5	10	.290	.250	.15	.13	.037	.032
CCD-060	6	10	.290	.250	.18	.15	.047	.043
CCD-6R8	6.8	10	.290	.250	.18	.15	.047	.043
CCD-7R5	7.5	10	.290	.250	.18	.15	.047	.043
CCD-080	8	10	.290	.250	.15	.13	.037	.032
CCD-100	10	10	.290	.250	.15	.13	.037	.032
CCD-120	12	10	.290	.250	.15	.13	.037	.032
CCD-150	15	10	.290	.250	.15	.13	.037	.032
CCD-180	18	10	.290	.250	.15	.13	.037	.032
CCD-200	20	10	.290	.250	.15	.13	.037	.032
CCD-220	22	10	.290	.250	.15	.13	.037	.032
CCD-240	24	10	.290	.250	.15	.13	.037	.032
CCD-250	25	10	.290	.250	.15	.13	.037	.032
CCD-270	27	10	.290	.250	.15	.13	.037	.032
CCD-300	30	10	.290	.250	.15	.13	.037	.032
CCD-330	33	10	.290	.250	.15	.13	.037	.032
CCD-330M	33	20	.280	.250	.12	.08	.032	.026
CCD-390	39	10	.290	.250	.15	.13	.037	.032
CCD-470	47	10	.290	.250	.15	.13	.037	.032
CCD-500	50	10	.290	.250	.15	.13	.037	.032
CCD-510	51	10	.290	.250	.15	.13	.037	.032
CCD-560	56	10	.290	.250	.15	.13	.037	.032
CCD-680	68	10	.290	.250	.15	.13	.037	.032
CCD-750	75	10	.290	.250	.15	.13	.037	.032
CCD-820	82	10	.290	.250	.15	.13	.037	.032
CCD-910	91	10	.290	.250	.15	.13	.037	.032
CCD-101	100	10	.290	.250	.15	.13	.037	.032
CCD-101M	100	20	.280	.250	.12	.08	.032	.026
CCD-121	120	10	.290	.250	.17	.14	.037	.032
CCD-131	130	10	.290	.250	.17	.14	.037	.032
CCD-151	150	10	.290	.250	.17	.14	.037	.032
CCD-181	180	10	.290	.250	.17	.14	.037	.032
CCD-201	200	10	.290	.250	.17	.14	.037	.032
CCD-221	220	10	.290	.250	.17	.14	.037	.032
CCD-241	240	10	.290	.250	.17	.14	.037	.032
CCD-251	250	10	.290	.250	.17	.14	.037	.032
CCD-271	270	10	.290	.250	.17	.14	.037	.032
CCD-301	300	10	.290	.250	.17	.14	.037	.032
CCD-331	330	10	.290	.250	.17	.14	.037	.032
CCD-351	350	10	.290	.250	.17	.14	.037	.032
CCD-361	360	10	.290	.250	.17	.14	.037	.032
CCD-391	390	10	.290	.250	.17	.14	.037	.032
CCD-401	400	10	.290	.250	.17	.14	.037	.032
CCD-471	470	10	.290	.250	.17	.14	.037	.032
CCD-501	500	10	.290	.250	.17	.14	.037	.032
CCD-511	510	10	.290	.250	.17	.14	.037	.032
CCD-561	560	10	.290	.250	.17	.14	.037	.032
CCD-601	600	10	.290	.250	.17	.14	.037	.032
CCD-681	680	10	.290	.250	.17	.14	.037	.032
CCD-751	750	10	.290	.250	.17	.14	.037	.032
CCD-801G	800	GMV	.290	.250	.17	.14	.037	.032
CCD-821	820	20	.290	.250	.17	.14	.037	.032
CCD-911	910	20	.290	.250	.17	.14	.037	.032
CCD-102	1000	20	.385	.250	.17	.14	.037	.032
CCD-102G	1000	GMV	.290	.250	.15	.13	.034	.03
CCD-122	1200	10	.385	.250	.18	.15	.037	.032
CCD-132	1300	10	.385	.250	.18	.15	.037	.032
CCD-152	1500	20	.385	.250	.18	.15	.037	.032
CCD-152G	1500	GMV	.290	.250	.15	.13	.034	.03
CCD-162	1600	20	.385	.250	.18	.15	.047	.043
CCD-182	1800	20	.385	.250	.18	.15	.047	.043
CCD-202G	2000	GMV	.385	.250	.18	.15	.047	.043
CCD-222G	2200	GMV	.385	.250	.18	.15	.047	.043
CCD-252G	2500	GMV	.385	.250	.19	.16	.047	.043
CCD-272G	2700	GMV	.385	.250	.19	.16	.047	.043
CCD-302G	3000	GMV	.385	.250	.19	.16	.047	.043
CCD-332G	3300	GMV	.590	.375	.19	.16	.059	.056
CCD-392G	3900	GMV	.590	.375	.19	.16	.059	.056
CCD-402G	4000	GMV	.590	.375	.19	.16	.047	.043
CCD-432G	4300	GMV	.590	.375	.19	.16	.047	.043
CCD-472	4700	20	.590	.375	.19	.16	.059	.056
CCD-502	5000	20	.590	.375	.19	.16	.059	.056
CCD-562G	5600	GMV	.590	.375	.19	.16	.065	.061
CCD-682G	6800	GMV	.590	.375	.19	.16	.065	.061
CCD-752G	7500	GMV	.590	.375	.21	.17	.084	.079
CCD-822G	8200	GMV	.690	.375	.21	.17	.084	.079
CCD-103	10000	20	.690	.375	.21	.17	.084	.079

*pF. *100–999 and 1000–4999, bulk of a value.

50 WVDC ±20% TOLERANCE

Arco No.	Cap., μF	Dimensions, In.			Net Each, Lots of*		
		Dia.	Thk.	Lead Space	5-95	100-999	1000-9999
TCD-103M	.010	.394	.156	.250	$0.21	$0.052	$0.045
TCD-153M	.015	.473	.156	.250	.21	.054	.047
TCD-223M	.022	.473	.156	.250	.21	.056	.049
TCD-333M	.033	.473	.156	.375	.23	.062	.054
TCD-473M	.047	.590	.156	.375	.32	.084	.074
TCD-503M	.050	.590	.156	.375	.35	.087	.076

50 WVDC, +80 −20% TOLERANCE

Arco No.	Cap., μF	Dimensions, In.			Net Each, Lots of*		
		Dia.	Thk.	Lead Space	5-95	100-999	1000-9999
TCD-502Z	.005	.276	.156	.250	$0.14	$0.035	$0.03
TCD-103Z	.010	.315	.156	.250	.14	.036	.031
TCD-203Z	.020	.355	.156	.375	.14	.039	.035
TCD-253Z	.025	.473	.156	.375	.18	.048	.043
TCD-303Z	.030	.473	.156	.375	.21	.052	.045
TCD-503Z	.050	.473	.156	.375	.23	.06	.053
TCD-683Z	.068	.721	.171	.375	.53	.139	.122
TCD-104Z	.10	.721	.171	.375	.57	.147	.129
100 WVDC ±20% TOLERANCE							
TCP-R005	.005	.315	.156	.250	$0.16	$0.044	$0.038
TCP-R01	.01	.395	.156	.250	.18	.048	.043
TCP-R02	.02	.475	.156	.250	.21	.056	.049
TCP-R025	.025	.530	.156	.250	.30	.079	.069
TCP-R03	.03	.590	.156	.250	.32	.083	.072
TCP-R05	.05	.750	.156	.375	.53	.136	.118
TCP-R1*	.1	1.0	.156	.375	1.56	.409	.357

*Indicates +80%, −20% tolerance. *100–999 and 1000–4999, bulk of a value.

TYPE PE POLYSTYRENE CAPACITORS

.01 MFD ± 0.5%
100 WVDC

Capacitance Range: .001–.01 μF (lower and higher values available). **Tolerance:** ±5%, ±2%, ±1%, ±½%, ±¼%. **Voltage Rating:** 100 WVDC. **Insulation Resistance:** 10^{13} ohms min. at 25° C. – 10^{12} ohms min. at 85° C. **Dissipation Factor:** .01% max. at 25° C; –.02% max. at 85° C. **Dielectric Absorption:** 0.05% max. at all temperatures. **Temperature Coefficient:** –190, ±30 ppm/° C. **Stability:** ±0.1% max. drift under fixed or variable operating conditions within specified max. limits.

.001 THRU .01 μF STOCK VALUES

Tolerance	Net Each, Lots of					
	1-9	10-24	25-49	50-99	100-499	500-999
±¼%	$8.47	$5.57	$4.60	$2.99	$2.82	$2.73
±½%	5.92	3.96	3.21	2.24	2.11	2.05
±1%	2.11	1.47	1.14	.935	.88	.847
±2%	1.77	1.27	.97	.85	.79	.77
±5%	1.52	1.09	.80	.75	.70	.68

TYPE PT POLYSTYRENE CAPACITORS

Polystyrene dielectric, hermetically sealed tubular capacitors give rugged stability for long life. Same superior quality and electrical characteristics as Type PJ.

100 WVDC

Cap., μF	Arco No.	Size, Inches Dia. x Length	Net Each, Lots of			
			1-9	10-24	25-49	50-99*
.002	1PT-202J	.312 x ⅞	$3.49	$2.50	$1.99	$1.50
.0033	1PT-332J	.312 x ⅞	3.49	2.50	1.99	1.50
.0047	1PT-472J	.312 x ⅞	3.49	2.50	1.99	1.50
.005	1PT-502J	.312 x ⅞	3.49	2.50	1.99	1.50
.0068	1PT-682J	.312 x ⅞	3.49	2.50	1.99	1.50
.01	1PT-103J	.312 x ⅞	3.49	2.50	1.99	1.50
.015	1PT-153J	.312 x ⅞	3.52	2.52	2.01	1.51
.02	1PT-203J	.312 x ⅞	3.54	2.53	2.02	1.52
.022	1PT-223J	.312 x ⅞	3.56	2.54	2.04	1.53
.033	1PT-333J	.312 x 1	3.63	2.60	2.08	1.55
.047	1PT-473J	.400 x 1	3.72	2.66	2.12	1.60
.05	1PT-503J	.400 x 1	3.74	2.67	2.13	1.61
.068	1PT-683J	.400 x 1	3.93	2.81	2.24	1.68
.1	1PT-104J	.500 x 1⅛	4.28	3.06	2.44	1.84
.15	1PT-154J	.500 x 1 7/16	4.82	3.44	2.75	2.07
.2	1PT-204J	.500 x 1 7/16	5.39	3.85	3.08	2.31
.22	1PT-224J	.500 x 1 7/16	5.54	3.96	3.17	2.38
.33	1PT-334J	.562 x 1 13/16	6.44	4.60	3.67	2.76
.39	1PT-394J	.562 x 1 13/16	6.93	4.95	3.96	2.97
.47	1PT-474J	.670 x 1⅞	7.55	5.39	4.31	3.23
.5	1PT-504J	.670 x 1⅞	7.90	5.64	4.51	3.39
400 WVDC						
.002	4PT-202J	.312 x ⅞	$ 3.49	$2.50	$1.99	$1.50
.0033	4PT-332J	.312 x ⅞	3.49	2.50	1.99	1.50
.0047	4PT-472J	.312 x ⅞	3.49	2.50	1.99	1.50
.005	4PT-502J	.312 x ⅞	3.49	2.50	1.99	1.50
.0068	4PT-682J	.312 x ⅞	3.54	2.53	2.02	1.52
.01	4PT-103J	.312 x 1	3.64	2.60	2.08	1.56
.015	4PT-153J	.400 x 1	3.73	2.66	2.13	1.60
.02	4PT-203J	.400 x 1	3.83	2.73	2.19	1.64
.022	4PT-223J	.400 x 1	3.85	2.75	2.20	1.65
.033	4PT-333J	.400 x 1⅛	4.05	2.89	2.31	1.74
.047	4PT-473J	.500 x 1 7/16	4.28	3.06	2.44	1.84
.05	4PT-503J	.500 x 1 7/16	4.36	3.11	2.49	1.87
.068	4PT-683J	.500 x 1 7/16	4.77	3.41	2.73	2.05
.1	4PT-104J	.562 x 1 13/16	5.54	3.96	3.17	2.38
.15	4PT-154J	.670 x 1⅞	6.67	4.76	3.81	2.86
.2	4PT-204J	.750 x 1⅞	7.78	5.56	4.44	3.33
.22	4PT-224J	.750 x 1⅞	8.16	5.83	4.66	3.50
.33	4PT-334J	1.0 x 1 15/16	10.32	7.37	5.90	4.42
.39	4PT-394J	1.0 x 1 15/16	11.47	8.20	6.56	4.92

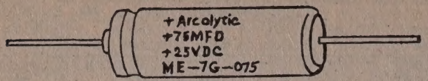
Note: Type PT 200, 600 and 1000 WVDC units available.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST.

Arco

AXIAL LEAD MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

TYPE ME MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS



Type ME electrolytic capacitors designed for transistorized circuitry featuring low voltages and compactness of structure. All welded construction provides increased ruggedness and resistance to environmental extremes. **Tolerance:** −10%, +100%. **Operating Temperature:** −30° C to +85° C. **Leads:** Axial 1¼″ length minimum, #20 or #22 tinted copper depending on case size. All units are insulated with plastic sleeve permanently bonded to aluminum body.

3 WVDC

Arco No.*	Cap., µF	Net Each, Lots of					
		5-45	50-95	100 Up	100-499*	500-999*	1000-9999*
ME1A001	1	$0.42	$0.33	$0.28	$0.20	$0.15	$0.141
ME1A002	2	.42	.33	.28	.20	.15	.141
ME1A003	3	.42	.33	.28	.20	.15	.141
ME1A004	4	.42	.33	.28	.20	.15	.141
ME1A005	5	.42	.33	.28	.20	.15	.141
ME1A006	6	.42	.33	.28	.20	.15	.141
ME1A008	8	.42	.33	.28	.20	.15	.141
ME1A010	10	.42	.33	.28	.20	.15	.141
ME2A015	15	.44	.35	.30	.21	.16	.146
ME2A020	20	.44	.35	.30	.21	.16	.146
ME2A025	25	.44	.35	.30	.21	.16	.146
ME2A030	30	.44	.35	.30	.21	.16	.146
ME2A035	35	.44	.35	.30	.21	.16	.146
ME2A040	40	.44	.35	.30	.21	.16	.146
ME2A050	50	.46	.36	.31	.22	.17	.154
ME3A075	75	.46	.36	.31	.22	.17	.154
ME3A100	100	.46	.36	.31	.22	.17	.154
ME4A125	125	.46	.36	.31	.22	.17	.154
ME4A150	150	.49	.38	.33	.23	.18	.165
ME4A175	175	.51	.40	.33	.24	.18	.165
ME4A200	200	.51	.40	.33	.24	.18	.165
ME4A250	250	.58	.47	.39	.28	.21	.206
ME7A300	300	.66	.51	.43	.32	.23	.231
ME7A350	350	.66	.51	.43	.32	.23	.231
ME7A400	400	.66	.51	.43	.32	.23	.231
ME7A450	450	.70	.54	.45	.34	.25	.253
ME7A500	500	.76	.59	.49	.37	.29	.385

6 WVDC

ME1B001	1	$0.42	$0.33	$0.28	$0.20	$0.15	$0.141
ME1B002	2	.42	.33	.28	.20	.15	.141
ME1B003	3	.42	.33	.28	.20	.15	.141
ME1B004	4	.42	.33	.28	.20	.15	.141
ME1B005	5	.42	.33	.28	.20	.15	.141
ME1B006	6	.42	.33	.28	.20	.15	.141
ME1B008	8	.42	.33	.28	.20	.15	.141
ME1B010	10	.42	.33	.28	.20	.15	.141
ME2B015	15	.44	.35	.30	.21	.16	.146
ME2B020	20	.44	.35	.30	.21	.16	.146
ME2B025	25	.44	.35	.30	.21	.16	.146
ME2B030	30	.44	.35	.30	.21	.16	.146
ME2B035	35	.44	.35	.30	.21	.16	.146
ME2B040	40	.44	.35	.30	.21	.16	.146
ME2B050	50	.46	.36	.31	.22	.17	.154
ME2B060	60	.46	.36	.31	.22	.17	.154
ME3B075	75	.46	.36	.31	.22	.17	.154
ME3B100	100	.46	.36	.31	.22	.17	.154
ME6B125	125	.49	.38	.33	.23	.18	.165
ME6B150	150	.54	.42	.35	.25	.19	.185
ME6B175	175	.54	.42	.35	.25	.19	.185
ME6B200	200	.56	.44	.37	.26	.20	.192
ME6B250	250	.58	.47	.39	.28	.21	.206
ME8B300	300	.68	.53	.43	.32	.24	.238
ME8B400	400	.70	.54	.45	.34	.25	.253
ME8B500	500	.76	.59	.49	.37	.29	.385

12 WVDC

ME1D001	1	$0.42	$0.33	$0.28	$0.20	$0.15	$0.141
ME1D002	2	.42	.33	.28	.20	.15	.141
ME1D003	3	.42	.33	.28	.20	.15	.141
ME1D004	4	.42	.33	.28	.20	.15	.141
ME1D005	5	.42	.33	.28	.20	.15	.141
ME1D006	6	.42	.33	.28	.20	.15	.141
ME1D008	8	.42	.33	.28	.20	.15	.141
ME2D010	10	.42	.33	.28	.20	.15	.141
ME2D015	15	.44	.35	.30	.21	.16	.146
ME2D020	20	.44	.35	.30	.21	.16	.146
ME2D025	25	.44	.35	.30	.21	.16	.146
ME3D030	30	.46	.36	.31	.22	.17	.154
ME3D035	35	.46	.36	.31	.22	.17	.154
ME3D040	40	.46	.36	.31	.22	.17	.154
ME3D050	50	.46	.36	.31	.22	.17	.154
ME4D075	75	.46	.36	.31	.22	.17	.154
ME4D100	100	.46	.36	.31	.22	.17	.154
ME6D150	150	.56	.43	.38	.27	.21	.20
ME6D200	200	.58	.47	.39	.28	.21	.207
ME8D250	250	.58	.47	.39	.28	.21	.207

15 WVDC

ME1E001	1	$0.42	$0.33	$0.28	$0.20	$0.15	$0.141
ME1E002	2	.42	.33	.28	.20	.15	.141
ME1E003	3	.42	.33	.28	.20	.15	.141
ME1E004	4	.42	.33	.28	.20	.15	.141
ME1E005	5	.42	.33	.28	.20	.15	.141
ME1E006	6	.42	.33	.28	.20	.15	.141
ME1E008	8	.42	.33	.28	.20	.15	.141
ME1E010	10	.42	.33	.28	.20	.15	.141
ME2E015	15	.44	.35	.30	.21	.16	.146
ME2E020	20	.44	.35	.30	.21	.16	.146

15 WVDC (CONT'D)

Arco No.*	Cap., µF	Net Each, Lots of					
		5-45	50-95	100 Up	100-499*	500-999*	1000-9999*
ME2E025	25	$0.44	$0.35	$0.30	$0.21	$0.16	$0.146
ME3E030	30	.46	.36	.31	.22	.17	.154
ME3E035	35	.46	.36	.31	.22	.17	.154
ME3E040	40	.46	.36	.31	.22	.17	.154
ME3E050	50	.46	.36	.31	.22	.17	.154
ME4E075	75	.49	.38	.33	.23	.18	.165
ME4E100	100	.51	.40	.33	.24	.18	.165
ME6E150	150	.58	.47	.39	.28	.21	.206
ME6E200	200	.58	.47	.39	.28	.21	.206
ME8E250	250	.58	.47	.39	.28	.21	.206

25 WVDC

ME1G001	1	$0.42	$0.33	$0.28	$0.20	$0.15	$0.141
ME1G002	2	.42	.33	.28	.20	.15	.141
ME1G003	3	.42	.33	.28	.20	.15	.141
ME1G004	4	.42	.33	.28	.20	.15	.141
ME1G005	5	.42	.33	.28	.20	.15	.141
ME2G006	6	.44	.35	.30	.21	.16	.146
ME2G008	8	.44	.35	.30	.21	.16	.146
ME2G010	10	.44	.35	.30	.21	.16	.146
ME3G015	15	.44	.35	.30	.21	.16	.146
ME3G020	20	.46	.36	.31	.22	.17	.154
ME3G025	25	.46	.36	.31	.22	.17	.154
ME3G030	30	.46	.36	.31	.22	.17	.154
ME4G035	35	.46	.36	.31	.22	.17	.154
ME4G040	40	.46	.36	.31	.22	.17	.154
ME4G050	50	.46	.36	.31	.22	.17	.154
ME7G075	75	.51	.40	.33	24	.18	.165
ME7G100	100	.51	.40	.33	.24	.18	.165

50 WVDC

ME1J001	1	$0.42	$0.33	$0.28	$0.20	$0.15	$0.141
ME1J002	2	.42	.33	.28	.20	.15	.141
ME2J003	3	.42	.33	.28	.20	.15	.141
ME2J004	4	.42	.33	.28	.20	.15	.141
ME2J005	5	.44	.35	.30	.21	.16	.146
ME2J006	6	.44	.35	.30	.21	.16	.146
ME3J008	8	.44	.35	.30	.21	.16	.146
ME3J010	10	.44	.35	.30	.21	.16	.146
ME4J015	15	.46	.36	.31	.22	.17	.154
ME4J020	20	.46	.36	.31	.22	.17	.154
ME4J025	25	.46	.36	.31	.22	.17	.154
ME4J030	30	.51	.40	.33	.24	.18	.165
ME7J035	35	.51	.40	.33	.24	.18	.165
ME7J040	40	.51	.40	.33	.24	.18	.165
ME7J050	50	.51	.40	.33	.24	.18	.165

100 WVDC

ME2M001	1	$0.50	$0.39	$0.34	$0.24	$0.19	$0.173
ME2M002	2	.50	.39	.34	.24	.19	.173
ME2M003	3	.51	.40	.34	.25	.19	.177
ME3M004	4	.55	.43	.37	.27	.20	.19
ME3M005	5	.55	.43	.37	.27	.20	.19
ME4M006	6	.63	.49	.42	.31	.24	.22
ME4M008	8	.75	.58	.49	.37	.28	.266
ME4M010	10	.79	.61	.52	.39	.30	.283
ME7M015	15	.79	.61	.52	.39	.30	.283
ME7M020	20	.79	.61	.52	.39	.30	.283
ME7M025	25	.94	.72	.61	.47	.36	.339

150 WVDC

ME3N001	1	$0.51	$0.40	$0.34	$0.25	$0.19	$0.177
ME3N002	2	.56	.44	.37	.27	.21	.195
ME3N003	3	.58	.45	.39	.28	.22	.202
ME3N004	4	.69	.53	.46	.34	.26	.244
ME3N005	5	.69	.53	.46	.34	.26	.244
ME3N006	6	.69	.53	.46	.34	.26	.244
ME4N008	8	.80	.62	.53	.40	.30	.288
ME4N010	10	.80	.62	.53	.40	.30	.288
ME4N012	12	.80	.62	.53	.40	.30	.288
ME7N015	15	.92	.71	.60	.46	.35	.334
ME8N020	20	.92	.71	.60	.46	.35	.334

250 WVDC

ME3R001	1	$0.54	$0.44	$0.36	$0.26	$0.20	$0.187
ME3R002	2	.58	.45	.39	.28	.22	.202
ME6R005	5	.71	.55	.47	.35	.27	.329

350 WVDC

ME3T001	1	$0.60	$0.47	$0.40	$0.29	$0.23	$0.21
ME5T002	2	.66	.51	.44	.33	.25	.234

*CASE SIZES

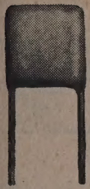
Case size indicated by digit after ME (e.g., ME1B001).

Code	Size, Inches		Code	Size, Inches	
	Dia.	Length		Dia.	Length
1	.219–.250	.512–.563	5	.406	.938
2	.250–.281	.625–.668	6	.344–.406	.750–1.063
3	.344–.406	.705–.750	7	.406–.492	.988–1.250
4	.406–.492	.406–.512	8	.406–.512	1.188–1.406

*100–499, 500–999 and 1000–9999 in bulk packs.

CENTRALAB Ceramic Capacitors

MONO-KAPTM CERAMIC CAPACITORS



MINIATURE MONOLITHIC, RADIAL LEAD, EPOXY COATED

Provide very high capacitance in extremely small size ceramic package. Reliable Ceramolithic® construction and 100% testing assures top performance and maximum quality. **Operating Temperature:** −55° C to +125° C. **Insulation Resistance:** 100K megs or 1000 megohm-microfarads, whichever is less at 25° C, rated VDCW applied. **Leads:** Tinned wire.

CN SERIES—ULTRA-STABLE

EIA Temperature Characteristic: COG (NPO). **Temp. vs Cap.:** 0 ±30 ppm/° C max. cap. change from +25° C reading over temp. range of +25° C to +85° C. **Dissipation Factor:** 0.15% max. at 1 kHz and +25° C. **Tolerance:** ±10% (suffix **K**); ±0.5 pF (suffix **D**).

100 VDCW

Capacitance, pF or µF	CRL Number*	Net Each, Lots of				
				Pkg. of 100		Pkg. of 500
		1-49	50-99	100-200	300-400	
4.7 pF	CN10A4R7D	$0.78	$0.57	$0.47	$0.39	$0.34
6.8	CN10A6R8D	.78	.57	.47	.39	.34
10	CN15A100K	.33	.24	.20	.17	.14
15	CN15A150K	.33	.24	.20	.17	.14
22	CN15A220K	.33	.24	.20	.17	.14
33	CN15A330K	.33	.24	.20	.17	.14
47	CN15A470K	.33	.24	.20	.17	.14
68	CN15A680K	.33	.24	.20	.17	.14
100	CN15A101K	.33	.24	.20	.17	.14
150	CN15A151K	.33	.24	.20	.17	.14
220	CN15A221K	.33	.24	.20	.17	.14
330	CN20A331K	.66	.48	.40	.33	.29
470	CN20A471K	.66	.48	.40	.33	.29
680	CN20A681K	.75	.55	.45	.38	.33
.001 µF	CN20A102K	.75	.55	.45	.38	.33
.0015	CN20A152K	.87	.64	.52	.44	.38
.0022	CN30A222K	1.59	1.17	.95	.80	.69
.0033	CN30A332K	1.74	1.28	1.04	.87	.75
.0047	CN30A472K	1.98	1.45	1.19	.99	.86
.0068	CN30A682K	2.43	1.78	1.46	1.22	1.05
.01	CN40A103K	4.26	3.12	2.56	2.13	1.85

CW SERIES—TEMPERATURE STABLE

EIA Temperature Characteristic: X7R. **Temp. vs Cap.:** ±15% max. cap. change from +25° C reading over temp. range of −55° C to +125° C. **Dissipation Factor:** 2.5% max. at 1 kHz and +25° C. **Tolerance:** ±10% (suffix **K**); ±20% (suffix **M**).

50 VDCW

150 pF	CW15C151K	$0.30	$0.22	$0.18	$0.15	$0.13
180	CW15C181K	.30	.22	.18	.15	.13
220	CW15C221K	.30	.22	.18	.15	.13
270	CW15C271K	.30	.22	.18	.15	.13
330	CW15C331K	.30	.22	.18	.15	.13
390	CW15C391K	.30	.22	.18	.15	.13
470	CW15C471K	.30	.22	.18	.15	.13
560	CW15C561K	.30	.22	.18	.15	.13
680	CW15C681K	.30	.22	.18	.15	.13
820	CW15C821K	.30	.22	.18	.15	.13
.001 µF	CW15C102K	.30	.22	.18	.15	.13
.001	CW15C102M	.27	.19	.16	.13	.11
.0012	CW15C122K	.30	.22	.18	.15	.13
.0015	CW15C152K	.30	.22	.18	.15	.13
.0018	CW15C182K	.30	.22	.18	.15	.13
.0022	CW15C222K	.30	.22	.18	.15	.13
.0027	CW15C272K	.30	.22	.18	.15	.13
.0033	CW15C332K	.30	.22	.18	.15	.13
.0039	CW15C392K	.30	.22	.18	.15	.13
.0047	CW15C472K	.30	.22	.18	.15	.13
.0068	CW15C682K	.36	.26	.21	.18	.15
.0082	CW15C822K	.36	.26	.21	.18	.15
.01	CW15C103K	.36	.26	.21	.18	.15
.01	CW15C103M	.30	.22	.18	.15	.13
.012	CW15C123K	.39	.28	.23	.19	.16
.015	CW15C153K	.39	.28	.23	.19	.16
.018	CW20C183K	.48	.35	.28	.24	.20
.022	CW20C223K	.48	.35	.28	.24	.20
.027	CW20C273K	.60	.44	.36	.30	.26
.033	CW20C333K	.60	.44	.36	.30	.26
.039	CW20C393K	.60	.44	.36	.30	.26
.047	CW20C473K	.60	.44	.36	.30	.26
.056	CW20C563K	.60	.44	.36	.30	.26
.068	CW20C683K	.69	.51	.41	.34	.29
.082	CW20C823K	.69	.51	.41	.34	.29
.1	CW30C104K	1.23	.90	.73	.61	.53
.1	CW30C104M	1.08	.79	.64	.54	.46
.15	CW30C154K	1.47	1.07	.88	.73	.63
.22	CW30C224K	1.74	1.27	1.04	.87	.75

100 VDCW

150 pF	CW15A151K	$0.30	$0.22	$0.18	$0.15	$0.13
180	CW15A181K	.30	.22	.18	.15	.13
220	CW15A221K	.30	.22	.18	.15	.13
270	CW15A271K	.30	.22	.18	.15	.13
330	CW15A331K	.30	.22	.18	.15	.13
390	CW15A391K	.30	.22	.18	.15	.13
470	CW15A471K	.30	.22	.18	.15	.13
560	CW15A561K	.30	.22	.18	.15	.13
680	CW15A681K	.30	.22	.18	.15	.13
820	CW15A821K	.30	.22	.18	.15	.13

CW SERIES (CONTINUED)

100 VDCW

Capacitance, pF or µF	CRL Number*	Net Each, Lots of				
				Pkg. of 100		Pkg. of 500
		1-49	50-99	100-200	300-400	
.001 µF	CW15A102K	$0.30	$0.22	$0.18	$0.15	$0.13
.0012	CW15A122K	.30	.22	.18	.15	.13
.0015	CW15A152K	.30	.22	.18	.15	.13
.0018	CW15A182K	.30	.22	.18	.15	.13
.0022	CW15A222K	.30	.22	.18	.15	.13
.0027	CW15A272K	.30	.22	.18	.15	.13
.0033	CW15A332K	.30	.22	.18	.15	.13
.0039	CW15A392K	.30	.22	.18	.15	.13
.0047	CW15A472K	.30	.22	.18	.15	.13
.0056	CW15A562K	.30	.22	.18	.15	.13
.0068	CW20A682K	.48	.35	.28	.24	.20
.0082	CW20A822K	.48	.35	.28	.24	.20
.01	CW20A103K	.48	.35	.28	.24	.20
.012	CW20A123K	.51	.37	.30	.25	.22
.015	CW20A153K	.51	.37	.30	.25	.22
.018	CW20A183K	.51	.37	.30	.25	.22
.022	CW20A223K	.51	.37	.30	.25	.22
.027	CW20A273K	.60	.44	.35	.30	.26
.033	CW20A333K	.60	.44	.35	.30	.26
.039	CW30A393K	1.08	.79	.64	.54	.46
.047	CW30A473K	1.08	.79	.64	.54	.46
.056	CW30A563K	1.32	.96	.79	.66	.57
.068	CW30A683K	1.32	.96	.79	.66	.57
.082	CW30A823K	1.32	.96	.79	.66	.57
.1	CW30A104K	1.32	.96	.79	.66	.57
.15	CW40A154K	2.55	1.87	1.53	1.27	1.10
.22	CW40A224K	3.00	2.20	1.80	1.50	1.30
.33	CW50A334K	4.98	3.65	2.98	2.49	2.15
.47	CW50A474K	5.88	4.31	3.52	2.94	2.54
.56	CW50A564K	6.69	4.90	4.01	3.34	2.89

CY SERIES—GENERAL PURPOSE

EIA Temperature Characteristic: Y5V (General Purpose). **Temp. vs Cap.:** +22%, −82% max. cap. change from +25° C reading over temp. range of −30° C to +85° C. **Dissipation Factor:** 2.5% max. at 1 kHz and +25° C. **Tolerance:** ±20% (suffix **M**); GMV +100–0% (suffix **P**).

50 VDCW

470 pF	CY15C471M	$0.36	$0.26	$0.22	$0.18	$0.16
680	CY15C681M	.36	.26	.22	.18	.16
.001 µF	CY15C102M	.36	.26	.22	.18	.16
.0015	CY15C152M	.36	.26	.22	.18	.16
.0022	CY15C222M	.36	.26	.22	.18	.16
.0033	CY15C332M	.36	.26	.22	.18	.16
.0047	CY15C472M	.36	.26	.22	.18	.16
.0068	CY15C682M	.36	.26	.22	.18	.16
.01	CY15C103M	.36	.26	.22	.18	.16
.01	CY15C103P	.27	.20	.16	.14	.12
.015	CY15C153M	.36	.26	.22	.18	.16
.022	CY15C223M	.36	.26	.22	.18	.16
.033	CY15C333M	.36	.26	.22	.18	.16
.047	CY15C473M	.39	.29	.23	.20	.17
.068	CY15C683M	.39	.29	.23	.20	.17
.1	CY20C104M	.63	.46	.37	.31	.27
.1	CY20C104P	.45	.33	.27	.22	.19
.15	CY20C154M	.72	.52	.43	.36	.31
.22	CY20C224M	.72	.52	.43	.36	.31
.33	CY20C334M	.81	.59	.48	.40	.35
.47	CY20C474M	.81	.59	.48	.40	.35
.68	CY30C684M	1.86	1.36	1.11	.93	.80
1.0	CY30C105M	1.86	1.36	1.11	.93	.80
1.0	CY30C105P	1.29	.94	.77	.64	.55
1.5	CY30C155M	2.04	1.49	1.22	1.02	.88
2.2	CY30C225M	2.40	1.76	1.44	1.20	1.04
3.3	CY40C335M	4.38	3.21	2.62	2.19	1.89
4.7	CY40C475M	5.34	3.91	3.20	2.67	2.31

100 VDCW

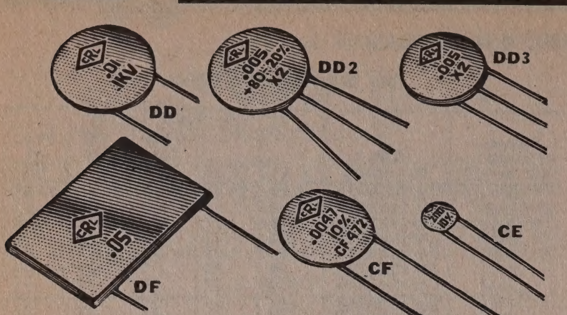
.0068 µF	CY15A682M	$0.36	$0.26	$0.22	$0.18	$0.16
.01	CY15A103M	.36	.26	.22	.18	.16
.01	CY15A103P	.27	.20	.16	.14	.12
.015	CY15A153M	.36	.26	.22	.18	.16
.022	CY15A223M	.36	.26	.22	.18	.16
.033	CY15A333M	.36	.26	.22	.18	.16
.047	CY20A473M	.60	.44	.36	.30	.26
.068	CY20A683M	.63	.46	.37	.31	.27
.1	CY20A104M	.63	.46	.37	.31	.27
.1	CY20A104P	.45	.33	.27	.22	.19
.15	CY20A154M	.75	.55	.45	.37	.32
.22	CY20A224M	.75	.55	.45	.37	.32
.33	CY30A334M	1.56	1.14	.93	.78	.67
.47	CY30A474M	1.56	1.14	.93	.78	.67
.68	CY30A684M	1.92	1.40	1.15	.96	.83
1.0	CY30A105M	1.92	1.40	1.15	.96	.83
1.5	CY40A155M	3.69	2.70	2.21	1.84	1.59
2.2	CY40A225M	4.26	3.12	2.55	2.13	1.84

*SIZE CHART

First two numbers of CRL No. indicate size code (e.g., CN10=Size 10). Lead length, 1.25″ min.

Size Code	Size, Inches				
	Maximum			Lead	
	Lgth.	Width	Thk.	Spacing	AWG
10	.100	.100	.100	.100	26
15	.150	.150	.100	.100	26
20	.200	.200	.125	.100	24
30	.300	.300	.150	.200	24
40	.400	.400	.150	.200	24
50	.500	.500	.200	.400	22

CENTRALAB Ceramic Capacitors



DD CERAMIC DISC HI-KAPS®

Ideal for bypass and non-critical coupling in electronic equipment having operating temperatures ranging from −55° C to +85° C where high capacity is required and control stability is secondary. Rated 1000 WVDC except: DD6-103, DD-153, DD-203, DD-303, DD-403 and DD-503, which are 600 WVDC. **Tolerance:** ±10% unless otherwise noted.

Cap., pF	CRL Number	Dia., In.	Cap., pF	CRL Number	Dia., In.
3.3*	**DD-3R3**	.290	500	**DD-501**	.290
5	**DD-050**	.290	510	**DD-511**	.290
6	**DD-060**	.290	560	**DD-561**	.290
6.8	**DD-6R8**	.290	600	**DD-601**	.290
7.5	**DD-7R5**	.290	680	**DD-681**	.290
8	**DD-080**	.290	750	**DD-751**	.290
10	**DD-100**	.290	800†	**DD-801**	.290
12	**DD-120**	.290	820	**DD-821**	.290
15	**DD-150**	.290	910	**DD-911**	.290
18	**DD-180**	.290	1000	**DD-102**	.385
20	**DD-200**	.290	1000†	**DD-102G**	.290
22	**DD-220**	.290	1200	**DD-122**	.385
24	**DD-240**	.290	1200†	**DD-122G**	.290
25	**DD-250**	.290	1300	**DD-132**	.385
27	**DD-270**	.290	1500	**DD-152**	.385
30	**DD-300**	.290	1500†	**DD-152G**	.290
33	**DD-330**	.290	1600	**DD-162**	.385
39	**DD-390**	.290	1800	**DD-182**	.385
47	**DD-470**	.290	2000†	**DD-202**	.385
50	**DD-500**	.290	2200†	**DD-222**	.385
51	**DD-510**	.290	2500†	**DD-252**	.385
56	**DD-560**	.290	2700†	**DD-272**	.385
68	**DD-680**	.290	3000†	**DD-302**	.385
75	**DD-750**	.290	3300†	**DD-332**	.590
82	**DD-820**	.290	3900†	**DD-392**	.590
91	**DD-910**	.290	4000†	**DD-402**	.590
100	**DD-101**	.290	4300†	**DD-432**	.590
120	**DD-121**	.290	4700‡	**DD-472**	.590
130	**DD-131**	.290	4700†	**DD-472G**	.590
150	**DD-151**	.290	5000‡	**DD-5022**	.590
180	**DD-181**	.290	5000†	**DD-502**	.590
200	**DD-201**	.290	5600†	**DD-562**	.590
220	**DD-221**	.290	6800†	**DD-682**	.590
240	**DD-241**	.290	7500†	**DD-752**	.590
250	**DD-251**	.290	8200†	**DD-822**	.690
270	**DD-271**	.290	10,000†	**DD-103**	.690
300	**DD-301**	.290	10,000‡	**DD-1032**	.690
330	**DD-331**	.290	10,000†	**DD6-103**	.590
350	**DD-351**	.290	15,000§	**DD-153**	.690
360	**DD-361**	.290	20,000§	**DD-203**	.690
390	**DD-391**	.290	30,000§	**DD-303**	.718
400	**DD-401**	.290	40,000§	**DD-403**	.718
470	**DD-471**	.290	50,000§	**DD-503**	.875
470†	**DD-471G**	.290			

DD INDUSTRIAL NET EACH PRICES

Values, pF	Net Ea. 1-99	Pkg. of 100: 100	Pkg. of 100: 200-400	Pkg. of 100: 500-1M	Pkg. of 1M: 1M-3M	Pkg. of 1M: 4M-5M
3.3*–8	$0.15	$0.119	$0.075	$0.056	$0.048	$0.042
10–240	.15	.119	.075	.056	.038	.033
250–470	.15	.119	.075	.056	.041	.035
470†	.15	.119	.075	.056	.036	.031
500–750	.15	.119	.075	.056	.041	.035
800†	.15	.119	.075	.056	.036	.031
820, 910	.15	.119	.075	.056	.038	.033
1,000	.15	.119	.075	.056	.044	.038
1,000†	.15	.119	.075	.056	.036	.031
1,200	.15	.119	.075	.056	.044	.038
1,200†	.15	.119	.075	.056	.036	.031
1,300, 1,500	.15	.119	.075	.056	.044	.038
1,500†	.15	.119	.075	.056	.036	.031
1,600, 1,800	.15	.119	.075	.056	.044	.038
2,000†–3,000†	.15	.119	.075	.056	.038	.033
3,300†–4,300†	.15	.119	.075	.056	.044	.038
4,700‡	.15	.119	.075	.056	.046	.040
4,700†	.15	.119	.075	.056	.044	.038
5,000‡	.15	.119	.075	.056	.046	.040
5,000†	.15	.119	.075	.056	.044	.038
5,600†–7,500†	.15	.119	.075	.056	.044	.038
8,200†	.15	.119	.075	.056	.054	.047
10,000†	.24	.19	.12	.09	.054	.047
10,000‡	.24	.19	.12	.09	.062	.054
10,000†	.24	.19	.12	.09	.044	.038
15,000§	.24	.19	.12	.09	.054	.047
20,000§	.45	.356	.225	.169	.054	.047
30,000§	.45	.356	.225	.169	.099	.085
40,000§, 50,000§	.45	.356	.225	.169	.155	.145

Tolerance: * ±0.5 pF. †GMV. ‡ ±20%. § +80, −20%.

TYPE DD2 DUO-KAPS®

Single disc, dual capacity, Double Durez insulation. Rated 600 VDC, working; 1200 VDC, test. **Tolerance:** GMV. **Diameter:** DD2-102, .408″; DD2-152, .594″; DD2-502, .719″.

Values, μF	CRL No.	Net Ea. 1-99	Pkg. of 100: 100	Pkg. of 100: 200-400	Pkg. of 100: 500-1M
2 x .001	**DD2-102**	$0.24	$0.19	$0.12	$0.09
2 x .0015	**DD2-152**	.24	.19	.12	.09
2 x .005	**DD2-502***	.36	.285	.18	.135

***Tolerance:** −20, +80%.

TYPE DD3 SHIELDED DUO-KAPS

Three leads—two capacitors in the space formerly needed for one. Shielded to minimize stray capacities between discs. Rated 600 VDC, working; 1200 VDC, test. **Tolerance:** GMV. **Diameter:** DD3-102, DD3-152, .391″; DD3-202, DD3-502, .593″; DD3-103, .719″.

2 x .001	**DD3-102**	$0.30	$0.238	$0.15	$0.113
2 x .0015	**DD3-152**	.30	.238	.15	.113
2 x .002	**DD3-202**	.30	.238	.15	.113
2 x .005	**DD3-502**	.30	.238	.15	.113
2 x .01	**DD3-103**	.30	.238	.15	.113

TYPE DF FLAT-PLATE HI-KAPS®

A dependable 600 volt ceramic capacitor recommended for general replacement applications where their unusual thinness makes them useful. Types listed below are 1 7/16″ lg. x 1 1/16″ h. 600 WVDC, 1200 VDC test. Tol.: DF-503, GMV; DF-104, +80, −20%.

Cap., μF	CRL No.	Thickness	Net Each: 1-49	Net Each, Pkg. of 50: 50-100	Net Each, Pkg. of 50: 150-450	Net Each, Pkg. of 50: 500-1M
.05	**DF-503**	7/32″	$0.75	$0.594	$0.375	$0.28
.1	**DF-104**	19/64″	1.05	.83	.525	.394

MIL-C-11015 GENERAL PURPOSE CERAMIC DISC CAPACITORS (500 WVDC)

Primarily for bypass, coupling, or filter applications. High temperature wax impregnation of exclusive phenolic insulation affords maximum protection against humidity, voltage breakdown, and vibration. 500 WVDC, 1800 VDC test. .12″ thick. Dia.: CK60, .28″; CK61, .35″; CK62, .55″; CK63, .66″.

Cap., pF	CRL No. & MIL-C-11015 Designation	Cap., pF	CRL No. & MIL-C-11015 Designation	Cap., pF	CRL No. & MIL-C-11015 Designation
2.2*	**CK60BV2R2K**	220*	**CK60AX221K**	820†	**CK62BX821M**
3.3*	**CK60BV3R3K**	220†	**CK60AX221M**	1000*	**CK62BX102K**
4.7*	**CK60BV4R7K**	330*	**CK60AX331K**	1000†	**CK62BX102M**
6.8*	**CK60BV6R8K**	330†	**CK60AX331M**	1500*	**CK62BX152K**
10*	**CK60BV100K**	330*	**CK61BX331K**	1500†	**CK62BX152M**
15*	**CK60BV150K**	330†	**CK61BX331M**	2200*	**CK62AX222K**
22*	**CK60BV220K**	470*	**CK60AX471K**	2200†	**CK62AX222M**
33*	**CK60BX330K**	470†	**CK60AX471M**	2200*	**CK63BX222K**
33†	**CK60BX330M**	470*	**CK61BX471K**	2200†	**CK63BX222M**
47*	**CK60BX470K**	470†	**CK61BX471M**	3300*	**CK63BX332K**
47†	**CK60BX470M**	680*	**CK61BX681K**	3300†	**CK63BX332M**
150*	**CK60BX151K**	680†	**CK61BX681M**		
150†	**CK60BX151M**	820*	**CK62BX821K**		

Tolerances: * ±10%; † ±20%.

MIL-C-11015 INDUSTRIAL NET EACH PRICES

Values, pF	1-99	Pkg. of 100: 100	Pkg. of 100: 200-400	Pkg. of 100: 500-1M
2.2 thru 680	$0.21	$0.166	$0.105	$0.073
820 thru 1500	.27	.214	.135	.10
2200 (—AX—)	.27	.214	.135	.10
2200 (—BX—)	.30	.237	.15	.113
3300	.30	.237	.15	.113

TYPES CE TEMPERATURE STABLE AND CF SEMI-STABLE DISC HI-KAPS

Offer exceptional stability through an extended temperature range; for applications requiring low capacity change between −55° C and +85° C temperatures. Rated 500 WVDC. Life test, 1000 hours at 1000 VDC at +85° C. Leakage resistance, 10,000 megs, min. initial; 1000 megs, after humidity. Phenolic insulation vacuum impregnated with high temperature wax. Power factor, 2% max. at 1 kHz. Leads #22 tinned copper, 1½″ lg. minimum. Tolerance, ±10%. Only .156″ thick. **Dia.:** 150–470 pF, .290″; 500–800 pF, .390″; 1000 pF, .590″; 1200–1800 pF, .390″; 2000–3900 pF, .590″; 4700–6200 pF, .690″; 8200 and 10K pF, .920″.

Temperature Stable "K"						Temp. Semi-Stable "K"					
Cap. pF	No. CE-	Cap. pF	No. CE-	Cap. pF	No. CE-	Cap. pF	No. CF-	Cap. pF	No. CF-	Cap. pF	No. CF-
150	**151**	500	**501**	800	**801**	1200	**122**	2200	**222**	5000	**502**
220	**221**	560	**561**	1000	**102**	1500	**152**	3300	**332**	6200	**622**
330	**331**	680	**681**			1800	**182**	3900	**392**	8200	**822**
470	**471**	750	**751**			2000	**202**	4700	**472**	10 K	**103**

CE, CF INDUSTRIAL NET EACH PRICES

Values, pF	1-99	Pkg. of 100: 100	Pkg. of 100: 200-400	Pkg. of 100: 500-1M
150 thru 1800	$0.18	$0.143	$0.09	$0.068
2000 thru 6200	.21	.166	.105	.079
8200	.24	.19	.12	.09
10,000	.24	.19	.12	.09

CENTRALAB Ceramic Capacitors

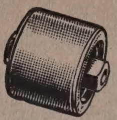
820

822, 825

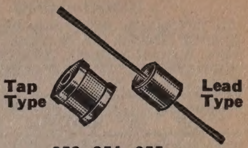
823

827

829



850, 858



853, 854, 855

CERAMIC TRIMMER CAPACITORS

Small, lightweight and easy-to-mount trimmers offer high stability even under extreme environmental conditions. Power factor less than 0.2% at 1 MHz (except 829 series, less than 0.25%). Mating surfaces of rotator and stator are ground optically flat and silicone lubricated to eliminate air film. Insulation resistance, 10,000 megohms min. **Suffix Z:** Indicates zero temperature coefficient. **Suffix N:** Indicates negative temperature coefficient.

TYPES 820, 822, 823, 827 AND 829

CRL Type 820—Rated 500 WVDC; 1500 VDC test. Silver-plated brass terminals 7/32″ lg., bent down 90° from plane of stator. Size, 39/64″ x 27/32″. Single-hole mounting with bracket; holes provided for two #4 machine screws when mounted without bracket.

CRL Type 822—Rated 500 WVDC; 1100 VDC test. Silver-plated brass terminals .296″ lg. x .15″ w., bent at 90° angle. Size, .656″ x .844″. Two #4 machine screw holes for mounting. Operating temperature, −55° C to +85° C.

CRL Type 823—Rated 500 WVDC; 1500 VDC test. Long, silver-plated brass terminals bent down 90° from stator plane; .531″ long. Size, 15/16″ x 1 7/32″. Mounts with studs set in base.

CRL Type 827—Rated 500 WVDC; 1000 VDC test. Terminals are silver-plated brass, 19/64″ long, bent down 90° from stator plane. Size, 17/32″ x 3/4″. High-grade phenolic mounting plate has two .122″ to .125″ mounting holes spaced 5/16″ apart; 9/16″ dia. hole for on-chassis mounting.

CRL Type 829—Rated 500 WVDC; 1000 VDC test. Diminutive tubular trimmer for perpendicular mounting; special locknut included. Wire leads are tinned #22 AWG. Nos. 829-3 and 829-4 are 1/2″ long; 829-6, 5/8″; 829-7 and 829-10, 3/4″.

Range, pF	CRL No.	Range, pF	CRL No.	Range, pF	CRL No.
1.0-3.5	**820D**	4.5-25	**822-AZ**	8.-50	**823-DN**
2.5-6.0	**820A**	2.0-6.0	**822-DN**	10.-100	**823-BN**
5.0-20	**820B**	4.0-30	**822-EN**	20.-125	**823-AN**
7.0-35	**820C**	4.5-25	**822-CN**	2.5-7	**827A**
35-55	**820E***	7.0-45	**822-BN**	3.5-12	**827B**
55-75	**820F***	8.0-50	**822-AN**	6.0-30	**827C**
70-90	**820G***	5.-12	**823-EZ**	7.0-35	**827D**
1.5-3	**822-DZ**	6.-25	**823-DZ**	.5-3	**829-3**
1.5-7	**822-EZ**	10.-50	**823-BZ**	1.-4	**829-4**
2.0-7.5	**822-CZ**	12-62	**823-AZ**	1.-6	**829-6**
2.5-13.0	**822-BZ**	5.-15	**823-FN**	1.-7.5	**829-7**
3.0-12	**822-FZ**	8.-25	**823-EN**	1.5-10	**829-10**

*Less brackets.

CRL TYPE 825 (MIL-C-81) TRIMMERS

Ceramic design meets MIL-C-81 specifications. Strong, low loss ceramic base with pure silver fired on top surface to form stator plate. Rated 500 WVDC; 1100 VDC test. Power Factor, less than 0.2% at 1 MHz. Drift ±0.75% or ±0.5 pF, whichever is greater. Insulation resistance, 10,000 megs, minimum. Silver-plated brass terminals bent at 90° angle from plane of stator, .296″ lg. Mtg. holes clear #4 machine screws. Body .844″ lg. x .656″ w. Shipping Weight, 2 oz.

Zero Temp. Coefficient			N650 Neg. Temp. Coefficient		
Cap., pF	CRL No.	MIL Spec.	Cap., pF	CRL No.	MIL Spec.
1.5–7	**825-EZ**	CV11A070	2.0–6	**825-DN**	CV11D060
3.0–12	**825-FZ**	CV11A120	4.0–30	**825-EN**	CV11D300
4.5–25	**825-AZ**	CV11A250	7.0–45	**825-BN**	CV11D450

N300 Temp. Characteristic			N500 Temp. Characteristic		
3.0–13	**825-AN**	CV11B130	4.0–30	**825-CN**	CV11C300
5.0–20	**825-FN**	CV11B200	7.0–45	**825-GN**	CV11C450

TRIMMER INDUSTRIAL NET EACH PRICES

CRL Type, All Values	1-4#	5-25•	30-100•	105-250•
820, 822	$1.14	$0.95	$0.90	$0.76
823	3.60	3.00	2.85	2.40
825	1.17	.98	.93	.78
827	.90	.75	.71	.60
829-3 to -10	.30*	.238†	15‡	.113§

#Pkg. of 1. •Pkg. of 5. *Pkg. of 1, Lots 1–24. †Pkg. of 25, Lots 25–100. ‡Pkg. of 25, Lots 125–475. §Pkg. of 25, Lots 500–1M.

CERAMIC TRANSMITTING CAPACITORS

Designed for use in high voltage, high frequency circuits such as in transmitters, induction heaters, electronic welders, X-ray and diathermy equipment. Power factor extremely low. Stable retrace characteristics. "Double cup" design affords long leakage paths and mechanical ruggedness. **Note:** RF load figures shown are based on 30 MHz RF load and are typical characteristics, not specific ratings.

TYPE 850 AND 858—5 AND 7.5 kV

Stud type has 1/8″ long hex studs 6-32 thread. Lug type 5/16″ long solder lugs with tapped 6-32 threaded hole. Size: 13/16″ dia. x 5/8″. Tolerance: ±10% 850 type; ±20% 858 type.

Cap., pF	CRL No.		kV DCW	Temp. Coeff.	RF Load at 30 MHz
	Stud Type	Lug Type			
25	**850S-25Z**	**850SL-25Z**	7.5	NPO	7 amps
50	**850S-50Z**	**850SL-50Z**	7.5	NPO	10 amps
50	**850S-50N**	**850SL-50N**	7.5	N750	8.8 amps
75	**850S-75N**	**850SL-75N**	7.5	N750	10 amps
100	**850S-100N**	**850SL-100N**	5	N750	9.8 amps
500	**858S-500**	....	5	Hi-K	....
1K	**858S-1000**	....	5	Hi-K	....

TYPE 853, 854, 855—5 kV

Lead type has 1 1/2″ axial leads. Tap type has axial screw terminals tapped 2-56. Size: 853, 1/2″ dia. x 7/16″. 854, 3/8″ dia. x 3/8″. 855, 1/4″ dia. x 11/32″; A Series: Add 1/16″ to dia., 3/64″ to lg. Tol.: ±10%.

Cap., pF	CRL No.		kV DCW	Temp. Coeff.	RF Load at 30 MHz
	Lead Type	Tap Type			
3	**855-3Z**	**855A-3Z**	5	NPO	1.8 amps
5	**855-5Z**	**855A-5Z**	5	NPO	1.8 amps
10	**854-10Z**	**854A-10Z**	5	NPO	1.8 amps
10	**855-10N**	**855A-10N**	5	N750	3.2 amps
20	**853-20Z**	**853A-20Z**	5	NPO	2.8 amps
20	**854-20N**	**854A-20N**	5	N750	3.2 amps
40	**853-40N**	**853A-40N**	5	N750	5.6 amps

TYPE 857—7.5 AND 15 kV

Axial screw terminals at both ends; 1/4″ deep, 10-32 NF-2 thread. Size: 1 9/32″ dia. x 1 57/64″. Tolerance: ±10%.

Cap., pF	CRL No.	Temp. Coeff.	RF Load at 30 MHz	kV DCW
25	**857-25Z**	NPO	12 amps	15
50	**857-50Z**	NPO	12 amps	15
100	**857-100N**	N750	14.4 amps	15
200	**857-200N**	N750	18.2 amps	7.5

TYPE 859—15 AND 20 kV

Terminals 7/16″ deep both ends, tapped 10-32. Size: 2″ dia. x 2 7/8″ overall. Tolerance: ±10%.

50	**859S-50Z**	NPO	30 amps	20
100	**859S-100Z**	NPO	30 amps	20
250	**859S-250N**	N750	30 amps	20
500	**859S-500N**	N3300	30 amps	15

TRANSMITTING CAPACITOR INDUSTRIAL NET EACH PRICES

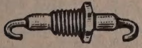
CRL Type, All Values	1-4#	5-25•	30-100•	105-250•
850	$2.70	$2.43	$2.14	$1.92
853, 854, 855	1.80	1.62	1.43	1.28
858	2.70	2.43	2.14	1.92

CRL Type, All Values	1-9#	10-24#	25-99#	100-249#
857 with suffix **Z**	$8.40	$7.56	$6.65	$5.99
857 with suffix **N**	7.20	6.48	5.70	5.13

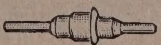
CRL Type, All Values	1-4#	5-9#	10-99#
859	$54.00	$48.60	$45.00

#Pkg. of 1. •Pkg. of 5.

FT AND MFT FEED-THRU (BUSHING MOUNT) CERAMIC CAPACITORS



FT



MFT

Rated 500 WVDC; 1000 VDC test. Designed for use in high frequency circuits requiring feed-thru with capacity ground to shield or chassis. Virtually no lead inductance; leads #16 tinned copper wire. **Type FT:** Leads hooked to facilitate soldering. Mounted with nut on 12–28 threaded bushing. **Type MFT:** Miniature version of FT for use in close quarters. Eyelet with flange of 7/32″ max. dia. is inserted into .16″ hole and soldered directly to chassis.

Type FT Hi-Kaps			Type MFT Hi-Kaps		
pF	No.	Tolerance	pF	No.	Tolerance
500	**FT-500**	±20%	50	**MFT-50**	±10%
1000	**FT-1000**	±20%	100	**MFT-100**	±10%
1500	**FT-1500**	−20, +50%	500	**MFT-500**	±20%
1800	**FT-1800**	−20, +50%	1000	**MFT-1000**	GMV
2300	**FT-2300**	−20, +50%			

FT, MFT INDUSTRIAL NET EACH PRICES

CRL Type, All Values	Net Ea. 1-99	Pkg. of 100		
		100	200-400	500-1M
FT	$0.75	$0.594	$0.375	$0.28
MFT	.30	.238	.15	.113

CENTRALAB Ceramic Capacitors

3000-6000 VOLT CAPACITORS

All these units are highly efficient for bypass-coupling in high frequency circuits under conditions of extreme humidity or temperature. Special phenolic insulation with triple, high temperature wax impregnation. Maintain high capacity and performance at 85° C. Tolerance: ±20%.

Capacity, pF	3000 Volt, DC Working		6000 Volt, DC Working	
	CRL No.	Dia.	CRL No.	Dia.
4.7	**DD30-4R7**	.330″	**DD60-4R7**	.630″
10	**DD30-100**	.330″	**DD60-100**	.630″
15	**DD30-150**	.330″	**DD60-150**	.630″
22	**DD30-220**	.330″	...	...
25	**DD30-250**	.330″	...	...
30	**DD30-300**	.330″	**DD60-300**	.630″
33	**DD30-330**	.330″	**DD60-330**	.630″
39	**DD30-390**	.330″	**DD60-390**	.630″
47	**DD30-470**	.330″	**DD60-470**	.630″
50	**DD30-500**	.330″	**DD60-500**	.630″
56	**DD30-560**	.330″	**DD60-560**	.630″
68	**DD30-680**	.330″	**DD60-680**	.630″
75	**DD30-750**	.330″	**DD60-750**	.630″
82	**DD30-820**	.330″	**DD60-820**	.630″
100	**DD30-101**	.330″	**DD60-101**	.630″
120	**DD30-121**	.330″	**DD60-121**	.630″
130	...	...	**DD60-131**	.630″
150	**DD30-151**	.330″	**DD60-151**	.630″
180	**DD30-181**	.330″	**DD60-181**	.630″
200	**DD30-201**	.330″	**DD60-201**	.630″
220	**DD30-221**	.330″	**DD60-221**	.630″
250	**DD30-251**	.330″	**DD60-251**	.630″
270	**DD30-271**	.330″	**DD60-271**	.630″
300	**DD30-301**	.330″	**DD60-301**	.630″
330	**DD30-331**	.330″	**DD60-331**	.630″
390	**DD30-391**	.330″	**DD60-391**	.630″
400	**DD30-401**	.330″	...	...
470	**DD30-471**	.330″	**DD60-471**	.630″
500	**DD30-501**	.330″	**DD60-501**	.630″
560	**DD30-561**	.330″	**DD60-561**	.630″
680	**DD30-681**	.330″	**DD60-681**	.630″
750	**DD30-751**	.330″	**DD60-751**	.630″
820	**DD30-821**	.430″	**DD60-821**	.630″
1000	**DD30-102**	.430″	**DD60-102**	.630″
1200	**DD30-122**	.430″	**DD60-122**	.630″
1500	**DD30-152**	.630″	**DD60-152**	.630″
2000	**DD30-202**	.630″	**DD60-202**	.730″
2200	**DD30-222**	.630″	**DD60-222**	.730″
2500	**DD30-252**	.630″	...	...
2700	**DD30-272**	.630″	...	...
3000	**DD30-302**	.630″	...	...
3300	**DD30-332**	.630″	...	...
3900	**DD30-392**	.730″	...	...
4700	**DD30-472**	.730″	...	...
5000	**DD30-502**	.800″	...	...

INDUSTRIAL NET EACH PRICES

TYPE DD30 (3000 WVDC)

Values, pF	Net Ea. 1-49	Pkg. of 50		
		50-100	150-450	500-1M
4.7 thru 120	$0.24	$0.19	$0.12	$0.09
150	.24	.19	.12	.09
180 thru 270	.24	.19	.12	.09
300 thru 470	.24	.19	.12	.09
500 and 560	.24	.19	.12	.09
680 thru 820	.24	.19	.12	.09
1000 thru 5000	.30	.238	.15	.113

TYPE DD60 (6000 WVDC)

Values, pF	Net Ea. 1-49	50-100	150-450	500-1M
4.7 thru 820	$0.36	$0.285	$0.18	$0.135
1000 thru 2200	.60	.475	.30	.225

TYPE DD16 HI-KAP® BUFFERS

Compact, easy to install. Long life, low cost. Able to withstand high heat, moisture, and vibration. Thickness, 11/64″. Tolerance: GMV. Rated 1600 WVDC.

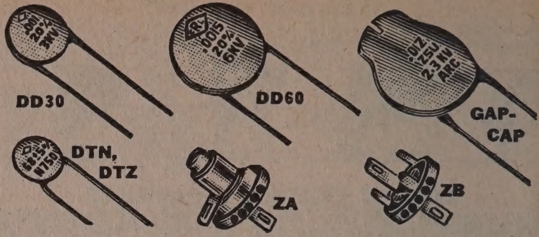
Cap., µF	CRL No.	Dia.	Net Each			
			1-99	Pkg. of 100		
				100	200-400	500-1M
.003	**DD16-302**	.605″	$0.27	$0.21	$0.135	$0.10
.004	**DD16-402**	.605″	.27	.21	.135	.10
.005	**DD16-502**	.605″	.27	.21	.135	.10
.006	**DD16-602**	.705″	.27	.21	.135	.10
.007	**DD16-702**	.705″	.27	.21	.135	.10
.0075	**DD16-752**	.835″	.27	.21	.135	.10
.008	**DD16-802**	.835″	.27	.21	.135	.10
.01	**DD16-103**	.835″	.27	.21	.135	.10
.015	**DD16-153***	.935″	.48	.38	.24	.18

*Tolerance, −20, +80%.

TYPE CI AC LINE DISC HI-KAPS® (1000 WVDC)

UL Approved per Underwriters Laboratories' Examination Service #E32296, dated 12-6-60. Suitable for continuous operation at 150 VAC, rms, 60 hertz. Recommended for AC by-pass application or where a steady or intermittent higher voltage may occur. Tol., ±20%.

Cap., pF	CRL No.	Max. Dia.	Net Each			
			1-99	Pkg. of 100		
				100	200-400	500-1M
470	**CI-471**	.440″	$0.18	$0.143	$0.09	$0.068
680	**CI-681**	.440″	.18	.143	.09	.068
1,000	**CI-102**	.640″	.21	.166	.105	.079
2,200	**CI-222**	.640″	.18	.143	.09	.068
5,000	**CI-502**	.730″	.18	.143	.09	.068
10,000	**CI-103**	.840″	.24	.19	.12	.09



GAP-CAP™ CAPACITORS

Parallel capacitor-spark gap combination is useful in applications requiring by-pass of transient overvoltages. In color TV usage, a minimum capacitance Gap-Cap inserted between the grid lead and chassis ground provides a low impedance path to ground for transients of 1500 V and above. Leads are #20 tinned copper.

CRL No.	Cap.	Tolerance	Max. Dia.	Max. Ht.	Max. Thk.	Voltage	
						Working	Arc
GAP-R75	.75 pF	Maximum	.440″	.620″	.250″	1 kV	1–2 kV
GAP-102	.001 µF	±20%	.420″	.545″	.195″	1 kV	2–3 kV
GAP-103	.01 µF	+80, −20%	.705″	.855″	.172″	1 kV	2–3 kV
GAP-203	.02 µF	±20%	.935″	1.060″	.195″	1 kV	2–3 kV
GAP-402	.004 µF	±10%	.960″	1.110″	.216″	3 kV	4–6 kV

INDUSTRIAL PRICES

CRL No.	Net Ea. 1-99	Net Ea., Package of 100		
		100	200-400	500-1M
GAP-R75	$0.21	$0.17	$0.105	$0.078
GAP-102	.39	.325	.19	.145
GAP-103	.36	.285	.18	.135
GAP-203	.58	.435	.32	.24
GAP-402	.66	.53	.33	.25

TEMPERATURE COMPENSATING DISCS

Replaces mica types in all applications. High stability, small size, using TC ceramic dielectric material. Type DTZ is NPO or zero TC disc type. Type DTN is N750TC type. Tol.: ±5% except (*), ±0.5 pF.

TYPE DTN (N750)

Cap., pF	CRL No.	Dia.	Thickness	Net Each			
				1-49	Pkg. of 50		
					50-100	200-400	500-1M
5	**DTN-5***	.320″	.180″	$0.18	$0.143	$0.06	$0.04
10	**DTN-10***	.290″	.156″	.18	.143	.06	.04
15	**DTN-15**	.290″	.156″	.18	.143	.06	.04
20	**DTN-20**	.290″	.156″	.18	.143	.06	.04
22	**DTN-22**	.290″	.156″	.18	.143	.06	.04
25	**DTN-25**	.290″	.156″	.18	.143	.06	.04
33	**DTN-33**	.290″	.156″	.18	.143	.06	.04
47	**DTN-47**	.290″	.156″	.18	.143	.06	.04
68	**DTN-68**	.390″	.156″	.18	.143	.06	.04
75	**DTN-75**	.390″	.156″	.18	.143	.06	.04
100	**DTN-100**	.390″	.156″	.18	.143	.06	.04
150	**DTN-150**	.590″	.156″	.18	.143	.08	.06
200	**DTN-200**	.590″	.156″	.18	.143	.08	.06
220	**DTN-220**	.590″	.156″	.18	.143	.08	.06
330	**DTN-330**	.690″	.156″	.18	.143	.08	.06

TYPE DTZ (NPO)

Cap., pF	CRL No.	Dia.	Thickness	1-49	50-100	200-400	500-1M
1.5	**DTZ-1R5***	.320″	.180″	$0.18	$0.143	$0.06	$0.04
2.2	**DTZ-2R2***	.290″	.156″	.18	.143	.06	.04
3.3	**DTZ-3R3***	.290″	.156″	.18	.143	.06	.04
4.7	**DTZ-4R7***	.290″	.156″	.18	.143	.06	.04
6.8	**DTZ-6R8***	.290″	.156″	.18	.143	.06	.04
10	**DTZ-10**	.290″	.156″	.18	.143	.06	.04
15	**DTZ-15**	.290″	.156″	.18	.143	.06	.04
20	**DTZ-20**	.290″	.156″	.18	.143	.06	.04
22	**DTZ-22**	.390″	.156″	.18	.143	.06	.04
25	**DTZ-25**	.390″	.156″	.18	.143	.06	.04
33	**DTZ-33**	.390″	.156″	.18	.143	.06	.04
47	**DTZ-47**	.590″	.156″	.18	.143	.07	.05
50	**DTZ-50**	.590″	.156″	.18	.143	.07	.05
68	**DTZ-68**	.590″	.156″	.18	.143	.07	.05
75	**DTZ-75**	.590″	.156″	.18	.143	.07	.05
82	**DTZ-82**	.590″	.156″	.18	.143	.07	.05
100	**DTZ-100**	.590″	.156″	.18	.143	.07	.05
120	**DTZ-120**	.690″	.156″	.18	.143	.07	.05
150	**DTZ-150**	.760″	.156″	.18	.143	.08	.06
180	**DTZ-180**	.594″	.235″	.30	.238	.15	.113
200	**DTZ-200**	.594″	.235″	.30	.238	.15	.113
220	**DTZ-220**	.719″	.250″	.30	.238	.15	.113
270	**DTZ-270**	.719″	.250″	.30	.238	.15	.113

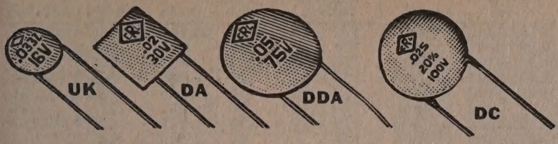
DISCOIDAL HI-KAPS®

Solder-sealed for long life and high quality performance. Shell is effective at ground potential. 500 WVDC; 1000 VDC test. **Type ZA** is standoff 3–48 thread tapped base and ground terminal. **Type ZB** is feed-thru style with three solder lugs.

Cap., pF	CRL No.	Tol.	Net Each			
			1-49	Pkg. of 50		
				50-100	150-450	500-1M
15	**ZA-150**	±10%	$0.75	$0.594	$0.375	$0.28
50	**ZA-500**	±10%	.75	.594	.375	.28
500	**ZA-501**	±20%	.75	.594	.375	.28
1000	**ZA-102**	GMV	.75	.594	.375	.28
15	**ZB-150**	±10%	.75	.594	.375	.28
50	**ZB-500**	±10%	.75	.594	.375	.28
500	**ZB-501**	±20%	.75	.594	.375	.28
1000	**ZB-102**	GMV	.75	.594	.375	.28

CENTRALAB Special Capacitors

LOW VOLTAGE CAPACITORS



Miniature ceramic capacitors designed to meet the demands for high capacity, low voltage applications in transistor circuits. Double durez insulation with high vacuum wax impregnation to withstand extreme temperature, humidity and vibration. Where size permits, capacitors are stamped with capacity and voltage.

TYPE UK ULTRA-KAPS® (3 WVDC) TOL. GMV

		Net Each					
			Pkg. of 100			Pkg. of 1M	
Cap., μF	CRL No.	1-99	100	200-400	500-1M	1-3M	4-5M
.1	UK-104	$0.42	$0.333	$0.21	$0.158	$0.145	$0.127
.22	UK-224	.30	.238	.15	.113	.094	.082
.47	UK-474	.30	.238	.15	.113	.098	.086
1.0	UK-105	.36	.285	.18	.135	.125	.11
2.2	UK-225	.42	.333	.21	.158	.153	.135

TYPE UK10 ULTRA-KAPS (10 WVDC) TOL. +80, −20%

.05	UK10-503	$0.18	$0.143	$0.09	$0.068	$0.06	$0.053
.1	UK10-104	.18	.143	.09	.068	.066	.058
.2	UK10-204	.30	.238	.15	.113	.095	.083
.47	UK10-474	.42	.333	.21	.158	.145	.127

TYPE UK16 ULTRA-KAPS (16 WVDC) TOL. +80, −20%

.01	UK16-103	$0.15	$0.12	$0.087	$0.074	$0.052	$0.046
.022	UK16-223	.16	.13	.09	.08	.052	.046
.033	UK16-333	.23	.18	.125	.105	.085	.076
.05	UK16-503	.23	.18	.125	.105	.085	.072
.068	UK16-683	.24	.19	.14	.12	.085	.076
.1	UK16-104	.19	.15	.11	.10	.082	.072
.15	UK16-154	.35	.289	.177	.15	.106	.093
.2	UK16-204	.53	.34	.253	.215	.145	.128
.3	UK16-304	.63	.506	.306	.26	.177	.156

TYPE UK20 ULTRA-KAPS (20 WVDC) TOL. +80, −20%

.05	UK20-503	$0.18	$0.143	$0.09	$0.068	$0.062	$0.055
.1	UK20-104	.21	.166	.105	.079	.077	.068
.2	UK20-204	.39	.31	.195	.146	.139	.122

TYPE UK25 ULTRA-KAPS (25 WVDC) TOL. ±20%

.01	UK25-103	$0.16	$0.13	$0.09	$0.08	$0.052	$0.046
.022	UK25-223	.19	.15	.11	.10	.082	.076
.033	UK25-333	.24	.19	.14	.12	.096	.085
.05	UK25-503	.24	.19	.14	.12	.085	.076
.068	UK25-683	.25	.20	.15	.13	.10	.088
.1	UK25-104	.25	.20	.15	.13	.085	.076
.15	UK25-154	.55	.427	.26	.22	.148	.13
.2	UK25-204	.73	.578	.35	.297	.209	.18

TYPE UK50 ULTRA-KAPS (50 WVDC) TOL. ±20%

.01	UK50-103	$0.19	$0.156	$0.095	$0.081	$0.056	$0.05
.015	UK50-153	.25	.198	.12	.102	.062	.054
.022	UK50-223	.35	.276	.168	.143	.093	.082
.033	UK50-333	.38	.307	.186	.158	.103	.09
.047	UK50-473	.46	.37	.222	.188	.125	.11
.05	UK50-503	.51	.406	.244	.207	.139	.122
.068	UK50-683	.68	.53	.32	.274	.188	.166
.1	UK50-104	.86	.69	.415	.352	.244	.215

TYPE CK DISC CAPACITORS (50 WVDC) TOL. +80, −20%

.005	CK-502	$0.21	$0.166	$0.105	$0.079	$0.048	$0.042
.01	CK-103	.21	.166	.105	.079	.052	.046
.02	CK-203	.21	.166	.105	.079	.076	.067
.025	CK-253	.21	.166	.105	.079	.076	.067
.03	CK-303	.21	.166	.105	.079	.076	.067
.05	CK-503	.30	.238	.15	.113	.088	.077
.1	CK-104	.60	.475	.30	.225	.216	.192

TYPE DA PLATE CAPACITORS (30 WVDC) TOL. +100, −20%

.02	DA-203	$0.36	$0.285	$0.18	$0.135	$0.102	$0.089
.05	DA-503	.81	.641	.405	.304	.235	.207
.1	DA-104	1.35	1.07	.675	.506	.40	.351

TYPE DDA DISC CAPACITORS (75 WVDC) TOL. +80, −30%

.05	DDA-503	$0.30	$0.238	$0.15	$0.113	$0.082	$0.073
.1	DDA-104	.60	.475	.30	.225	.203	.178

TYPE DDM DISC CAPACITORS (150 WVDC) TOL. +60, −40%

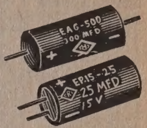
.005	DDM-502	$0.30	$0.238	$0.15	$0.113	$0.082	$0.073
.01	DDM-103	.30	.238	.15	.113	.082	.073
.02	DDM-203	.54	.428	.27	.203	.195	.171
2x.01	DDM2-103	.75	.595	.375	.282	.265	.233

NEW TYPE DC DISC CAPACITORS (100 WVDC) TOLERANCE ±20%

		Net Each					
			Pkg. of 100			Pkg. of 1M	
Cap., μF	CRL No.	1-99	100	200-400	500-1M	1M-3M	4M-5M
.005	DC-502	$0.15	$0.12	$0.084	$0.062	$0.045	$0.039
.01	DC-103	.15	.12	.084	.062	.045	.039
.02	DC-203	.21	.17	.126	.091	.054	.047
.025	DC-253	.24	.17	.126	.091	.054	.047
.03	DC-303	.24	.17	.126	.091	.054	.047
.05	DC-503	.26	.21	.177	.126	.091	.079
.1	DC-104	.58	.49	.344	.255	.195	.175

LOW VOLTAGE ALUMINUM ELECTROLYTICS

Miniature design directly replaces plastic case and aluminum case types. Offer high capacity in small size. Anode and cathode made of 99.99% pure etched aluminum foil; pre-tinned copper wire leads. Temp. range, −40° C to +85° C operating. Tol.: +100, −0%.



AXIAL LEAD TYPE EA

CRL No.*	Size, In.		Net Each				
	Dia.	Lgth.	1-24	25-49	50-100	150-249	250-1M
EA6-2	.215	.687	$0.53	$0.42	$0.33	$0.23	$0.20
EA6-5	.215	.687	.53	.42	.33	.23	.20
EA6-10	.215	.687	.53	.42	.33	.23	.20
EA6-15	.215	.687	.53	.42	.33	.23	.20
EA6-25	.250	.750	.53	.42	.33	.23	.20
EA6-50	.312	.875	.73	.50	.39	.28	.25
EA6-100	.375	.875	.80	.58	.45	.33	.30
EA6-150	.375	1.000	.83	.58	.45	.33	.30
EA6-250	.375	1.375	.83	.58	.45	.33	.30
EA6-500	.500	1.125	1.00	.67	.53	.38	.34
EA6-1000	.500	1.750	1.23	.98	.80	.57	.51
EA15-2	.215	.687	.57	.42	.33	.23	.20
EA15-5	.215	.687	.57	.42	.33	.23	.20
EA15-10	.250	.750	.57	.42	.33	.23	.20
EA15-15	.250	.750	.73	.50	.39	.28	.25
EA15-25	.312	.875	.73	.50	.39	.28	.25
EA15-50	.375	.875	.80	.54	.42	.33	.30
EA15-100	.437	1.125	.80	.63	.50	.35	.32
EA15-150	.473	1.125	.87	.66	.51	.41	.37
EA15-250	.500	1.125	.95	.77	.61	.41	.38
EA15-500	.625	1.500	1.25	.92	.73	.53	.48
EA15-1000	.750	2.000	1.50	1.35	1.10	.78	.73
EA15-2000	.875	2.250	2.10	1.80	1.50	1.06	1.00
EA30-2	.215	.687	.57	.42	.33	.23	.20
EA30-5	.250	.750	.57	.42	.33	.23	.20
EA30-10	.312	.875	.60	.50	.39	.27	.23
EA30-15	.312	.875	.80	.54	.42	.30	.27
EA30-25	.375	.875	.80	.54	.42	.30	.27
EA30-50	.375	1.125	.80	.67	.53	.38	.34
EA30-100	.500	1.125	.80	.67	.53	.38	.34
EA30-150	.500	1.625	1.09	.80	.62	.45	.40
EA30-250	.625	1.625	1.25	.92	.73	.53	.48
EA30-500	.750	2.000	1.60	1.40	1.12	.79	.71
EA30-1000	.875	2.000	2.47	2.11	1.67	1.28	1.16
EA50-2	.250	.750	.53	.42	.33	.25	.23
EA50-5	.312	.875	.73	.50	.39	.25	.21
EA50-10	.375	.875	.80	.54	.42	.30	.27
EA50-15	.375	1.000	.80	.58	.45	.33	.30
EA50-25	.375	1.125	.80	.58	.45	.33	.30
EA50-50	.437	1.375	.87	.63	.50	.36	.32
EA50-100	.625	1.375	1.25	.88	.70	.50	.45
EA50-150	.625	1.625	1.25	.88	.70	.50	.45
EA50-250	.750	1.875	1.75	1.44	1.14	.84	.76
EA50-500	.875	2.000	2.47	2.02	1.59	1.19	1.08
EA50-1000	1.000	2.500	2.95	2.27	1.82	1.33	1.18

PRINTED CIRCUIT LEAD TYPE EP

EP6-2	.250	.500	$0.75	$0.62	$0.48	$0.34	$0.28
EP6-5	.250	.500	.75	.62	.48	.34	.28
EP6-10	.250	.500	.75	.62	.48	.34	.28
EP6-25	.250	.500	.75	.62	.48	.34	.28
EP6-50	.312	.625	.83	.67	.53	.38	.32
EP6-100	.375	.625	.87	.69	.55	.39	.34
EP15-2	.250	.500	.75	.62	.48	.34	.28
EP15-5	.250	.500	.75	.62	.48	.34	.28
EP15-10	.250	.500	.75	.62	.48	.34	.28
EP15-25	.312	.625	.83	.67	.53	.38	.32
EP15-50	.375	.750	.90	.73	.58	.40	.36
EP15-100	.437	.875	1.00	.92	.73	.53	.48
EP30-2	.250	.500	.75	.62	.48	.34	.28
EP30-5	.250	.750	.75	.62	.48	.34	.28
EP30-10	.312	.625	.83	.67	.53	.38	.32
EP30-25	.375	.750	.83	.67	.53	.38	.32
EP30-50	.437	.875	1.00	.92	.73	.53	.48
EP50-2	.250	.500	.75	.62	.48	.34	.28
EP50-5	.312	.500	.75	.62	.48	.34	.28
EP50-10	.312	.750	.83	.67	.53	.38	.32
EP50-25	.437	.750	.92	.88	.70	.50	.45
EP50-50	.500	1.000	1.03	1.00	.79	.56	.51

*First number in CRL No. indicates WVDC; suffix number indicates capacitance in μF.

SPRAGUE Film Capacitors

192P PACER®

FILMITE® “E” CAPACITORS

Extended foil film sections are terminated in end caps with wire leads, to assure the best possible non-inductive section. Protected by heat shrinkable plastic sleeve or epoxy coating. Designed for operation to 85° C. Tolerance, ±10%.

80 WVDC

Sprague No.	µF	Dia. x L. Inches	Net Each, Lots of* 1-24	25-49	50-99	100-249
192P2229R8	.0022	.138 x 5/16	$0.42	$0.304	$0.236	$0.189
192P2729R8	.0027	.138 x 5/16	.42	.304	.236	.189
192P3329R8	.0033	.138 x 5/16	.42	.304	.236	.189
192P3929R8	.0039	.138 x 5/16	.42	.304	.236	.189
192P4729R8	.0047	.138 x 5/16	.42	.304	.236	.189
192P5629R8	.0056	.170 x 3/8	.42	.304	.236	.189
192P6829R8	.0068	.170 x 3/8	.42	.304	.236	.189
192P8229R8	.0082	.170 x 3/8	.42	.304	.236	.189
192P1039R8	.01	.170 x 3/8	.39	.286	.222	.178
192P1239R8	.012	.170 x 7/16	.42	.306	.238	.19
192P1539R8	.015	.170 x 7/16	.45	.329	.256	.204
192P1839R8	.018	.170 x 1/2	.45	.333	.259	.207
192P2239R8	.022	.170 x 1/2	.45	.338	.263	.21
192P2739R8	.027	.204 x 7/16	.48	.342	.266	.213
192P3339R8	.033	.204 x 7/16	.48	.347	.27	.216
192P3939R8	.039	.204 x 9/16	.48	.356	.277	.221
192P4739R8	.047	.204 x 9/16	.51	.365	.284	.227
192P5639R8	.056	.225 x 9/16	.51	.376	.292	.234
192P6839R8	.068	.225 x 9/16	.54	.394	.306	.245
192P8239R8	.082	.290 x 1/2	.57	.412	.32	.256
192P1049R8	.1	.290 x 1/2	.57	.421	.327	.262
192P1249R8	.12	.290 x 5/8	.66	.497	.387	.309
192P1549R8	.15	.290 x 5/8	.72	.533	.415	.332
192P1849R8	.18	.318 x 5/8	.78	.587	.457	.365
192P2249R8	.22	.318 x 5/8	.87	.646	.502	.402
192P2749R8	.27	.318 x 7/8	.93	.691	.537	.43
192P3349R8	.33	.318 x 7/8	.99	.729	.567	.454
192P3949R8	.39	.318 x 1 3/16	1.05	.772	.60	.48
192P4749R8	.47	.318 x 1 3/16	1.11	.815	.634	.507

200 WVDC

Sprague No.	µF	Dia. x L. Inches	Net Each, Lots of* 1-24	25-49	50-99	100-249
192P10192	.0001	.138 x 5/16	$0.36	$0.261	$0.203	$0.162
192P12192	.00012	.138 x 5/16	.36	.261	.203	.162
192P15192	.00015	.138 x 5/16	.36	.261	.203	.162
192P18192	.00018	.138 x 5/16	.36	.261	.203	.162
192P22192	.00022	.138 x 5/16	.36	.261	.203	.162
192P27192	.00027	.138 x 5/16	.36	.261	.203	.162
192P33192	.00033	.138 x 5/16	.36	.261	.203	.162
192P39192	.00039	.138 x 5/16	.36	.261	.203	.162
192P47192	.00047	.138 x 5/16	.36	.261	.203	.162
192P56192	.00056	.138 x 5/16	.33	.239	.186	.148
192P68192	.00068	.138 x 5/16	.33	.239	.186	.148
192P82192	.00082	.138 x 5/16	.33	.239	.186	.148
192P10292	.001	.138 x 5/16	.30	.209	.163	.13
192P12292	.0012	.138 x 5/16	.30	.207	.161	.129
192P15292	.0015	.138 x 5/16	.30	.209	.163	.13
192P18292	.0018	.170 x 5/16	.30	.209	.163	.13
192P22292	.0022	.170 x 5/16	0.30	$0.212	$0.165	$0.132
192P27292	.0027	.170 x 5/16	.30	.212	.165	.132
P19233292	.0033	.170 x 5/16	.30	.212	.165	.132
192P39292	.0039	.170 x 7/16	.30	.214	.166	.133
192P47292	.0047	.170 x 7/16	.30	.216	.168	.134
192P56292	.0056	.170 x 7/16	.30	.218	.17	.136
192P68292	.0068	.170 x 7/16	.30	.221	.172	.137
192P82292	.0082	.170 x 1/2	.33	.232	.18	.144
192P10392	.01	.170 x 1/2	.33	.236	.184	.147
192P12392	.012	.204 x 7/16	.33	.241	.187	.15
192P15392	.015	.204 x 7/16	.33	.243	.189	.151
192P18392	.018	.204 x 9/16	.33	.248	.193	.154
192P22392	.022	.204 x 9/16	.36	.252	.196	.157
192P27392	.027	.225 x 9/16	.36	.268	.208	.167
192P33392	.033	.225 x 9/16	.39	.281	.219	.175
192P39392	.039	.290 x 1/2	.39	.295	.229	.183
192P47392	.047	.290 x 1/2	.42	.308	.24	.192
192P56392	.056	.290 x 5/8	.45	.326	.254	.203
192P68392	.068	.290 x 5/8	.48	.342	.266	.213
192P82392	.082	.318 x 5/8	.48	.36	.28	.224
192P10492	.1	.318 x 5/8	.51	.376	.292	.234
192P12492	.12	.318 x 7/8	.54	.394	.306	.245
192P15492	.15	.318 x 7/8	.60	.45	.35	.28
192P18492	.18	.318 x 1 3/16	.66	.477	.371	.297
192P22492	.22	.318 x 1 3/16	.60	.506	.394	.315

400 WVDC

Sprague No.	µF	Dia. x L. Inches	Net Each, Lots of* 1-24	25-49	50-99	100-249
192P47194	.00047	.170 x 3/8	$0.36	$0.261	$0.203	$0.162
192P56194	.00056	.170 x 3/8	.36	.261	.203	.162
192P68194	.00068	.170 x 3/8	.33	.25	.194	.155
192P82194	.00082	.170 x 3/8	.36	.268	.208	.167
192P10294	.001	.170 x 3/8	.36	.268	.208	.167
192P12294	.0012	.170 x 3/8	.36	.268	.208	.167
192P15294	.0015	.170 x 3/8	.36	.268	.208	.167
192P18294	.0018	.170 x 7/16	.36	.272	.212	.169
192P22294	.0022	.170 x 7/16	.36	.272	.212	.169
192P27294	.0027	.204 x 7/16	.36	.272	.212	.169
192P33294	.0033	.204 x 7/16	.36	.272	.212	.169
192P39294	.0039	.204 x 7/16	.36	.272	.212	.169
192P47294	.0047	.204 x 7/16	.36	.272	.212	.169
192P56294	.0056	.225 x 9/16	.39	.275	.214	.171
192P68294	.0068	.225 x 9/16	.39	.275	.214	.171
192P82294	.0082	.225 x 9/16	.39	.277	.215	.172
192P10394	.01	.225 x 9/16	.39	.277	.215	.172
192P12394	.012	.290 x 1/2	.42	.302	.235	.188
192P15394	.015	.290 x 1/2	.42	.308	.24	.192
192P18394	.018	.290 x 5/8	.45	.326	.254	.203
192P22394	.022	.290 x 5/8	.45	.338	.263	.21
192P27394	.027	.318 x 5/8	.48	.356	.277	.221
192P33394	.033	.318 x 5/8	.51	.365	.284	.227
192P39394	.039	.318 x 7/8	.54	.405	.315	.252
192P47394	.047	.318 x 7/8	.57	.421	.327	.262
192P56394	.056	.318 x 1 3/16	.60	.43	.334	.267
192P68394	.068	.318 x 1 3/16	.60	.443	.345	.276

*Quantities of 1–24 supplied in Kleer-Pak; larger quantities in bulk pack. Prices on 250–499 and 500–999 quantities available on request.

TYPE 118P SUBMINIATURE 125° C DIFILM® METALLIZED CAPACITORS

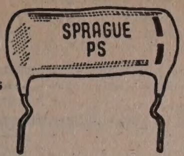
Hermetically sealed with glass-to-metal solder-seal terminals. Self-healing dielectric. May be used at extremely low voltages. **Tolerance:** ±10% as listed; ±20% available.

Cap., µF	WV DC	Plain Metal Case: Sprague No. 118P-*	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499*	With Plastic Sleeve: Sprague No. 118P-*	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499*
.01	200	10392S2	$ 3.16	$2.37	$1.778	$1.185	$0.948	10392S4	$ 3.284	$2.463	$1.847	$1.232	$0.985
.015	200	15392S2	3.16	2.37	1.778	1.185	.948	15392S4	3.284	2.463	1.847	1.232	.985
.022	200	22392S2	2.84	2.13	1.598	1.065	.852	22392S4	2.964	2.223	1.667	1.112	.889
.033	200	33392S2	2.84	2.13	1.598	1.065	.852	33392S4	2.964	2.223	1.667	1.112	.889
.047	200	47392S2	2.776	2.082	1.562	1.041	.833	47392S4	2.90	2.175	1.631	1.088	.87
.068	200	68392S2	2.844	2.133	1.60	1.067	.853	68392S4	2.968	2.226	1.67	1.113	.89
.082	200	82392S2	2.848	2.136	1.602	1.068	.854	82392S4	2.972	2.229	1.672	1.115	.892
.1	200	10492S2	2.868	2.151	1.613	1.076	.86	10492S4	2.992	2.244	1.683	1.122	.898
.15	200	15492S2	2.92	2.19	1.643	1.095	.876	15492S4	3.044	2.283	1.712	1.142	.913
.22	200	22492S2	2.92	2.19	1.643	1.095	.876	22492S4	3.044	2.283	1.712	1.142	.913
.27	200	27492S2	3.024	2.268	1.701	1.134	.907	27492S4	3.148	2.361	1.771	1.181	.944
.33	200	33492S2	3.128	2.346	1.76	1.173	.938	33492S4	3.252	2.439	1.829	1.22	.976
.47	200	47492S2	3.36	2.52	1.89	1.26	1.008	47492S4	3.572	2.679	2.009	1.34	1.072
.56	200	56492S2	3.40	2.55	1.913	1.275	1.02	56492S4	3.612	2.709	2.032	1.355	1.084
.68	200	68492S2	3.44	2.58	1.935	1.29	1.032	68492S4	3.652	2.739	2.054	1.37	1.096
.82	200	82492S2	3.56	2.67	2.003	1.335	1.068	82492S4	3.772	2.829	2.122	1.415	1.132
1.0	200	10592S2	3.64	2.73	2.048	1.365	1.092	10592S4	3.852	2.889	2.167	1.445	1.156
1.5	200	15592S2	5.08	3.81	2.858	1.905	1.524	15592S4	5.292	3.969	2.977	1.985	1.588
2.0	200	20592S2	6.04	4.53	3.398	2.265	1.812	20592S4	6.284	4.713	3.535	2.357	1.885
3.0	200	30592S2	6.32	4.74	3.555	2.37	1.896	30592S4	6.564	4.923	3.692	2.462	1.969
4.0	200	40592S2	6.76	5.07	3.803	2.535	2.028	40592S4	7.068	5.301	3.976	2.651	2.12
5.0	200	50592S2	7.36	5.52	4.14	2.76	2.208	50592S4	7.736	5.802	4.352	2.901	2.321
6.0	200	60592S2	8.44	6.33	4.748	3.165	2.532	60592S4	8.816	6.612	4.959	3.306	2.645
8.0	200	80592S2	8.64	6.48	4.86	3.24	2.592	80592S4	9.016	6.762	5.072	3.381	2.705
10.0	200	10692S2	9.20	6.90	5.175	3.45	2.76	10692S4	9.576	7.182	5.387	3.591	2.873
12.0	200	12692S2	10.64	7.98	5.985	3.99	3.192	12692S4	10.776	8.082	6.062	4.041	3.233
.15	400	15494S2	3.34	2.505	1.879	1.253	1.002	15494S4	3.552	2.664	1.998	1.332	1.066
1.0	400	10594S2	5.04	3.78	2.835	1.89	1.512	10594S4	5.348	4.011	3.008	2.006	1.604
2.0	400	20594S2	6.96	5.22	3.195	2.61	2.088	20594S4	7.336	5.502	4.127	2.751	2.201
3.0	400	30594S2	8.20	6.15	4.613	3.075	2.46	30594S4	8.576	6.432	4.824	3.216	2.573
.01	600	10396S2	2.80	2.10	1.575	1.05	.84	10396S4	2.964	2.223	1.667	1.112	.889
.047	600	47396S2	2.908	2.181	1.636	1.091	.872	47396S4	3.032	2.274	1.706	1.137	.91
.1	600	10496S2	3.296	2.472	1.854	1.236	.989	10496S4	3.508	2.631	1.973	1.316	1.052
.15	600	15496S2	3.424	2.568	1.926	1.284	1.027	15496S4	3.636	2.727	2.045	1.364	1.091
.22	600	22496S2	3.612	2.709	2.032	1.355	1.084	22496S4	3.824	2.868	2.151	1.434	1.147
.33	600	33496S2	4.012	3.009	2.257	1.505	1.204	33496S4	4.224	3.168	2.376	1.584	1.267
.47	600	47496S2	4.324	3.243	2.432	1.622	1.297	47496S4	4.568	3.426	2.57	1.713	1.37
1.0	600	10596S2	6.12	4.59	3.443	2.295	1.836	10596S4	6.496	4.872	3.654	2.436	1.949
2.0	600	20596S2	7.80	5.85	4.388	2.925	2.34	20596S4	8.176	6.132	4.599	3.066	2.453
2.5	600	25596S2	8.84	6.63	4.973	3.315	2.652	25596S4	9.216	6.912	5.184	3.456	2.765

*Order by complete Sprague number; example: **118P**10392S2. ***500-999 Quantity Prices on Request.**

SPRAGUE Orange Drop® Capacitors

TYPE PS ORANGE DROP DIFILM® DIPPED TUBULAR CAPACITORS



- **Double dipped in bright orange epoxy resin—beats heat and humidity.**
- **Outside foil on all units identified by black striping.**
- **Dual dielectric (polyester film–paper) solidly impregnated with exclusive HCX®—produces rock-hard capacitor section.**
- **Crimped wire leads for correct spacing when mounted on printed wiring boards.**

200 VDC

Sprague No. 2PS-	µF	Net Each, Lots of			
		1-24	25-49	50 Up	100-249*
S20	.02	$0.21	$0.141	$0.11	$0.088
S22	.022	.21	.141	.11	.088
S47	.047	.21	.153	.119	.095
S50	.05	.21	.153	.119	.095
P10	.1	.24	.178	.139	.111
P15	.15	.33	.23	.179	.143
P20	.2	.39	.285	.221	.177
P22	.22	.39	.285	.221	.177
P25	.25	.54	.396	.308	.246
P33	.33	.54	.396	.308	.246
P47	.47	.72	.53	.412	.33
P50	.5	.72	.53	.412	.33

400 VDC

Sprague No. 4PS-	µF	Net Each, Lots of			
		1-24	25-49	50 Up	100-249*
S10	.01	$0.18	$0.124	$0.096	$0.077
S15	.015	.21	.141	.11	.088
S20	.02	.21	.153	.119	.095
S22	.022	.21	.153	.119	.095
S25	.025	.24	.161	.125	.10
S30	.03	.24	.161	.125	.10
S33	.033	.24	.161	.125	.10
S40	.04	.24	.161	.125	.10
S47	.047	.24	.161	.125	.10
S50	.05	.24	.161	.125	.10
S56	.056	.24	.178	.139	.111
S68	.068	.24	.178	.139	.111
S75	.075	.33	.23	.179	.143
P10	.1	.33	.23	.179	.143
P15	.15	.39	.285	.221	.177
P20	.2	.54	.396	.308	.246
P22	.22	.54	.396	.308	.246
P25	.25	.72	.53	.412	.33

600 VDC

Sprague No. 6PS-	µF	Net Each, Lots of			
		1-24	25-49	50 Up	100-249*
D10	.001	$0.18	$0.116	$0.09	$0.072
D12	.0012	.18	.116	.09	.072
D15	.0015	.18	.116	.09	.072
D18	.0018	.18	.116	.09	.072
D20	.002	.18	.116	.09	.072
D22	.0022	.18	.116	.09	.072
D25	.0025	.18	.116	.09	.072
D27	.0027	.18	.116	.09	.072
D30	.003	.18	.116	.09	.072
D33	.0033	.18	.116	.09	.072
D39	.0039	.18	.116	.09	.072
D40	.004	.18	.116	.09	.072
D47	.0047	.18	.116	.09	.072
D50	.005	.18	.116	.09	.072
D56	.0056	.18	.124	.096	.077
D60	.006	.18	.124	.096	.077
D68	.0068	.18	.124	.096	.077
D75	.0075	.18	.124	.096	.077
D80	.008	.18	.124	.096	.077
D82	.0082	.18	.124	.096	.077
S10	.01	.18	.124	.096	.077
S12	.012	.21	.141	.11	.088
S15	.015	.21	.141	.11	.088
S20	.02	.21	.153	.119	.095
S22	.022	.21	.153	.119	.095
S25	.025	.24	.161	.125	.10
S27	.027	.24	.161	.125	.10
S30	.03	.24	.161	.125	.10
S33	.033	.24	.161	.125	.10
S35	.035	.24	.161	.125	.10
S39	.039	.24	.178	.139	.111
S40	.04	.24	.178	.139	.111
S47	.047	.24	.178	.139	.111
S50	.05	.24	.178	.139	.111
S56	.056	.27	.198	.154	.123
S60	.06	.27	.198	.154	.123
S68	.068	.27	.198	.154	.123
S75	.075	.27	.198	.154	.123
S82	.082	.33	.23	.179	.143
P10	.1	.33	.23	.179	.143
P15	.15	.48	.349	.271	.217
P20	.2	.72	.53	.412	.33
P22	.22	.72	.53	.412	.33
P25	.25	.87	.644	.501	.40
P33	.33	.87	.644	.501	.40
P47	.47	1.05	.767	.597	.477

1000 VDC

Sprague No. 10PS-	µF	Net Each, Lots of			
		1-24	25-49	50 Up	100-249*
D10	.001	$0.18	$0.116	$0.09	$0.072
D15	.0015	.18	.116	.09	.072
D20	.002	.18	.116	.09	.072
D22	.0022	.18	.116	.09	.072
D30	.003	.18	.124	.096	.077
D33	.0033	.18	.124	.096	.077

1000 VDC (CONT'D)

Sprague No. 10PS-	µF	Net Each, Lots of			
		1-24	25-49	50 Up	100-249*
D40	.004	$0.21	$0.141	$0.11	$0.088
D47	.0047	.21	.141	.11	.088
D50	.005	.21	.141	.11	.088
D68	.0068	.21	.141	.11	.088
S10	.01	.21	.153	.119	.095
S15	.015	.24	.161	.125	.10
S22	.022	.27	.198	.154	.123
S33	.033	.30	.215	.167	.134
S39	.039	.33	.248	.193	.154
S47	.047	.33	.248	.193	.154
S56	.056	.45	.329	.256	.205
S68	.068	.45	.329	.256	.205
S82	.082	.54	.396	.308	.246
P10	.1	.54	.396	.308	.246

1600 VDC

Sprague No. 16PS-	µF	Net Each, Lots of			
		1-24	25-49	50 Up	100-249*
D10	.001	$0.24	$0.178	$0.139	$0.111
D15	.0015	.27	.198	.154	.123
D20	.002	.27	.198	.154	.123
D22	.0022	.27	.198	.154	.123
D30	.003	.33	.23	.179	.143
D33	.0033	.33	.23	.179	.143
D39	.0039	.33	.248	.193	.154
D40	.004	.33	.248	.193	.154
D47	.0047	.33	.248	.193	.154
D50	.005	.33	.248	.193	.154
D60	.006	.39	.285	.221	.177
D68	.0068	.39	.285	.221	.177
D70	.007	.39	.285	.221	.177
D75	.0075	.39	.285	.221	.177
D80	.008	.45	.329	.256	.205
S10	.01	.45	.329	.256	.205
S15	.015	.54	.396	.308	.246
S18	.018	.72	.529	.411	.329
S20	.02	.72	.53	.412	.33
S22	.022	.72	.53	.412	.33
S30	.03	.87	.644	.501	.40
S33	.033	.87	.644	.501	.40
S40	.04	1.05	.767	.597	.477
S47	.047	1.05	.767	.597	.477
S50	.05	1.05	.767	.597	.477

2000 VDC

20PS-					
D10	.001	$0.27	$0.198	$0.154	$0.123
D15	.0015	.33	.23	.179	.143
D22	.0022	.33	.23	.179	.143
D33	.0033	.33	.248	.193	.154
D47	.0047	.39	.285	.221	.177
D56	.0056	.45	.329	.256	.205
D68	.0068	.45	.329	.256	.205
D82	.0082	.54	.396	.308	.246
S27	.027	1.05	.767	.597	.477

*100–249, bulk-pack; other quantities, Kleer-Pak. 250 Up bulk-pack available on request.

TYPE 225P FILMITE® "E" ORANGE DROP RECTANGULARS

Designed for PC board use with radial leads. Similar in appearance to PS Series, above. Used in TV sets, radios and commercial equipment. Sections are wound from polyester film and thin gauge foil; wax-free conformal epoxy coating protects against moisture. For operation up to 85° C, 75 and 100 VDC. Tolerance, ±10%.

75 VDC‡

Sprague No. 225P-	µF	Net Each, Lots of			
		1-24	25 Up	50-99	100-249*
1249R75*	.12	$0.27	$0.198	$0.154	$0.123
1549R75*	.15	.27	.198	.154	.123
1849R75*	.18	.33	.23	.179	.143
2249R75*	.22	.33	.23	.179	.143
2749R75*	.27	.39	.287	.223	.179
3349R75*	.33	.39	.287	.223	.179
3949R75*	.39	.54	.396	.308	.246
4749R75*	.47	.54	.396	.308	.246

‡Available until the present stock is exhausted.

100 VDC

Sprague No. 225P-	µF	Net Each, Lots of			
		1-24	25 Up	50-99	100-249*
10291WD3	.001	$0.18	$0.124	$0.096	$0.077
12291WD3	.0012	.18	.124	.096	.077
15291WD3	.0015	.18	.124	.096	.077
18291WD3	.0018	.18	.124	.096	.077
22291WD3	.0022	.18	.124	.096	.077
27291WD3	.0027	.18	.124	.096	.077
33291WD3	.0033	.18	.124	.096	.077
39291WD3	.0039	.18	.124	.096	.077
47291WD3	.0047	.18	.124	.096	.077
56291WD3	.0056	.18	.124	.096	.077
68291WD3	.0068	.18	.124	.096	.077
82291WD3	.0082	.18	.124	.096	.077
10391WD3	.01	.18	.124	.096	.077
12391WD3	.012	.18	.124	.096	.077
15391WD3	.015	.18	.124	.096	.077
18391WD3	.018	.18	.131	.102	.082

100 VDC (CONT'D)

Sprague No. 225P-	µF	Net Each, Lots of			
		1-24	25 Up	50-99	100-249*
22391WD3	.022	$0.18	$0.131	$0.102	$0.082
27391WD3	.027	.21	.141	.11	.088
33391WD3	.033	.21	.141	.11	.088
39391WD3	.039	.21	.153	.119	.095
47391WD3	.047	.21	.153	.119	.095
56391WD3	.056	.24	.168	.131	.105
68391WD3	.068	.24	.168	.131	.105
82391WD3	.082	.24	.178	.139	.111
10491WD3	.1	.24	.178	.139	.111
12491XD3	.12	.27	.198	.154	.123
15491XD3	.15	.27	.198	.154	.123
18491XD3	.18	.33	.23	.179	.143
22491XD3	.22	.33	.23	.179	.143
27491XD3	.27	.39	.287	.223	.179
33491XD3	.33	.39	.287	.223	.179
39491XD3	.39	.54	.396	.308	.246
47491XD3	.47	.54	.396	.308	.246
56491YD3	.56	.75	.557	.433	.347
68491YD3	.68	.75	.557	.433	.347
82491YD3	.82	.84	.631	.491	.393
10591YD3	1.0	.84	.631	.491	.393

200 VDC

Sprague No. 225P-	µF	Net Each, Lots of			
		1-24	25 Up	50-99	100-249*
10292XD3	.001	$0.18	$0.124	$0.096	$0.077
15292XD3	.0015	.18	.124	.096	.077
22292XD3	.0022	.18	.124	.096	.077
33292XD3	.0033	.18	.124	.096	.077
47292XD3	.0047	.18	.124	.096	.077
68292XD3	.0068	.18	.124	.096	.077

200 VDC (CONT'D)

Sprague No. 225P-	µF	Net Each, Lots of			
		1-24	25 Up	50-99	100-249*
10392XD3	.01	$0.18	$0.124	$0.096	$0.077
15392XD3	.015	.18	.124	.096	.077
22392XD3	.022	.18	.131	.102	.082
33392XD3	.033	.21	.141	.11	.088
47392XD3	.047	.21	.153	.119	.095
68392XD3	.068	.24	.168	.131	.105
10492XD3	.1	.24	.178	.139	.111
15492XD3	.15	.27	.198	.154	.123
22492XD3	.22	.33	.23	.179	.143
33492YD3	.33	.39	.287	.223	.179
47492YD3	.47	.54	.396	.308	.246
68492YD3	.68	.75	.557	.433	.374

400 VDC

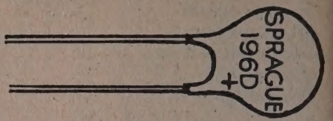
10294XD3	.001	$0.18	$0.124	$0.096	$0.077
15294XD3	.0015	.18	.124	.096	.077
22294XD3	.0022	.18	.124	.096	.077
33294XD3	.0033	.18	.124	.096	.077
47294XD3	.0047	.18	.124	.096	.077
68294XD3	.0068	.18	.124	.096	.077
10394XD3	.01	.18	.124	.096	.077
15394XD3	.015	.18	.131	.102	.082
22394XD3	.022	.21	.141	.11	.088
33394XD3	.033	.21	.153	.119	.095
47394XD3	.047	.24	.168	.131	.105
68394XD3	.068	.24	.178	.139	.111
10494XD3	.1	.27	.198	.154	.123
15494YD3	.15	.33	.248	.193	.154
22494YD3	.22	.72	.53	.412	.33
33494YD3	.33	.84	.631	.491	.393
47494YD3	.47	1.65	1.238	.963	.77

*When ordering, include final suffix **XD3** (e.g., 225P1249R75**XD3**). *1–24, 25 Up supplied in Kleer-Pak; all others, bulk-pack. Write for 250 Up bulk-pack prices.

SPRAGUE Tantalum Capacitors

TYPE 196D DIPPED TANTALEX® SOLID-TANTALUM CAPACITORS

Epoxy-dipped coating economically provides good electrical and mechanical protection. High stability, very little capacitance change; low dissipation factor permits higher ripples. Radial leads for mounting on PC boards. **Operating Temperature:** −55° C to +85° C. **Tolerance:** ±10%; ±20% available as noted. **Case Size and Leads:** Last three characters indicate case sizes and leads. Case Size: **H**, .175″ dia. x .375″ h.; **J**, .225″ dia. x .425″ h.; **K**, .225″ dia. x .450″ h.; **L**, .450″ dia. x .500″ h.; **M**, .600″ dia. x .800″ h.; **P**, .400″ dia. x .650″ h.; **T**, .400″ dia. x .750″ h. Numbers ending with **A1** have straight leads with .125″ spacing; **A3** indicates straight leads with .250″ spacing. Numbers ending with **E4** have "Hockeystick" leads with .250″ spacing. For short "Hockeystick" pin leads (.187″ l.; .250″ spacing) change A1 or E4 to **E3.** For short "Hairpin Crimped" leads (.187″ l.; .250″ spacing) change A3 to **B3.**



4 WVDC, 5.3 V SURGE

Sprague Number	Cap., µF	Net Each, Lots of				
		5-Pak		Bulk Pack		
		1-49	50-99	100-499	500-999	1000-4999*
196D106X9004HA1*	10	$0.50	$0.32	$0.26	$0.23	$0.17
196D126X9004HA1	12	.50	.32	.26	.23	.17
196D476X9004JA1*	47	.58	.37	.30	.27	.20
196D566X9004JA1	56	.58	.37	.30	.27	.20
196D826X9004KA1	82	.66	.42	.34	.30	.22
196D107X9004KA1*	100	.66	.42	.34	.30	.22
196D187X9004LA3	180	1.30	.82	.66	.58	.41
196D187X9004PE4	180	1.30	.82	.66	.58	.41
196D227X9004LA3*	220	1.30	.82	.66	.58	.41
196D227X9004PE4*	220	1.30	.82	.66	.58	.41

6 WVDC, 8 V SURGE

196D685X9006HA1*	6.8	$0.50	$0.32	$0.26	$0.23	$0.17
196D825X9006HA1	8.2	.50	.32	.26	.23	.17
196D336X9006JA1*	33	.58	.37	.30	.27	.20
196D396X9006JA1	39	.58	.37	.30	.27	.20
196D476X9006KA1*	47	.66	.42	.34	.30	.22
196D566X9006KA1	56	.66	.42	.34	.30	.22
196D686X9006KA1*	68	.66	.42	.34	.30	.22
196D127X9006LA3	120	1.30	.82	.66	.58	.41
196D127X9006PE4	120	1.30	.82	.66	.58	.41
196D157X9006LA3*	150	1.30	.82	.66	.58	.41
196D157X9006PE4*	150	1.30	.82	.66	.58	.41
196D277X9006MA3	270	2.26	1.42	1.14	1.00	.70
196D277X9006TE4	270	2.26	1.42	1.14	1.00	.70
196D337X9006MA3*	330	2.26	1.42	1.14	1.00	.70
196D337X9006TE4*	330	2.26	1.42	1.14	1.00	.70

10 WVDC, 13 V SURGE

196D475X9010HA1*	4.7	$0.50	$0.32	$0.26	$0.23	$0.17
196D565X9010HA1	5.6	.50	.32	.26	.23	.17
196D226X9010JA1*	22	.58	.37	.30	.27	.20
196D276X9010JA1	27	.58	.37	.30	.27	.20
196D336X9010KA1*	33	.66	.42	.34	.30	.22
196D396X9010KA1	39	.66	.42	.34	.30	.22
196D826X9010LA3	82	1.30	.82	.66	58	.41
196D826X9010PE4	82	1.30	.82	.66	.58	.41
196D107X9010LA3*	100	1.30	.82	.66	.58	.41
196D107X9010PE4*	100	1.30	.82	.66	.58	.41
196D187X9010MA3	180	2.26	1.42	1.14	1.00	.70
196D187X9010TE4	180	2.26	1.42	1.14	1.00	.70
196D227X9010MA3*	220	2.26	1.42	1.14	1.00	.70
196D227X9010TE4*	220	2.26	1.42	1.14	1.00	.70

15 WVDC, 20 V SURGE

196D335X9015HA1*	3.3	$0.50	$0.32	$0.26	$0.23	$0.17
196D395X9015HA1	3.9	.50	.32	.26	.23	.17
196D156X9015JA1*	15	.58	.37	.30	.27	.20
196D186X9015JA1	18	.58	.37	.30	.27	.20
196D226X9015KA1*	22	.66	.42	.34	.30	.22
196D566X9015LA3	56	1.30	.82	.66	.58	.41
196D566X9015PE4	56	1.30	.82	.66	.58	.41
196D686X9015LA3*	68	1.30	.82	66	.58	.41
196D686X9015PE4*	68	1.30	.82	.66	.58	.41
196D127X9015MA3	120	2.26	1.42	1.14	1.00	.70
196D127X9015TE4	120	2.26	1.42	1.14	1.00	.70
196D157X9015MA3*	150	2.26	1.42	1.14	1.00	.70
196D157X9015TE4*	150	2.26	1.42	1.14	1.00	.70

20 WVDC, 26 V SURGE

196D275X9020HA1	2.7	$0.50	$0.32	$0.26	$0.23	$.17
196D106X9020JA1*	10	.58	.37	.30	.27	.20
196D126X9020JA1	12	.58	.37	.30	.27	.20
196D156X9020KA1*	15	.66	.42	.34	.30	.22
196D396X9020LA3	39	1.30	.82	.66	.58	.41
196D396X9020PE4	39	1.30	.82	.66	.58	.41
196D476X9020LA3*	47	1.30	.82	.66	.58	.41
196D476X9020PE4*	47	1.30	.82	.66	.58	.41
196D826X9020MA3	82	2.26	1.42	1.14	1.00	.70
196D826X9020TE4	82	2.26	1.42	1.14	1.00	.70
196D107X9020MA3*	100	2.26	1.42	1.14	1.00	.70
196D107X9020TE4*	100	2.26	1.42	1.14	1.00	.70

25 WVDC, 32 V SURGE

196D125X9025HA1	1.2	$0.50	$0.32	$0.26	$0.23	$0.17
196D155X9025HA1*	1.5	.50	.32	.26	.23	.17
196D185X9025HA1	1.8	.50	.32	.26	.23	.17
196D225X9025HA1*	2.2	.50	.32	.26	.23	.17
196D565X9025JA1	5.6	.58	.37	.30	.27	.20
196D685X9025JA1*	6.8	.58	.37	.30	.27	.20
196D825X9025JA1	8.2	.58	.37	.30	.27	.20
196D106X9025KA1*	10	.66	.42	.34	.30	.22
196D126X9025KA1	12	.66	.42	.34	.30	.22
196D186X9025LA3	18	$1.30	$0.82	$0.66	$0.58	$0.41
196D226X9025LA3*	22	1.30	.82	.66	.58	.41
196D276X9025LA3	27	1.30	.82	.66	.58	.41
196D276X9025PE4	27	1.30	.82	.66	.58	.41
196D336X9025LA3*	33	1.30	.82	.66	.58	.41
196D336X9025PE4*	33	1.30	.82	.66	.58	.41
196D396X9025MA3	39	2.26	1.42	1.14	1.00	.70
196D476X9025MA3*	47	2.26	1.42	1.14	1.00	.70
196D566X9025MA3	56	2.26	1.42	1.14	1.00	.70
196D566X9025TE4	56	2.26	1.42	1.14	1.00	.70
196D686X9025MA3*	68	2.26	1.42	1.14	1.00	.70
196D686X9025TE4*	68	2.26	1.42	1.14	1.00	.70

35 WVDC, 46 V SURGE

196D104X9035HA1*	.10	$0.50	$0.32	$0.26	$0.23	$0.17
196D124X9035HA1	.12	.50	.32	.26	.23	.17
196D154X9035HA1*	.15	.50	.32	.26	.23	.17
196D184X9035HA1	.18	.50	.32	.26	.23	.17
196D224X9035HA1*	.22	.50	.32	.26	.23	.17
196D274X9035HA1	.27	.50	.32	.26	.23	.17
196D334X9035HA1*	.33	.50	.32	.26	.23	.17
196D394X9035HA1	.39	.50	.32	.26	.23	.17
196D474X9035HA1*	.47	.50	.32	.26	.23	.17
196D564X9035HA1	.56	.50	.32	.26	.23	.17
196D684X9035HA1*	.68	.50	.32	.26	.23	.17
196D824X9035HA1	.82	.50	.32	.26	.23	.17
196D105X9035HA1*	1.0	.50	.32	.26	.23	.17
196D125X9035JA1	1.2	.58	.37	.30	.27	.20
196D155X9035JA1*	1.5	.58	.37	.30	.27	.20
196D185X9035JA1	1.8	.58	.37	.30	.27	.20
196D225X9035JA1*	2.2	.58	.37	.30	.27	.20
196D275X9035JA1	2.7	.58	.37	.30	.27	.20
196D335X9035JA1*	3.3	.58	.37	.30	.27	.20
196D395X9035JA1	3.9	.58	.37	.30	.27	.20
196D475X9035JA1*	4.7	.58	.37	.30	.27	.20
196D565X9035KA1	5.6	.66	.42	.34	.30	.22
196D685X9035KA1*	6.8	.66	.42	.34	.30	.22
196D825X9035LA3	8.2	1.30	.82	.66	.58	.41
196D825X9035PE4	8.2	1.30	.82	.66	.58	.41
196D106X9035LA3*	10	1.30	.82	.66	.58	.41
196D106X9035PE4*	10	1.30	.82	.66	.58	.41
196D126X9035LA3	12	1.30	.82	.66	.58	.41
196D126X9035PE4	12	1.30	.82	.66	.58	.41
196D156X9035LA3*	15	1.30	.82	.66	.58	.41
196D156X9035PE4*	15	1.30	.82	.66	.58	.41
196D186X9035MA3	18	1.42	.90	.72	.63	.45
196D186X9035PE4	18	1.42	.90	.72	.63	.45
196D226X9035MA3*	22	1.42	.90	.72	.63	.45
196D226X9035PE4*	22	1.42	.90	.72	.63	.45
196D276X9035MA3	27	2.26	1.42	1.14	1.00	.70
196D276X9035TE4	27	2.26	1.42	1.14	1.00	.70
196D336X9035MA3*	33	2.26	1.42	1.14	1.00	.70
196D336X9035TE4*	33	2.26	1.42	1.14	1.00	.70
196D396X9035TE4	39	2.26	1.42	1.14	1.00	.70
196D476X9035TE4*	47	2.26	1.42	1.14	1.00	.70

50 WVDC, 65 V SURGE

196D104X9050HA1*	.10	$0.70	$0.45	$0.36	$0.32	$0.23
196D124X9050HA1	.12	.70	.45	.36	.32	.23
196D154X9050HA1*	.15	.70	.45	.36	.32	.23
196D184X9050HA1	.18	.70	.45	.36	.32	.23
196D224X9050HA1*	.22	.70	.45	.36	.32	.23
196D274X9050HA1	.27	.70	.45	.36	.32	.23
196D334X9050HA1*	.33	.70	.45	.36	.32	.23
196D394X9050HA1	.39	.70	.45	.36	.32	.23
196D474X9050HA1*	.47	.70	.45	.36	.32	.23
196D564X9050HA1	.56	.70	.45	.36	.32	.23
196D684X9050HA1*	.68	.70	.45	.36	.32	.23
196D824X9050HA1	.82	.70	.45	.36	.32	.23
196D105X9050HA1*	1.0	.70	.45	.36	.32	.23
196D125X9050JA1	1.2	.78	.50	.40	.35	.25
196D155X9050JA1*	1.5	.78	.50	.40	.35	.25
196D185X9050JA1	1.8	.78	.50	.40	.35	.25
196D225X9050JA1*	2.2	.78	.50	.40	.35	.25
196D275X9050JA1	2.7	.78	.50	.40	.35	.25
196D335X9050JA1*	3.3	.78	.50	.40	.35	.25
196D395X9050KA1	3.9	.86	.55	.44	.39	.28
196D475X9050KA1*	4.7	.86	.55	.44	.39	.28
196D565X9050PE4	5.6	1.32	.90	.68	.61	.44
196D685X9050PE4*	6.8	1.32	.90	.68	.61	.44
196D825X9050PE4	8.2	1.32	.90	.68	.61	.44
196D106X9050PE4*	10	1.32	.90	.68	.61	.44
196D126X9050PE4	12	1.32	.90	.68	.61	.44
196D156X9050PE4*	15	1.32	.90	.68	.61	.44
196D186X9050TE4	18	2.68	1.70	1.35	1.17	.82
196D226X9050TE4*	22	2.68	1.70	1.35	1.17	.82

*±20% tolerance available. Change 9th character in number to **0** (196D106X0004HA1) and deduct **2c** per each price break-out.

***5000 UP BULK PRICING AVAILABLE ON REQUEST**

SPRAGUE Tantalum Capacitors

TYPE 150D SOLID ELECTROLYTE TANTALEX® CAPACITORS

True miniaturization with characteristics previously unobtainable in electrolytics. Solid electrolyte cannot leak or corrode; hermetically sealed. **Temperature Range:** 85° C without derating; to 125° C with derating. **Ordering Information:** Select capacitance and read across chart to voltage desired. Suffix on number (A, B, R or S) refers to size; find this key and your capacitance in the price chart, at bottom of page.

TYPE 150D ±10% TOLERANCE CAPACITANCE VALUES AVAILABLE

Cap., µF	Sprague Prefix†	Suffix for WVDC of:									
		6	10	15	20	35	50	60	75	100	125
.0047	150D472X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.0056	150D562X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.0068	150D682X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.0082	150D822X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.01	150D103X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.012	150D123X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.015	150D153X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.018	150D183X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.022	150D223X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.027	150D273X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.033	150D333X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.039	150D393X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.047	150D473X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.056	150D563X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.068	150D683X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.082	150D823X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.1	150D104X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.12	150D124X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.15	150D154X				9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.18	150D184X				9020A	9035A	9050A	9060A	9075A	9100A	9100A
.22	150D224X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.27	150D274X	9006A	9010A	9015A	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.33	150D334X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.39	150D394X	9006A	9010A	9015A	9020A	9035A	9050A	9060A	9075A	9100A	9100A
.47	150D474X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100A*	9100A*
.56	150D564X	9006A	9010A	9015A	9020A	9035A	9050A	9060A	9075A	9100A	9100B
.68	150D684X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060A*	9075A*	9100B*	9100B*
.82	150D824X	9006A	9010A	9015A	9020A	9035A	9050A	9060B	9075B	9100B	9100B
1.0	150D105X	9006A*	9010A*	9015A*	9020A*	9035A*	9050A*	9060B*	9075B*	9100B*	9100B*
1.2	150D125X	9006A	9010A	9015A	9020A	9035B	9050B	9060B	9075B	9100B	9100B
1.5	150D155X	9006A*	9010A*	9015A*	9020A*	9035B*	9050B*	9060B*	9075B*	9100B*	9100B*
1.8	150D185X	9006A	9010A	9015A	9020A	9035B	9050B	9060B	9075B	9100B	9100B
2.2	150D225X	9006A*	9010A*	9015A*	9020A*	9035B*	9050B*	9060B*	9075B*	9100B*	9100B*
2.7	150D275X	9006A	9010A	9015A	9020B	9035B	9050B	9060B	9075B	9100B	
3.3	150D335X	9006A*	9010A*	9015A*	9020B*	9035B*	9050B*	9060B*	9075B*	9100R*	
3.9	150D395X	9006A	9010A	9015B	9020B	9035B	9050B	9060B	9075B	9100R	
4.7	150D475X	9006A*	9010A*	9015B*	9020B*	9035B*	9050B*	9060R*	9075R*	9100R*	
5.6	150D565X	9006A	9010B	9015B	9020B	9035B	9050R	9060R	9075R	9100R	
6.8	150D685X	9006A*	9010B*	9015B*	9020B*	9035B*	9050R*	9060R*	9075R*	9100R*	
8.2	150D825X	9006B	9010B	9015B	9020B	9035R	9050R	9060R	9075R		
10	150D106X	9006B*	9010B*	9015B*	9020B*	9035R*	9050R*	9060R*	9075R*		
12	150D126X	9006B	9010B	9015B	9020B	9035R	9050R	9060S	9075S		
15	150D156X	9006B*	9010B*	9015B*	9020B*	9035R*	9050R*	9060S*	9075S*		
18	150D186X	9006B	9010B	9015B	9020R	9035R	9050R	9060S			
22	150D226X	9006B*	9010B*	9015B*	9020R*	9035R*	9050S*	9060S*			
27	150D276X	9006B	9010B	9015R	9020R	9035S					
33	150D336X	9006B*	9010B*	9015R*	9020R*	9035S*					
39	150D396X	9006B	9010B	9015R	9020R	9035S					
40	150D406X		9010B*								
47	150D476X	9006B*	9010R*	9015R*	9020R*	9035S*					
56	150D566X	9006B	9010R	9015R	9020S						
60	150D606X	9006B*									
68	150D686X	9006R*	9010R*	9015R*	9020S*						
82	150D826X	9006R	9010R	9015S	9020S						
100	150D107X	9006R*	9010R*	9015S*	9020S*						
120	150D127X	9006R*	9010R*	9015S							
150	150D157X	9006R*	9010S*	9015S*							
180	150D187X	9006R*	9010S								
220	150D227X	9006S*	9010S*								
270	150D277X	9006S*									
330	150D337X	9006S*									

†PRICE CHART AND ORDERING INFORMATION FOR TYPE 150D CAPACITORS

When ordering, show full number (as above for ±10% tol.) for value desired (e.g., 150D224X**9006A**). Items noted (*) available in ±20% tol.; to order, change first digit in suffix to **0** (e.g., 150D224X**0**006A). For ±5% tol., for 6 to 50 volts double ±20% tol. unit prices, for 60 to 125 volts triple ±20% tol. unit prices; to order, change first digit in suffix to **5** (e.g., 150D224X**5**006A). For bare metal case (size as listed below), add final digit **0** (150D224X9006A**0**). For plastic film sleeve (add .010″ dia. x .036″ lg. for all units), use final digit **2** (150D224X9006A**2**) and add **1c** to prices.

WV DC	Case Size	Size, In. Dia. x Lgth.	Cap. Range µF	±10% Tolerance (X9), Net Each, Lots of					±20% Tolerance (X0), Net Each, Lots of				
				1-24	25-49	50-99	100-499	500-999	1-24	25-49	50-99	100-499	500-999
6, 10, 15 or 20	A	.125 x .250	.0047–.027†	$ 0.99	$0.75	$0.63	$0.51	$0.45	$0.96	$0.72	$0.60	$0.48	$0.42
			.033–6.8†	.83	.63	.53	.43	.38	.80	.60	.50	.40	.35
	B	.175 x .438	2.7–60†	.91	.69	.58	.47	.42	.88	.66	.55	.44	.39
	R	.279 x .650	18–180†	1.83	1.38	1.16	.93	.81	1.80	1.35	1.13	.90	.78
	S	.341 x .750	56–330†	3.59	2.70	2.26	1.81	1.59	3.56	2.67	2.23	1.78	1.56
35	A	.125 x .250	.0047–.027	.99	.75	.63	.51	.45	.96	.72	.60	.48	.42
			.033–1.0	.83	.63	.53	.43	.38	.80	.60	.50	.40	.35
	B	.175 x .438	1.2–6.8	.91	.69	.58	.47	.42	.88	.66	.55	.44	.39
	R	.279 x .650	8.2–22	1.83	1.38	1.16	.93	.81	1.80	1.35	1.13	.90	.78
	S	.341 x .750	27–47	3.59	2.70	2.26	1.81	1.59	3.56	2.67	2.23	1.78	1.56
50	A	.125 x .250	.0047–.027	1.07	.81	.68	.55	.49	1.04	.78	.65	.52	.46
			.033–1.0	.99	.75	.63	.51	.45	.96	.72	.60	.48	.42
	B	.175 x .438	1.2–4.7	1.07	.81	.68	.55	.49	1.04	.78	.65	.52	.46
	R	.279 x .650	5.6–10	2.59	1.95	1.63	1.31	1.15	2.56	1.92	1.60	1.28	1.12
			12–18	2.75	2.07	1.73	1.39	1.22	2.72	2.04	1.70	1.36	1.19
	S	.341 x .750	22	5.35	4.02	3.36	2.69	2.36	5.32	3.99	3.33	2.66	2.33
60 or 75	A	.125 x .250	.0047–.68	1.98	1.51	1.28	1.04	.92	1.88	1.41	1.18	.94	.82
	B	.175 x .438	.82–3.9	2.06	1.57	1.33	1.08	.96	1.96	1.47	1.23	.98	.86
	R	.279 x .650	4.7–10	3.16	2.42	2.05	1.68	1.50	2.96	2.22	1.85	1.48	1.30
	S	.341 x .750	12–22‡	11.84	8.93	7.48	6.02	5.29	11.64	8.73	7.28	5.82	5.09
100	A	.125 x .250	.0047–.56	4.74	3.78	3.16	2.69	2.46	3.71	2.96	2.50	2.13	1.95
	B	.175 x .438	.68–1.7	5.05	3.98	3.36	2.85	2.60	3.90	3.12	2.64	2.25	2.05
	R	.279 x .650	3.3–6.8	8.31	6.66	5.54	4.80	4.39	6.46	5.11	4.33	3.69	3.38
125	A	.125 x .250	.0047–.47	5.30	4.24	3.58	3.04	2.80	4.08	3.26	2.75	2.34	2.15
	B	.175 x .438	.56–2.2	5.58	4.46	3.78	3.22	2.94	4.29	3.43	2.91	2.48	2.26

†Min.-max. for all four voltages combined; see individual voltages in table, above, for specific values and range. ‡12 and 15 µF, for 75 WVDC.

SPRAGUE Tantalum Capacitors

TYPE CSR13 SOLID ELECTROLYTE TUBULAR TANTALUM CAPACITORS TO MIL-C-39003/1A SPECIFICATIONS

Established reliability, solid tantalums meet satellite, missile, military equipment, computer and other complex equipment requirements for minimum failure. Meet MIL-C-39003 requirements in choice of 2%, 1% or 0.1% failure rate versions. Extensively tested and culled to meet highest environmental conditions such as high G shock, vibration, immersion, etc. (Full specifications on request.) **Temp. Range:** −55° C to +125° C. Supplied with insulating sleeve.

STOCK VALUES MIL-C-39003 (2% FAILURE RATE)

6 WVDC

Cap., µF	MIL Type Number	*
5.6	**CSR13B565KL**	A
6.8	**CSR13B685KL†**	A
47	**CSR13B476KL†**	B
56	**CSR13B566KL**	B
150	**CSR13B157KL†**	C
180	**CSR13B187KL**	C
270	**CSR13B277KL**	D
330	**CSR13B337KL†**	D

10 WVDC

Cap., µF	MIL Type Number	*
3.9	**CSR13C395KL**	A
4.7	**CSR13C475KL†**	A
27	**CSR13C276KL**	B
33	**CSR13C336KL†**	B
39	**CSR13C396KL**	B
82	**CSR13C826KL**	C
100	**CSR13C107KL†**	C
120	**CSR13C127KL**	C
180	**CSR13C187KL**	D
220	**CSR13C227KL†**	D

15 WVDC

Cap., µF	MIL Type Number	*
2.7	**CSR13D275KL**	A
3.3	**CSR13D335KL†**	A
18	**CSR13D186KL**	B
22	**CSR13D226KL†**	B
56	**CSR13D566KL**	C
68	**CSR13D686KL†**	C
120	**CSR13D127KL**	D
150	**CSR13D157KL†**	D

20 WVDC

Cap., µF	MIL Type Number	*
1.2	**CSR13E125KL**	A
1.5	**CSR13E155KL†**	A
1.8	**CSR13E185KL**	A
2.2	**CSR13E225KL†**	A
8.2	**CSR13E825KL**	B
10	**CSR13E106KL†**	B
12	**CSR13E126KL**	B
15	**CSR13E156KL†**	B
27	**CSR13E276KL**	C
33	**CSR13E336KL†**	C
39	**CSR13E396KL**	C
47	**CSR13E476KL†**	C
56	**CSR13E566KL**	D
68	**CSR13E686KL†**	D
82	**CSR13E826KL**	D
100	**CSR13E107KL†**	D

35 WVDC

Cap., µF	MIL Type Number	*
5.6	**CSR13F565KL**	B
6.8	**CSR13F685KL†**	B
22	**CSR13F226KL†**	C
27	**CSR13F276KL**	D
33	**CSR13F336KL†**	D
39	**CSR13F396KL**	D
47	**CSR13F476KL†**	D

50 WVDC

Cap., µF	MIL Type Number	*
.0047	**CSR13G472KL†**	A
.0056	**CSR13G562KL**	A
.0068	**CSR13G682KL†**	A
.0082	**CSR13G822KL**	A
.01	**CSR13G103KL†**	A
.012	**CSR13G123KL**	A
.015	**CSR13G153KL†**	A
.018	**CSR13G183KL**	A
.022	**CSR13G223KL†**	A
.027	**CSR13G273KL**	A
.033	**CSR13G333KL†**	A
.039	**CSR13G393KL**	A
.047	**CSR13G473KL†**	A
.056	**CSR13G563KL**	A
.068	**CSR13G683KL†**	A
.082	**CSR13G823KL**	A
.1	**CSR13G104KL†**	A
.12	**CSR13G124KL**	A
.15	**CSR13G154KL†**	A
.18	**CSR13G184KL**	A
.22	**CSR13G224KL†**	A
.27	**CSR13G274KL**	A
.33	**CSR13G334KL†**	A
.39	**CSR13G394KL**	A
.47	**CSR13G474KL†**	A
.56	**CSR13G564KL**	A
.68	**CSR13G684KL†**	A
.82	**CSR13G824KL**	A
1	**CSR13G105KL†**	A
1.2	**CSR13G125KL**	B
1.5	**CSR13G155KL†**	B
1.8	**CSR13G185KL**	B
2.2	**CSR13G225KL†**	B
2.7	**CSR13G275KL**	B
3.3	**CSR13G335KL†**	B
3.9	**CSR13G395KL**	B
4.7	**CSR13G475KL†**	B
5.6	**CSR13G565KL**	C
6.8	**CSR13G685KL†**	C
8.2	**CSR13G825KL**	C
10	**CSR13G106KL†**	C
12	**CSR13G126KL**	C
15	**CSR13G156KL†**	C
18	**CSR13G186KL**	C
22	**CSR13G226KL†**	D

75 WVDC

Cap., µF	MIL Type Number	*
.1	**CSR13H104KL†**	A
.12	**CSR13H124KL**	A
.15	**CSR13H154KL†**	A
.18	**CSR13H184KL**	A
.22	**CSR13H224KL†**	A
.27	**CSR13H274KL**	A
.33	**CSR13H334KL†**	A
.39	**CSR13H394KL**	A
.47	**CSR13H474KL†**	A
.56	**CSR13H564KL**	A
.68	**CSR13H684KL†**	A
.82	**CSR13H824KL**	B
1	**CSR13H105KL†**	B
1.2	**CSR13H125KL**	B
1.5	**CSR13H155KL†**	B
1.8	**CSR13H185KL**	B
2.2	**CSR13H225KL†**	B
2.7	**CSR13H275KL**	B
3.3	**CSR13H335KL†**	B
3.9	**CSR13H395KL**	B
4.7	**CSR13H475KL†**	C
5.6	**CSR13H565KL**	C
6.8	**CSR13H685KL†**	C
8.2	**CSR13H825KL**	C
10	**CSR13H106KL†**	C
12	**CSR13H126KL**	D
15	**CSR13H156KL†**	D

100 WVDC

Cap., µF	MIL Type Number	*
.0047	**CSR13J472KL†**	A
.0056	**CSR13J562KL**	A
.0068	**CSR13J682KL†**	A
.0082	**CSR13J822KL**	A
.01	**CSR13J103KL†**	A
.012	**CSR13J123KL**	A
.015	**CSR13J153KL†**	A
.018	**CSR13J183KL**	A
.022	**CSR13J223KL†**	A
.027	**CSR13J273KL**	A
.033	**CSR13J333KL†**	A
.039	**CSR13J393KL**	A
.047	**CSR13J473KL†**	A
.056	**CSR13J563KL**	A
.068	**CSR13J683KL†**	A
.082	**CSR13J823KL**	A
.1	**CSR13J104KL†**	A
.12	**CSR13J124KL**	A
.15	**CSR13J154KL†**	A
.18	**CSR13J184KL**	A
.22	**CSR13J224KL†**	A
.27	**CSR13J274KL**	A
.33	**CSR13J334KL†**	A
.39	**CSR13J394KL**	A
.47	**CSR13J474KL†**	A
.56	**CSR13J564KL**	A
.68	**CSR13J684KL†**	B
.82	**CSR13J824KL**	B
1.0	**CSR13J105KL†**	B
1.2	**CSR13J125KL**	B
1.5	**CSR13J155KL†**	B
1.8	**CSR13J185KL**	B
2.2	**CSR13J225KL†**	B
2.7	**CSR13J275KL**	B

Tolerance: All units shown, ±10%. †±20% available; to order, change next to last letter to **M** (e.g., CSR13B685**M**L).

Above stock values are for 2% Failure Rate. **For 1% Failure Rate:** Change suffix L to **M** (e.g., CSR13B565K**M**); prices shown at right. **For 0.1% Failure Rate:** Change suffix L to **P** (CSR13B565K**P**), available in values 6 thru 50 WVDC only; prices as shown at right.

2% FAILURE RATE (L Suffix)

±10% Tolerance

WV DC	*	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
6 thru 35	A	$ 0.84	$0.64	$0.54	$0.44	$0.39
	B	.92	.70	.59	.48	.43
	C	1.84	1.39	1.17	.94	.82
	D	3.60	2.71	2.27	1.82	1.60
50	A†	1.08	.82	.68	.56	.50
	A‡	1.00	.76	.64	.52	.46
	B	1.08	.82	.69	.56	.50
	C§	2.60	1.96	1.64	1.32	1.16
	C#	2.76	2.08	1.74	1.40	1.23
	D	5.36	4.03	3.37	2.70	2.37
75	A	1.99	1.52	1.29	1.05	.93
	B	2.07	1.58	1.34	1.09	.97
	C	3.17	2.43	2.06	1.69	1.51
	D	11.85	8.94	7.49	6.03	5.30
100	A	4.18	3.35	2.86	2.44	2.24
	B	4.40	3.52	3.00	2.58	2.36

±20% Tolerance

WV DC	*	1-24	25-49	50-99	100-499	500-999
6 thru 35	A	$ 0.81	$0.61	$0.51	$0.41	$0.36
	B	.89	.67	.56	.45	.40
	C	1.81	1.36	1.14	.91	.79
	D	3.57	2.68	2.24	1.79	1.57
50	A†	1.05	.79	.65	.53	.47
	A‡	.97	.73	.61	.49	.43
	B	1.05	.79	.66	.53	.47
	C§	2.57	1.93	1.61	1.29	1.13
	C#	2.73	2.05	1.71	1.37	1.20
	D	5.33	4.00	3.34	2.67	2.34
75	A	1.89	1.42	1.19	.95	.83
	B	1.97	1.48	1.24	.99	.87
	C	2.97	2.23	1.86	1.49	1.31
	D	11.65	8.74	7.29	5.83	5.10
100	A	4.08	3.25	2.76	2.34	2.14
	B	4.30	3.42	2.90	2.48	2.26

ORDERING AND PRICING INFORMATION

1% FAILURE RATE (M Suffix)

WV DC	*	Range, µF	±10% Tolerance, Net Ea., Lots 1-24	25-49	50-99	100-499	500-999	±20% Tolerance, Net Ea., Lots 1-24	25-49	50-99	100-499	500-999
6 thru 35	A	1.2–6.8**	$ 0.89	$0.69	$0.59	$0.49	$0.44	$ 0.86	$0.66	$0.56	$0.46	$0.41
	B	5.6–56**	.97	.75	.64	.53	.48	.94	.72	.61	.50	.45
	C	22–180**	1.89	1.44	1.22	.99	.87	1.86	1.41	1.19	.96	.84
	D	27–330**	3.65	2.76	2.31	1.87	1.65	3.62	2.73	2.29	1.84	1.62
50	A	.0047–.027	1.13	.87	.73	.61	.55	1.10	.84	.70	.58	.52
	A	.033–1	1.05	.81	.69	.57	.51	1.02	.78	.66	.54	.48
	B	1.2–4.7	1.13	.87	.74	.61	.55	1.10	.84	.71	.58	.52
	C	5.6–10	2.65	2.01	1.69	1.37	1.21	2.62	1.98	1.66	1.34	1.18
	C	12–18	2.81	2.13	1.79	1.45	1.28	2.78	2.10	1.76	1.42	1.25
	D	22	5.41	4.08	3.42	2.75	2.42	5.38	4.05	3.39	2.72	2.39
75	A	.1–.68	2.19	1.72	1.49	1.25	1.13	2.09	1.62	1.39	1.15	1.03
	B	.82–3.9	2.27	1.78	1.54	1.29	1.17	2.17	1.68	1.44	1.19	1.07
	C	4.7–10	3.37	2.63	2.26	1.89	1.71	3.17	2.43	2.06	1.69	1.51
	D	12, 15	12.05	9.14	7.69	6.23	5.50	11.85	8.94	7.49	6.03	5.30
100	A	.0047–.56	4.31	3.48	2.99	2.57	2.37	4.21	3.38	2.89	2.47	2.27
	B	.68–.27	4.53	3.65	3.13	2.71	2.49	4.43	3.55	3.03	2.61	2.39

0.1% FAILURE RATE (P Suffix)

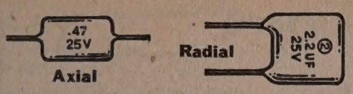
Minimum item charge, $50.00. Orders accepted on a non-cancellable, non-returnable basis only.

6–20	A	1.2–6.8**	$ 1.75	$1.35	$1.15	$0.95	$0.85	$ 1.72	$1.32	$1.12	$0.92	$0.82
6–20	B	8.2–56**	1.91	1.47	1.25	1.03	.93	1.88	1.44	1.22	1.00	.90
6–15	C	56–180**	3.75	2.85	2.41	1.95	1.71	3.72	2.82	2.38	1.92	1.68
20	C	27–47	3.75	2.85	2.41	1.95	1.71	3.72	2.82	2.38	1.92	1.68
6–20	D	56–330	7.27	5.49	4.61	3.71	3.27	7.24	5.46	4.58	3.68	3.24
35	B	5.6, 6.8	1.91	1.47	1.25	1.03	.93	1.88	1.44	1.22	1.00	.90
	C	22	3.75	2.85	2.41	1.95	1.71	3.72	2.82	2.38	1.92	1.68
	D	27–47	7.27	5.49	4.61	3.71	3.27	7.24	5.46	4.58	3.68	3.24
50	A	.0047–.027	2.23	1.71	1.43	1.19	1.07	2.20	1.68	1.40	1.16	1.04
	A	.033–1	2.07	1.55	1.35	1.11	.99	2.04	1.52	1.32	1.08	.96
	B	1.2–4.7	2.23	1.71	1.45	1.19	1.07	2.20	1.68	1.42	1.16	1.04
	C	5.6–10	5.27	3.99	3.35	2.71	2.39	5.24	3.96	3.32	2.68	2.36
	C	12–18	5.59	4.23	3.55	2.87	2.53	5.56	4.20	3.52	2.84	2.50
	D	22	10.79	8.13	6.81	5.47	4.81	10.76	8.10	6.78	5.44	4.78

*Case Size: A, 0.135″ dia. x 0.286″ lg.; B, 0.185″ dia. x 0.474″ lg.; C, 0.289″ dia. x 0.686″ lg.; D, 0.351″ dia. x 0.786″ lg.; †In range .0047–.027 µF. ‡In range .033–1.0 µF. §In range 5.6–10 µF. #In range 12–18 µF. **Varies according to voltage; see tables of stock values, above.

SPRAGUE Ceramic Capacitors

TYPE 1C, 2C, 3C AND 5C MONOLYTHIC® CERAMIC CAPACITORS



Monolythic® ceramic capacitors are available in wide range of body formulations, capacitance values and sizes. These capacitors are made by spraying alternate layers of ceramic dielectric material and metallic electrodes, then firing into a single, all but indestructible homogenous block. Protected against mechanical damage and moisture by tough resin coating. Capacitors with radial leads are listed below. For axial leads, change C4 or C5 in Sprague Part No. to **B1.**

GENERAL APPLICATION FORMULATION Z5U (+10° C TO +85° C)

Tolerance: +80, −20%. For ±20% tolerance, change D8 in Sprague Number to **X0.**

TYPE 1C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
1C023103D8500C4	.01	A	1R
1C023153D8500C4	.015	A	1R
1C023223D8500C4	.022	A	1R
1C023333D8500C4	.033	A	1R
1C023473D8500C4	.047	A	1R
1C023683D8500C4	.068	A	2R
1C023104D8500C4	.1	B	2R

TYPE 2C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
2C023103D8500C4	.01	C	3R
2C023153D8500C4	.015	C	3R
2C023223D8500C4	.022	C	3R
2C023333D8500C4	.033	C	3R
2C023473D8500C4	.047	C	3R
2C023683D8500C4	.068	C	3R
2C023104D8500C4	.1	C	3R

TYPE 2C—50 WVDC (CONT'D)

Sprague Number	μF	Size Code*	Price Code†
2C023154D8500C4	.15	D	4R
2C023224D8500C4	.22	D	5R
2C023334D8500C4	.33	F	5R
2C023474D8500C4	.47	F	5R
2C023684D8500C4	.68	F	6R

TYPE 3C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
3C023103D8500C5	.01	H	3R
3C023153D8500C5	.015	H	3R
3C023223D8500C5	.022	H	3R
3C023333D8500C5	.033	H	3R
3C023473D8500C5	.047	H	3R
3C023683D8500C5	.068	H	3R
3C023104D8500C5	.1	H	3R
3C023154D8500C5	.15	H	4R
3C023224D8500C5	.22	H	5R

TYPE 3C—50 WVDC (CONT'D)

Sprague Number	μF	Size Code*	Price Code†
3C023334D8500C5	.33	I	5R
3C023474D8500C5	.47	I	5R
3C023684D8500C5	.68	M	6R
3C023105D8500C5	1.0	M	7R

TYPE 5C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
5C023104D8500C5	.1	N	3R
5C023154D8500C5	.15	N	4R
5C023224D8500C5	.22	N	5R
5C023334D8500C5	.33	N	5R
5C023474D8500C5	.47	O	5R
5C023684D8500C5	.68	O	6R
5C023105D8500C5	1.0	Q	7R
5C023155D8500C5	1.5	S	8R
5C023225D8500C5	2.2	U	9R
5C023335D8500C5	3.3	U	10R

TEMPERATURE-STABLE FORMULATION X7R

Tolerance: ±10%. For ±20% tolerance, change X9 in Sprague Number to **X0.**

TYPE 1C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
1C067102X9500C4	.001	A	11R
1C067122X9500C4	.0012	A	11R
1C067152X9500C4	.0015	A	11R
1C067222X9500C4	.0022	A	11R
1C067272X9500C4	.0027	A	11R
1C067332X9500C4	.0033	A	11R
1C067392X9500C4	.0039	A	11R
1C067472X9500C4	.0047	A	11R
1C067562X9500C4	.0056	A	11R
1C067682X9500C4	.0068	A	11R
1C067822X9500C4	.0082	A	12R
1C067103X9500C4	.01	A	12R
1C067123X9500C4	.012	A	13R
1C067153X9500C4	.015	A	13R
1C067183X9500C4	.018	A	13R
1C067223X9500C4	.022	A	13R
1C067273X9500C4	.027	A	14R
1C067333X9500C4	.033	A	14R

TYPE 2C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
2C067103X9500C4	.01	C	11R
2C067123X9500C4	.012	C	11R
2C067153X9500C4	.015	C	11R

TYPE 2C—50 WVDC (CONT'D)

Sprague Number	μF	Size Code*	Price Code†
2C067183X9500C4	.018	C	11R
2C067223X9500C4	.022	C	11R
2C067333X9500C4	.033	C	11R
2C067393X9500C4	.039	C	13R
2C067473X9500C4	.047	E	13R
2C067563X9500C4	.056	E	13R
2C067683X9500C4	.068	E	13R
2C067823X9500C4	.082	E	15R
2C067104X9500C4	.1	E	15R
2C067124X9500C4	.12	F	16R
2C067154X9500C4	.15	F	16R

TYPE 3C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
3C067103X9500C5	.01	H	11R
3C067123X9500C5	.012	H	11R
3C067153X9500C5	.015	H	11R
3C067183X9500C5	.018	H	11R
3C067223X9500C5	.022	H	11R
3C067273X9500C5	.027	H	11R
3C067333X9500C5	.033	H	11R
3C067393X9500C5	.039	H	17R
3C067473X9500C5	.047	H	17R
3C067563X9500C5	.056	H	17R

TYPE 3C—50 WVDC (CONT'D)

Sprague Number	μF	Size Code*	Price Code†
3C067683X9500C5	.068	H	17R
3C067823X9500C5	.082	H	15R
3C067104X9500C5	.1	H	14R
3C067124X9500C5	.12	M	16R
3C067154X9500C5	.15	M	16R
3C067184X9500C5	.18	M	16R
3C067224X9500C5	.22	M	16R
3C067274X9500C5	.27	M	18R
3C067334X9500C5	.33	M	18R

TYPE 5C—50 WVDC

Sprague Number	μF	Size Code*	Price Code†
5C067104X9500C5	.1	N	15R
5C067124X9500C5	.12	N	16R
5C067154X9500C5	.15	N	16R
5C067184X9500C5	.18	N	16R
5C067224X9500C5	.22	P	16R
5C067274X9500C5	.27	P	18R
5C067334X9500C5	.33	S	18R
5C067394X9500C5	.39	S	19R
5C067474X9500C5	.47	U	19R
5C067564X9500C5	.56	U	20R
5C067684X9500C5	.68	U	20R

TEMPERATURE COMPENSATING FORMULATION NPO

Tolerance: ±20%. For ±10% tolerance, change X0 in Sprague Number to **X9.**

TYPE 1C—50 WVDC

Sprague Number	pF	Size Code*	Price Code†
1C082100X0500C4	10	A	21R
1C082110X0500C4	11	A	21R
1C082120X0500C4	12	A	21R
1C082130X0500C4	13	A	21R
1C082150X0500C4	15	A	21R
1C082160X0500C4	16	A	21R
1C082180X0500C4	18	A	21R
1C082200X0500C4	20	A	21R
1C082220X0500C4	22	A	21R
1C082240X0500C4	24	A	21R
1C082270X0500C4	27	A	21R
1C082300X0500C4	30	A	21R
1C082330X0500C4	33	A	21R
1C082360X0500C4	36	A	21R
1C082390X0500C4	39	A	21R
1C082430X0500C4	43	A	21R
1C082470X0500C4	47	A	21R
1C082510X0500C4	51	A	21R
1C082560X0500C4	56	A	21R
1C082620X0500C4	62	A	22R
1C082680X0500C4	68	A	22R
1C082750X0500C4	75	A	22R
1C082820X0500C4	82	A	22R
1C082910X0500C4	91	A	22R
1C082101X0500C4	100	A	22R
1C082111X0500C4	110	A	22R
1C082121X0500C4	120	A	22R
1C082131X0500C4	130	A	22R
1C082151X0500C4	150	A	22R
1C082161X0500C4	160	A	23R
1C082181X0500C4	180	A	23R
1C082201X0500C4	200	A	23R
1C082221X0500C4	220	A	23R
1C082241X0500C4	240	A	23R
1C082271X0500C4	270	A	23R
1C082301X0500C4	300	A	23R
1C082331X0500C4	330	A	23R
1C082361X0500C4	360	A	23R
1C082391X0500C4	390	A	23R
1C082431X0500C4	430	A	23R

TYPE 1C—50 WVDC (CONT'D)

Sprague Number	pF	Size Code*	Price Code†
1C082471X0500C4	470	A	23R
1C082511X0500C4	510	A	23R
1C082561X0500C4	560	A	23R

TYPE 2C—50 WVDC

Sprague Number	pF	Size Code*	Price Code†
2C082621X0500C4	620	C	24R
2C082681X0500C4	680	C	24R
2C082751X0500C4	750	C	24R
2C082821X0500C4	820	C	24R
2C082911X0500C4	910	C	24R
2C082102X0500C4	1000	C	24R
2C082112X0500C4	1100	C	25R
2C082122X0500C4	1200	C	25R
2C082132X0500C4	1300	C	25R
2C082152X0500C4	1500	C	25R
2C082162X0500C4	1600	C	25R
2C082182X0500C4	1800	C	25R
2C082202X0500C4	2000	C	25R
2C082222X0500C4	2200	E	25R
2C082242X0500C4	2400	E	26R
2C082272X0500C4	2700	E	26R
2C082302X0500C4	3000	F	26R
2C082332X0500C4	3300	F	26R

TYPE 3C—50 WVDC

Sprague Number	pF	Size Code*	Price Code†
3C082681X0500C5	680	H	24R
3C082751X0500C5	750	H	24R
3C082821X0500C5	820	H	24R
3C082911X0500C5	910	H	24R
3C082102X0500C5	1000	H	24R
3C082112X0500C5	1100	H	25R
3C082122X0500C5	1200	H	25R
3C082132X0500C5	1300	H	25R
3C082152X0500C5	1500	H	25R
3C082162X0500C5	1600	H	25R
3C082182X0500C5	1800	I	25R
3C082202X0500C5	2000	I	25R
3C082222X0500C5	2200	I	25R
3C082242X0500C5	2400	I	26R
3C082272X0500C5	2700	L	26R

TYPE 3C—50 WVDC (CONT'D)

Sprague Number	pF	Size Code*	Price Code†
3C082302X0500C5	3000	L	26R
3C082332X0500C5	3300	L	26R
3C082362X0500C5	3600	L	16R
3C082392X0500C5	3900	L	16R
3C082432X0500C5	4300	L	16R
3C082472X0500C5	4700	L	16R
3C082512X0500C5	5100	L	16R
3C082562X0500C5	5600	M	16R
3C082622X0500C5	6200	M	27R

TYPE 5C—50 WVDC

Sprague Number	pF	Size Code*	Price Code†
5C082681X0500C5	680	N	24R
5C082751X0500C5	750	N	24R
5C082821X0500C5	820	N	24R
5C082911X0500C5	910	N	24R
5C082102X0500C5	1000	N	24R
5C082112X0500C5	1100	N	25R
5C082122X0500C5	1200	N	25R
5C082132X0500C5	1300	N	25R
5C082152X0500C5	1500	N	25R
5C082162X0500C5	1600	N	25R
5C082182X0500C5	1800	N	25R
5C082202X0500C5	2000	N	25R
5C082222X0500C5	2200	N	25R
5C082242X0500C5	2400	N	26R
5C082272X0500C5	2700	N	26R
5C082302X0500C5	3000	O	26R
5C082332X0500C5	3300	O	26R
5C082362X0500C5	3600	P	16R
5C082392X0500C5	3900	P	16R
5C082432X0500C5	4300	P	16R
5C082472X0500C5	4700	P	16R
5C082512X0500C5	5100	P	16R
5C082562X0500C5	5600	R	16R
5C082622X0500C5	6200	R	27R
5C082682X0500C5	6800	R	27R
5C082752X0500C5	7500	R	27R
5C082822X0500C5	8200	T	28R
5C082912X0500C5	9100	T	28R
5C082103X0500C5	10000	T	28R

***†SEE FOLLOWING PAGE FOR CASE SIZES AND PRICING**

SPRAGUE Ceramic Capacitors

TYPE 1C, 2C, 3C AND 5C CERAMIC CAPACITORS (CONT'D)

*CASE SIZES

Size Code	Dimensions, Inches					
	Radial-Lead			Axial-Lead		
	Length	Width	Thick	Length	Width	Thick
A	.200	.200	.125	.200	.200	.156
B	.200	.200	.150	.200	.200	.156
C	.300	.200	.125	.300	.200	.156
D	.300	.200	.150	.300	.200	.156
E	.300	.300	.125	....	....	....
F	.300	.300	.150	.300	.300	.156
H	.390	.200	.125	.390	.200	.156
I	.390	.200	.150	.390	.200	.156
L	.400	.400	.125	.390	.400	.156

Size Code	Dimensions, Inches					
	Radial-Lead			Axial-Lead		
	Length	Width	Thick	Length	Width	Thick
M	.400	.400	.150	.390	.400	.156
N	.500	.200	.125	.500	.200	.156
O	.500	.200	.150	.500	.200	.156
P	.500	.296	.125	.500	.296	.156
Q	.500	.296	.150	.500	.296	.156
R	.500	.400	.125	.500	.400	.156
S	.500	.400	.150 ✓	.500	.400	.156
T	.500	.500	.125	.500	.500	.156
U	.500	.500	.150	.500	.200	.156

†TYPE 1C, 2C, 3C AND 5C PRICING

Prices shown below are for radial leads. For axial leads, add **$0.02** to the price shown. All types have a **$50.00** Minimum Item Charge except those with price codes 1R thru 10R.

Code	‡	Net Each, Lots of			
		1-49	50-99	100-499	500-999
1R	L	$0.756	$0.567	$0.378	$0.284
1R	M	.869	.652	.435	.327
2R	L	.808	.606	.404	.303
2R	M	.929	.697	.465	.348
3R	L	.676	.507	.338	.254
3R	M	.777	.583	.389	.292
4R	L	.836	.627	.418	.314
4R	M	.961	.721	.481	.361
5R	L	1.008	.756	.504	.378
5R	M	1.159	.869	.58	.435
6R	L	1.42	1.065	.71	.537
6R	M	1.633	1.225	.817	.618
7R	L	1.72	1.29	.86	.645
7R	M	1.978	1.484	.989	.742
8R	L	1.832	1.374	.916	.687
8R	M	2.107	1.58	1.053	.79
9R	L	3.584	2.688	1.792	1.344
9R	M	4.122	3.091	2.061	1.546
10R	L	4.232	3.174	2.116	1.587

‡L= +80, −20; M= ±20.

Code	Tol. %	Net Each, Lots of			
		1-49	50-99	100-499	500-999
10R	±20	$4.867	$3.65	$2.433	$1.825
11R	±20	.72	.54	.36	.27
11R	±10	.828	.621	.414	.311
12R	±20	.80	.60	.40	.30
12R	±10	.92	.69	.46	.345
13R	±20	.84	.63	.42	.32
13R	±10	.966	.725	.483	.368
14R	±20	1.00	.75	.50	.38
14R	±10	1.15	.863	.575	.437
15R	±20	.92	.69	.46	.35
15R	±10	1.058	.794	.529	.403
16R	±20	1.56	1.17	.78	.59
16R	±10	1.794	1.346	.897	.679
17R	±20	.76	.57	.38	.29
17R	±10	.874	.656	.437	.334
18R	±20	2.28	1.71	1.14	.86
18R	±10	2.622	1.967	1.311	.989
19R	±20	3.80	2.85	1.90	1.43
19R	±10	4.37	3.278	2.185	1.645

Code	Tol. %	Net Each, Lots of			
		1-49	50-99	100-499	500-999
20R	±20	$5.08	$3.81	$2.54	$1.91
20R	±10	5.842	4.382	2.921	2.197
21R	±20	.752	.564	.376	.282
21R	±10	.752	.564	.376	.282
22R	±20	.78	.585	.39	.293
22R	±10	.78	.585	.39	.293
23R	±20	.832	.624	.416	.312
23R	±10	.832	.624	.416	.312
24R	±20	.884	.663	.442	.332
24R	±10	.884	.663	.442	.332
25R	±20	.988	.741	.494	.371
25R	±10	.988	.741	.494	.371
26R	±20	1.196	.897	.598	.449
26R	±10	1.196	.897	.598	.449
27R	±20	2.184	1.638	1.092	.819
27R	±10	2.184	1.638	1.092	.819
28R	±20	3.796	2.85	1.898	1.423
28R	±10	3.796	2.85	1.898	1.423

TYPE 7C MONOLYTHIC® CERAMIC CAPACITORS

Radial lead style designed for printed wiring board mounting. Phenolic terminal base with standoff feet avoids any resin run down on leads, provides uniform lead spacing; degreasing fluid flows freely between capacitors and board. Made by spraying alternate layers ceramic dielectric material and metallic electrodes, firing into solid homogenous block, then coating with a tough phenolic resin. All capacitors listed rated at 50 WVDC. Available with radial leads only. **Tolerances Available:** ±20% (listed) or ±10%, except Formulation Z5U available ±20% or +80, −20%. See ordering instructions under ±10% pricing.

TEMPERATURE-COMPENSATING FORMULATION NPO

Sprague Number	Cap., pF	Size Code*	Price Code†
7C082510X0500D	51	D	40R
7C082560X0500D	56	D	40R
7C082620X0500D	62	D	39R
7C082680X0500D	68	D	39R
7C082750X0500D	75	D	39R
7C082820X0500D	82	D	39R
7C082910X0500D	91	D	39R
7C082101X0500D	100	D	39R
7C082111X0500D	110	D	39R
7C082121X0500D	120	D	39R
7C082131X0500D	130	D	39R
7C082151X0500D	150	D	39R
7C082161X0500D	160	D	40R
7C082181X0500D	180	D	40R
7C082201X0500D	200	D	40R
7C082221X0500D	220	D	40R
7C082241X0500D	240	D	40R
7C082271X0500D	270	D	40R
7C082301X0500D	300	D	40R
7C082331X0500D	330	D	40R
7C082361X0500D	360	D	40R
7C082391X0500D	390	D	40R
7C082431X0500D	430	D	40R
7C082471X0500D	470	D	40R
7C082511X0500D	510	D	40R

TEMPERATURE-COMPENSATING FORMULATION X7R

Sprague Number	Cap., pF	Size Code*	Price Code†
7C067122X0500D	1200	D	36R
7C067152X0500D	1500	D	36R
7C067182X0500D	1800	D	36R
7C067222X0500D	2200	D	36R
7C067272X0500D	2700	D	36R
7C067332X0500D	3300	D	36R

TEMPERATURE-COMPENSATING FORMULATION X7R (CONT'D)

Sprague Number	Cap., pF	Size Code*	Price Code†
7C067392X0500D	3900	D	36R
7C067472X0500D	4700	D	36R
7C067562X0500D	5600	D	36R
7C067682X0500D	6800	D	36R
7C067822X0500D	8200	D	37R

GENERAL APPLICATION FORMULATION Z5U

Sprague Number	Cap., µF	Size Code*	Price Code†
7C023103X0500D	.01	D	29R
7C023153X0500D	.015	D	29R
7C023223X0500D	.022	D	29R
7C023333X0500D	.033	D	29R
7C023473X0500D	.047	D	29R
7C023683X0500D	.068	D	29R
7C023104X0500D	.1	D	29R
7C023154X0500D	.15	D	30R
7C023224X0500D	.22	D	31R
7C023334X0500E	.33	E	31R
7C023474X0500E	.47	E	31R
7C023684X0500E	.68	E	32R
7C023105X0500E	1.0	E	33R
7C023155X0500E	1.5	E	34R
7C023225X0500F	2.2	F	35R

*CASE SIZES

Code	Dimensions, Inches		
	Length	Width	Thick
D	.390	.275	.160
E	.535	.550	.160
F	.535	.550	.260

†PRICING

All Type 7C have a **$50.00** Minimum Item Charge, except Formulation Z5U (C023) units which have no minimum charge.

±20% TOLERANCE

Code	Net Each, Lots of			
	1-49	50-99	100-499	500-999
29R	$0.691	$0.522	$0.353	$0.269
30R	.851	.642	.433	.329
31R	1.018	.766	.514	.388
32R	1.43	1.075	.72	.547
33R	1.73	1.30	.87	.655
34R	1.842	1.384	.926	.697
35R	3.594	2.698	1.802	1.354
36R	.735	.555	.375	.285
37R	.735	.555	.375	.285
39R	.795	.60	.405	.308
40R	.847	.639	.431	.327

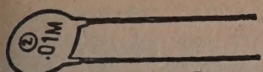
±10% TOLERANCE

For types NPO and X7R, change X0 in Sprague No. to **X9** for ±10% tolerance. For type Z5U change X0 in Sprague No. to **D8** for +80, −20% tolerance; following prices apply. Type Z5U are not available in ±10% tolerance.

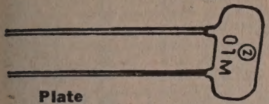
Code	Net Each, Lots of			
	1-49	50-99	100-499	500-999
29R	$0.795	$0.60	$0.406	$0.309
30R	.979	.738	.498	.378
31R	1.171	.881	.591	.446
32R	1.645	1.236	.828	.629
33R	1.99	1.495	1.001	.753
34R	2.118	1.592	1.065	.802
35R	4.133	3.103	2.072	1.557
36R	.845	.638	.431	.328
37R	.845	.638	.431	.328
39R	.795	.60	.405	.308
40R	.847	.639	.431	.327

SPRAGUE Ceramic Capacitors

CERA-MITE® CERAMIC CAPACITORS



Disc



Plate

Tiny, tough and dependable. Fine replacement for molded micas and tubular ceramics. Silvered flat-plate design has low self-inductance for high by-pass efficiency in TV circuits. Heavy moisture-proof insulating coat. For 85° C use. Std. Tol.: ±20% except as indicated.

GENERAL APPLICATION

Extra small for use anywhere. Ideal where TC is not important.

500 WVDC (discs)

Sprague No.	pF	Net Ea.
5GAS-S10	10,000	$0.15
5GAS-S20	20,000	.15
5GA-S25	25,000	.15
5GA-S40	40,000	.30
5GA-S50	50,000	.39
5GA-P10	100,000	.60

1000 WVDC (discs)

5GA-V50	5	$0.15
5GA-V68	6.8	.15
5GA-V75	7.5	.15
5GA-V82	8.2	.15
5GA-Q10	10	.15
5GA-Q12	12	.15
5GA-Q15	15	.15
5GA-Q18	18	.15
5GA-Q20	20	.15
5GA-Q22	22	.15
5GA-Q25	25	.15
5GA-Q27	27	.15
5GA-Q30	30	.15
5GA-Q33	33	.15
5GA-Q39	39	.15
5GA-Q47	47	.15
5GA-Q50	50	.15
5GA-Q56	56	.15
5GA-Q68	68	.15
5GA-Q75	75	.15
5GA-Q82	82	.15
5GA-T10	100	.15
5GA-T12	120	.15
5GA-T15	150	.15
5GA-T18	180	.15
5GA-T20	200	.15
5GA-T22	220	.15
5GA-T25	250	.15
5GA-T27	270	.15
5GA-T30	300	.15
5GA-T33	330	.15
5GA-T36	360	.15
5GA-T39	390	.15
5GA-T47	470	.15
5GA-T50	500	.15
5GA-T56	560	.15
5GA-T68	680	.15
5GA-T75	750	.15
5GA-T80	800	.15
5GA-T82	820	.15
5GA-D10	1000	.15
5GA-D12	1200	.15
5GA-D15	1500	.15
5GA-D18	1800	.15
5GA-D20	2000	.15
5GA-D22	2200	.15
5GA-D25	2500	.15
5GA-D27	2700	.15
5GA-D30	3000	.15
5GA-D33	3300	.15
5GA-D39	3900	.15
5GA-D40	4000	.15
5GA-D47	4700	.15
5GA-D50	5000	.15
5GA-D68	6800	.15
5GA-D82	8200	.15
5GA-S10	10,000	.15
5GA-S15	15,000	.15
5GA-S20	20,000	.15

3000 WVDC (discs)

Std. Tol.: 1.5 pF, ±.25 pF; 3.3–5 pF, ±.5 pF; 6–68 pF, ±10%.

Sprague No.	pF	Net Ea.
30GA-V15	1.5	$0.15
30GA-V33	3.3	.15
30GA-V47	4.7	.15
30GA-V50	5	.15
30GA-V60	6	.15
30GA-V68	6.8	.15
30GA-V75	7.5	.15
30GA-V82	8.2	.15
30GA-Q10	10	$0.15
30GA-Q12	12	.15
30GA-Q15	15	.15
30GA-Q18	18	.15
30GA-Q20	20	.15
30GA-Q22	22	.15
30GA-Q25	25	.15
30GA-Q27	27	.15
30GA-Q30	30	.15
30GA-Q33	33	.15
30GA-Q39	39	.15
30GA-Q47	47	.15
30GA-Q50	50	.15
30GA-Q56	56	.15
30GA-Q60	60	.15
30GA-Q62	62	.15
30GA-Q68	68	.15
30GA-Q75	75	.15
30GA-Q82	82	.15
30GA-T10	100	.15
30GA-T12	120	.15
30GA-T15	150	.15
30GA-T18	180	.15
30GA-T20	200	.15
30GA-T22	220	.15
30GA-T25	250	.15
30GA-T27	270	.15
30GA-T30	300	.18
30GA-T33	330	.18
30GA-T39	390	.18
30GA-T40	400	.18
30GA-T47	470	.18
30GA-T50	500	.21
30GA-T56	560	.21
30GA-T68	680	.21
30GA-T75	750	.21
30GA-T82	820	.21
30GA-D10	1000	.21
30GA-D12	1200	.21
30GA-D15	1500	.21
30GA-D20	2000	.21
30GA-D22	2200	.21
30GA-D25	2500	.21
30GA-D27	2700	.21
30GA-D30	3000	.21
30GA-D33	3300	.21
30GA-D39	3900	.24
30GA-D40	4000	.24
30GA-D47	4700	.24
30GA-D50	5000	.24
30GA-D60	6000	.33
30GA-D68	6800	.33
30GA-D80	8000	.33
30GA-D82	8200	.39
30GA-S10	10,000	.39

6000 WVDC (discs)

60GA-V15	1.5	$0.30
60GA-V47	4.7	.30
60GA-V68	6.8	.30
60GA-V82	8.2	.30
60GA-Q10	10	.30
60GA-Q12	12	.30
60GA-Q15	15	.30
60GA-Q18	18	.30
60GA-Q20	20	.30
60GA-Q22	22	.30
60GA-Q25	25	.30
60GA-Q27	27	.30
60GA-Q30	30	.30
60GA-Q33	33	.30
60GA-Q39	39	.30
60GA-Q47	47	.30
60GA-Q50	50	.30
60GA-Q56	56	.30
60GA-Q60	60	.30
60GA-Q68	68	.30
60GA-Q75	75	.30
60GA-Q82	82	.30
60GA-T10	100	.30
60GA-T12	120	.30
60GA-T15	150	.30
60GA-T18	180	.30
60GA-T20	200	.30
60GA-T22	220	.30
60GA-T25	250	.30
60GA-T27	270	.30
60GA-T30	300	.33
60GA-T33	330	.33
60GA-T39	390	.36
60GA-T40	400	.36
60GA-T47	470	.36
60GA-T50	500	.42
60GA-T56	560	.42
60GA-T68	680	.42
60GA-T75	750	.42
60GA-T82	820	.42
60GA-D10	1000	.54
60GA-D12	1200	.54
60GA-D15	1500	.54
60GA-D22	2200	.75
60GA-D25	2500	.87
60GA-D27	2700	.87
60GA-D30	3000	.87
60GA-D33	3300	.87
60GA-D39	3900	.93
60GA-D47	4700	.93

7500 WVDC (discs)

Std. Tol.: 4.7 pF, ±.5 pF; 8.2–18 pF, ±10%.

Sprague No.	pF	Net Ea.
75GA-V47	4.7	$0.42
75GA-V82	8.2	.42
75GA-Q10	10	.42
75GA-Q12	12	.42
75GA-Q15	15	.42
75GA-Q18	18	.42
75GA-Q20	20	.42
75GA-Q22	22	.42
75GA-Q30	30	.42
75GA-Q33	33	.42
75GA-Q47	47	.42
75GA-Q56	56	.42
75GA-T10	100	.42
75GA-T22	220	.48
75GA-T47	470	.48
75GA-T50	500	.48
75GA-T56	560	.48
75GA-T68	680	.48
75GA-T75	750	.57
75GA-T82	820	.57
75GA-D10	1000	.57
75GA-D12	1200	.57
75GA-D15	1500	.81
75GA-D18	1800	.81
75GA-D20	2000	.93
75GA-D22	2200	.93
75GA-D25	2500	.93

TEMPERATURE-STABLE

Used where minimum capacitance-change with temperature is an important consideration. Rated 1000 WVDC. Std. Tol., ±10%.

Sprague No.	pF	Net Ea.
10TS-V33	3.3	$0.15
10TS-V50	5	.15
10TS-V68	6.8	.15
10TS-V75	7.5	.15
10TS-V82	8.2	.15
10TS-Q10	10	.15
10TS-Q12	12	.15
10TS-Q15	15	.15
10TS-Q18	18	.15
10TS-Q20	20	.15
10TS-Q22	22	.15
10TS-Q25	25	.15
10TS-Q27	27	.15
10TS-Q30	30	.15
10TS-Q33	33	.15
10TS-Q39	39	.15
10TS-Q47	47	.15
10TS-Q50	50	.15
10TS-Q56	56	.15
10TS-Q68	68	.15
10TS-Q75	75	.15
10TS-Q82	82	.15
10TS-Q91	91	.15
10TS-T10	100	.15
10TS-T12	120	.15
10TS-T15	150	.15
10TS-T18	180	.15
10TS-T20	200	.15
10TS-T22	220	.15
10TS-T25	250	.15
10TS-T27	270	.15
10TS-T30	300	.15
10TS-T33	330	.15
10TS-T39	390	.15
10TS-T47	470	.15
10TS-T50	500	.15
10TS-T56	560	.15
10TS-T68	680	.15
10TS-T75	750	.15
10TS-T82	820	.15
10TS-D10	1000	.15
10TS-D12	1200	.15
10TS-D15	1500	.15
10TS-D18	1800	.15
10TS-D20	2000	.15
10TS-D22	2200	.15
10TS-D25	2500	.15
10TS-D27	2700	.15
10TS-D30	3000	.15
10TS-D33	3300	.15
10TS-D39	3900	.15
10TS-D40	4000	.15
10TS-D47	4700	.18
10TS-D50	5000	.18
10TS-D56	5600	.18
10TS-D68	6800	.27
10TS-D75	7500	.36
10TS-D82	8200	.36
10TS-S10	10000	.36

SEMI-STABLE

WVDC: 250, 2SS; 1000, 10SS. Std. Tol.: ±10%.

Sprague No.	pF	Net Ea.
2SS-T75	750	$0.15
2SS-T82	820	.15
2SS-D10	1000	.15
2SS-D12	1200	.15
2SS-D15	1500	.15
2SS-D18	1800	.15
2SS-D20	2000	.15
2SS-D22	2200	.15
2SS-D27	2700	.15
2SS-D33	3300	.15
2SS-D39	3900	.15
2SS-D47	4700	.15
2SS-D50	5000	.15
2SS-D56	5600	.15
2SS-D68	6800	.15
2SS-D82	8200	.18
2SS-S10	10,000	.21
2SS-S12	12,000	.33
2SS-S15	15,000	.39
2SS-S18	18,000	.45
2SS-S20	20,000	.45
10SS-T47	470	.15
10SS-T50	500	.15
10SS-T56	560	.15
10SS-T68	680	.15
10SS-T75	750	.15
10SS-T82	820	.15
10SS-D10	1000	.15
10SS-D12	1200	.15
10SS-D15	1500	.15
10SS-D18	1800	.15
10SS-D20	2000	.15
10SS-D22	2200	.15
10SS-D27	2700	.15
10SS-D33	3300	.15
10SS-D39	3900	.15
10SS-D47	4700	.15
10SS-D50	5000	.15
10SS-D56	5600	.15
10SS-D68	6800	.15
10SS-D82	8200	.18
10SS-S10	10,000	.18
10SS-S12	12,000	.27
10SS-S15	15,000	.36
10SS-S18	18,000	.36
10SS-S20	20,000	.36
10SS-S22	22,000	.36

HIGH-K TYPES

For bypass and coupling uses where added capacitance is not important. WVDC: 1000 except 5HKS-S10–TH-P10 500. Std. Tol.: GMV except 5HKS-S10–5HK-P10, +80 −20%; TH types ±20%.

Sprague No.	µF	Net Ea.
5HK-D10	.001	15c
5HK-D15	.0015	15c
5HK-D20	.002	15c
5HK-D22	.0022	15c
5HK-D33	.0033	15c
5HK-D39	.0039	15c
5HK-D47	.0047	15c
5HK-D50	.005	15c
5HK-D68	.0068	15c
5HK-D82	.0082	15c
5HK-S10	.01	15c
5HKS-S10	.01	15c
5HK-S15	.015	15c
5HK-S20	.02	15c
5HK-S25	.025	15c
5HK-S40	.04	27c
5HK-S50	.05	27c
5HK-P10	.1	60c
5HK-2D10	2 x .001	18c
5HK-2D15	2 x .0015	18c
5HK-2D20	2 x .002	18c
5HK-2D22	2 x .0022	18c
5HK-2D47	2 x .0047	21c
5HK-2S10	2 x .01	24c
5HK-2S20	2 x .02	30c

AC DISC CERAMICS

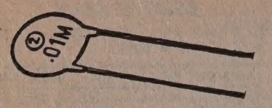
For AC line bypass uses. Rated 125 VAC or 1400 VDC.

125L-D10	.001	15c
125L-D15	.0015	15c
125L-D20	.002	15c
125L-D47	.0047	18c
125L-D50	.005	18c
125L-S10	.01	30c
125L-S20	.02	30c
125L-2D50	2 x .005	30c
125L-2S10	2 x .01	30c

(Cont'd on Following Page)

SPRAGUE Ceramic Capacitors

CERA-MITE® CERAMIC CAPACITORS (CONT'D)



TEMPERATURE-COMPENSATING

Eliminate oscillator drift in TV, FM, VHF and AM receivers. Rated 1000 WVDC. Std. Tol.: ±5%, 12 pF up; all others ±0.5 pF.

N030

Neg. temp. coef., 30 ppm/° C.

Sprague No.	pF	Net Ea.
10TCM-V10	1.0	15c
10TCM-V12	1.2	15c
10TCM-V15	1.5	15c
10TCM-V18	1.8	15c
10TCM-V22	2.2	15c
10TCM-V27	2.7	15c
10TCM-V30	3.0	15c
10TCM-V33	3.3	15c
10TCM-V39	3.9	15c
10TCM-V47	4.7	15c
10TCM-V50	5.0	15c
10TCM-V56	5.6	15c
10TCM-V68	6.8	15c
10TCM-V82	8.2	15c
10TCM-Q10	10	15c
10TCM-Q12	12	15c
10TCM-Q15	15	15c
10TCM-Q18	18	15c
10TCM-Q20	20	15c
10TCM-Q22	22	15c
10TCM-Q25	25	15c
10TCM-Q27	27	15c
10TCM-Q30	30	15c
10TCM-Q33	33	15c
10TCM-Q39	39	15c
10TCM-Q47	47	15c
10TCM-Q50	50	15c
10TCM-Q56	56	15c
10TCM-Q68	68	15c
10TCM-Q75	75	15c
10TCM-Q82	82	15c
10TCM-T10	100	15c
10TCM-T12	120	15c
10TCM-T15	150	15c
10TCM-T18	180	27c
10TCM-T20	200	27c
10TCM-T22	220	27c
10TCM-T27	270	30c
10TCM-T30	300	33c
10TCM-T33	330	45c
10TCM-T39	390	45c

N080

Neg. temp. coef., 80 ppm/° C.

Sprague No.	pF	Net Ea.
10TCN-V22	2.2	15c
10TCN-V27	2.7	15c
10TCN-V30	3.0	15c
10TCN-V33	3.3	15c
10TCN-V39	3.9	15c
10TCN-V47	4.7	15c
10TCN-V50	5.0	15c
10TCN-V56	5.6	15c
10TCN-V68	6.8	15c
10TCN-V82	8.2	15c
10TCN-Q10	10	15c
10TCN-Q12	12	15c
10TCN-Q15	15	15c
10TCN-Q18	18	15c
10TCN-Q20	20	15c
10TCN-Q22	22	15c
10TCN-Q25	25	15c
10TCN-Q27	27	15c
10TCN-Q30	30	15c
10TCN-Q33	33	15c
10TCN-Q39	39	15c
10TCN-Q47	47	15c
10TCN-Q50	50	15c
10TCN-Q56	56	15c
10TCN-Q68	68	15c
10TCN-Q75	75	15c
10TCN-Q82	82	15c
10TCN-T10	100	15c
10TCN-T12	120	15c
10TCN-T15	150	15c
10TCN-T18	180	27c
10TCN-T20	200	27c
10TCN-T22	220	27c
10TCN-T27	270	30c
10TCN-T30	300	30c
10TCN-T33	330	33c
10TCN-T39	390	45c
10TCN-T47	470	45c

N150

Neg. temp. coef., 150 ppm/° C.

Sprague No.	pF	Net Ea.
10TCP-V22	2.2	15c
10TCP-V27	2.7	15c
10TCP-V30	3.0	15c
10TCP-V33	3.3	15c
10TCP-V39	3.9	15c
10TCP-V47	4.7	15c
10TCP-V50	5.0	15c
10TCP-V56	5.6	15c
10TCP-V68	6.8	15c
10TCP-V82	8.2	15c
10TCP-Q10	10	15c
10TCP-Q12	12	15c
10TCP-Q15	15	15c
10TCP-Q18	18	15c
10TCP-Q20	20	15c
10TCP-Q22	22	15c
10TCP-Q25	25	15c
10TCP-Q27	27	15c
10TCP-Q30	30	15c
10TCP-Q33	33	15c
10TCP-Q39	39	15c
10TCP-Q47	47	15c
10TCP-Q50	50	15c
10TCP-Q56	56	15c
10TCP-Q68	68	15c
10TCP-Q75	75	15c
10TCP-Q82	82	15c
10TCP-T10	100	15c
10TCP-T12	120	15c
10TCP-T15	150	15c
10TCP-T18	180	15c
10TCP-T20	200	21c
10TCP-T22	220	21c
10TCP-T27	270	30c
10TCP-T30	300	30c
10TCP-T33	330	33c
10TCP-T39	390	45c
10TCP-T47	470	45c

N220

Neg. temp. coef., 220 ppm/° C.

Sprague No.	pF	Net Ea.
10TCR-V30	3.0	15c
10TCR-V33	3.3	15c
10TCR-V39	3.9	15c
10TCR-V47	4.7	15c
10TCR-V50	5.0	15c
10TCR-V56	5.6	15c
10TCR-V68	6.8	15c
10TCR-V82	8.2	15c
10TCR-Q10	10	15c
10TCR-Q12	12	15c
10TCR-Q15	15	15c
10TCR-Q18	18	15c
10TCR-Q20	20	15c
10TCR-Q22	22	15c
10TCR-Q25	25	15c
10TCR-Q27	27	15c
10TCR-Q30	30	15c
10TCR-Q33	33	15c
10TCR-Q39	39	15c
10TCR-Q47	47	15c
10TCR-Q50	50	15c
10TCR-Q56	56	15c
10TCR-Q68	68	15c
10TCR-Q75	75	15c
10TCR-Q82	82	15c
10TCR-T10	100	15c
10TCR-T12	120	15c
10TCR-T15	150	15c
10TCR-T18	180	15c
10TCR-T20	200	15c
10TCR-T22	220	21c
10TCR-T27	270	21c
10TCR-T30	300	21c
10TCR-T33	330	30c
10TCR-T39	390	33c
10TCR-T47	470	45c
10TCR-T56	560	45c

N330

Neg. temp. coef., 330 ppm/° C.

Sprague No.	pF	Net Ea.
10TCS-V30	3.0	15c
10TCS-V33	3.3	15c
10TCS-V39	3.9	15c
10TCS-V47	4.7	15c
10TCS-V50	5.0	15c
10TCS-V56	5.6	15c
10TCS-V68	6.8	15c
10TCS-V82	8.2	15c
10TCS-Q10	10	15c
10TCS-Q12	12	15c
10TCS-Q15	15	15c
10TCS-Q18	18	15c
10TCS-Q20	20	15c
10TCS-Q22	22	15c
10TCS-Q25	25	15c
10TCS-Q27	27	15c
10TCS-Q30	30	15c

N330 (Cont'd)

Sprague No.	pF	Net Ea.
10TCS-Q33	33	15c
10TCS-Q39	39	15c
10TCS-Q47	47	15c
10TCS-Q50	50	15c
10TCS-Q56	56	15c
10TCS-Q68	68	15c
10TCS-Q75	75	15c
10TCS-Q82	82	15c
10TCS-T10	100	15c
10TCS-T12	120	15c
10TCS-T15	150	15c
10TCS-T18	180	15c
10TCS-T20	200	15c
10TCS-T22	220	21c
10TCS-T27	270	21c
10TCS-T30	300	21c
10TCS-T33	330	30c
10TCS-T39	390	33c
10TCS-T47	470	45c
10TCS-T56	560	45c

N470

Neg. temp. coef., 470 ppm/° C.

10TCT-V30	3.0	15c
10TCT-V33	3.3	15c
10TCT-V39	3.9	15c
10TCT-V47	4.7	15c
10TCT-V50	5.0	15c
10TCT-V56	5.6	15c
10TCT-V68	6.8	15c
10TCT-V82	8.2	15c
10TCT-Q10	10	15c
10TCT-Q12	12	15c
10TCT-Q15	15	15c
10TCT-Q18	18	15c
10TCT-Q20	20	15c
10TCT-Q22	22	15c
10TCT-Q25	25	15c
10TCT-Q27	27	15c
10TCT-Q30	30	15c
10TCT-Q33	33	15c
10TCT-Q39	39	15c
10TCT-Q47	47	15c
10TCT-Q50	50	15c
10TCT-Q56	56	15c
10TCT-Q68	68	15c
10TCT-Q75	75	15c
10TCT-Q82	82	15c
10TCT-T10	100	15c
10TCT-T12	120	15c
10TCT-T15	150	15c
10TCT-T18	180	15c
10TCT-T20	200	15c
10TCT-T22	220	15c
10TCT-T27	270	15c
10TCT-T30	300	21c
10TCT-T33	330	21c
10TCT-T39	390	21c
10TCT-T47	470	33c
10TCT-T56	560	45c
10TCT-T68	680	45c
10TCT-T75	750	45c

N750

Neg. temp. coef., 750 ppm/° C.

10TCU-V47	4.7	15c
10TCU-V50	5.0	15c
10TCU-V56	5.6	15c
10TCU-V68	6.8	15c
10TCU-V82	8.2	15c
10TCU-Q10	10	15c
10TCU-Q12	12	15c
10TCU-Q15	15	15c
10TCU-Q18	18	15c
10TCU-Q20	20	15c
10TCU-Q22	22	15c
10TCU-Q25	25	15c
10TCU-Q27	27	15c
10TCU-Q30	30	15c
10TCU-Q33	33	15c
10TCU-Q39	39	15c
10TCU-Q47	47	15c
10TCU-Q50	50	15c
10TCU-Q56	56	15c
10TCU-Q68	68	15c
10TCU-Q75	75	15c
10TCU-Q82	82	15c
10TCU-T10	100	15c
10TCU-T12	120	15c
10TCU-T15	150	15c
10TCU-T18	180	15c
10TCU-T20	200	15c
10TCU-T22	220	15c
10TCU-T27	270	15c
10TCU-T30	300	15c
10TCU-T33	330	15c
10TCU-T39	390	21c
10TCU-T47	470	21c
10TCU-T56	560	30c
10TCU-T68	680	33c
10TCU-T75	750	45c
10TCU-T82	820	45c
10TCU-D10	1000	45c

N1500

Neg. temp. coef., 1500 ppm/° C.

Sprague No.	pF	Net Ea.
10TCW-Q10	10	15c
10TCW-Q12	12	15c
10TCW-Q15	15	15c
10TCW-Q18	18	15c
10TCW-Q20	20	15c
10TCW-Q22	22	15c
10TCW-Q25	25	15c
10TCW-Q27	27	15c
10TCW-Q30	30	15c
10TCW-Q33	33	15c
10TCW-Q39	39	15c
10TCW-Q47	47	15c
10TCW-Q50	50	15c
10TCW-Q56	56	15c
10TCW-Q68	68	15c
10TCW-Q75	75	15c
10TCW-Q82	82	15c
10TCW-T10	100	15c
10TCW-T12	120	15c
10TCW-T15	150	15c
10TCW-T18	180	15c
10TCW-T22	220	15c
10TCW-T27	270	15c
10TCW-T30	300	15c
10TCW-T33	330	15c
10TCW-T39	390	15c
10TCW-T47	470	21c
10TCW-T56	560	21c
10TCW-T68	680	39c
10TCW-T75	750	39c
10TCW-T82	820	39c
10TCW-D10	1000	45c
10TCW-D12	1200	45c

N2200

Neg. temp. coef., 2200 ppm/° C.

Sprague No.	pF	Net Ea.
10TCY-Q10	10	15c
10TCY-Q12	12	15c
10TCY-Q15	15	15c
10TCY-Q18	18	15c
10TCY-Q20	20	15c
10TCY-Q22	22	15c
10TCY-Q25	25	15c
10TCY-Q27	27	15c
10TCY-Q30	30	15c
10TCY-Q33	33	15c
10TCY-Q39	39	15c
10TCY-Q47	47	15c
10TCY-Q50	50	15c
10TCY-Q56	56	15c
10TCY-Q68	68	15c
10TCY-Q75	75	15c
10TCY-Q82	82	15c
10TCY-T10	100	15c
10TCY-T12	120	15c
10TCY-T15	150	15c
10TCY-T18	180	15c
10TCY-T20	200	15c
10TCY-T22	220	15c
10TCY-T27	270	15c
10TCY-T30	300	15c
10TCY-T33	330	15c
10TCY-T39	390	15c
10TCY-T47	470	15c
10TCY-T56	560	15c
10TCY-T68	680	18c
10TCY-T75	750	18c
10TCY-T82	820	21c
10TCY-D10	1000	21c
10TCY-D12	1200	30c
10TCY-D15	1500	39c
10TCY-D18	1800	45c
10TCY-D20	2000	45c
10TCY-D22	2200	45c

See following page for NPO (Discs), Hypercon Ceramic Discs and Miniaturized Ceramic Disc Capacitors.

QUANTITY PRICE INFORMATION AVAILABLE ON REQUEST.

CERAMIC DISC CAPACITORS

CERA-MITE® NPO (DISCS)

Zero temperature-coefficient capacitors used where capacitance change with temperature is undesirable. Superior to silvered-mica types in stability, high "Q" and insulation resistance. Rated 1000 WVDC. Std. Tol.: ±5%, 12 pF up; all others ±0.5 pF.

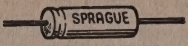
Sprague No.	pF	Net Each
10TCC-V10	1	$0.15
10TCC-V12	1.2	.15
10TCC-V15	1.5	.15
10TCC-V18	1.8	.15
10TCC-V22	2.2	.15
10TCC-V27	2.7	.15
10TCC-V30	3.0	.15
10TCC-V33	3.3	.15
10TCC-V39	3.9	.15
10TCC-V47	4.7	.15
10TCC-V50	5.0	.15
10TCC-V56	5.6	.15
10TCC-V68	6.8	.15
10TCC-V82	8.2	.15
10TCC-Q10	10	.15
10TCC-Q12	12	.15
10TCC-Q15	15	.15
10TCC-Q18	18	.15
10TCC-Q20	20	.15
10TCC-Q22	22	.15
10TCC-Q25	25	.15
10TCC-Q27	27	.15
10TCC-Q30	30	.15
10TCC-Q33	33	.15
10TCC-Q39	39	.15
10TCC-Q47	47	.15
10TCC-Q50	50	.15
10TCC-Q56	56	.15
10TCC-Q68	68	.15
10TCC-Q75	75	.15
10TCC-Q82	82	.15
10TCC-T10	100	.15
10TCC-T12	120	.15
10TCC-T15	150	.15
10TCC-T18	180	.27
10TCC-T20	200	.27
10TCC-T22	220	.30
10TCC-T27	270	.33
10TCC-T30	300	.33
10TCC-T33	330	.45
10TCC-T39	390	.45

HYPERCON® CERAMIC DISCS

Ultra-miniature discs for transistorized circuitry, bypass and coupling. Especially suited for any low voltage use where high capacitance and low power factors are important. Std. Tol.: HY-420–HY470 and HY-510–HY-550, +80 −20%; all others +50 −20%.

Sprague No.	μF	WVDC	Net Each
HY-340	.022	12	$0.15
HY-345	.033	12	.15
HY-350	.047	12	.15
HY-355	.068	12	.15
HY-360	.1	12	.18
HY-365	.15	12	.24
HY-370	.22	12	.27
HY-375	.33	12	.33
HY-380	.47	12	.45
HY-420	.01	16	.15
HY-425	.022	16	.15
HY-430	.033	16	.15
HY-435	.047	16	.15
HY-440	.068	16	.15
HY-450	.1	16	.15
HY-470	.2	16	.27
HY-625	.022	16	.15
HY-630	.033	16	.15
HY-635	.047	16	.15
HY-640	.068	16	.15
HY-650	.1	16	.15
HY-665	.15	16	.24
HY-670	.22	16	.27
HY-675	.33	16	.33
HY-510	.0047	25	.15
HY-520	.01	25	.15
HY-525	.022	25	.15
HY-530	.033	25	.15
HY-535	.047	25	.18
HY-540	.068	25	.18
HY-550	.1	25	.21
HY-720	.015	25	.15
HY-725	.022	25	.15
HY-730	.033	25	.15
HY-735	.047	25	.18
HY-740	.068	25	.21
HY-750	.1	25	.24
HY-765	.15	25	.27
HY-770	.22	25	.39

TYPE TE LITTL-LYTIC® CAPACITORS



Ultra small; excellent, dependable replacement units for transistorized equipment presently on the market. Hermetically sealed in metal case. Low leakage current; long shelf life. Furnished with clear plastic outer insulating sleeves. Rated 85° C.

3 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-499
1050	1	A	$.57	$.388	$.31	$.233	$.194
1051	2	A	.57	.388	.31	.233	.194
1052	3	A	.57	.388	.31	.233	.194
1052.1	4	A	.57	.388	.31	.233	.194
1052.2	5	A	.57	.388	.31	.233	.194
1052.3	6	A	.57	.388	.31	.233	.194
1052.5	8	A	.57	.388	.31	.233	.194
1053	10	A	.57	.388	.31	.233	.194
1053.5	15	A	.57	.388	.31	.233	.194
1054	20	A	.57	.388	.31	.233	.194
1055	25	A	.57	.388	.31	.233	.194
1055.5	30	A	.57	.388	.31	.233	.194
1058	50	B	.57	.388	.31	.233	.194
1058.5	65	B	.57	.388	.31	.233	.194
1059	75	C	.63	.438	.35	.263	.219
1059.5	100	C	.63	.438	.35	.263	.219
1060.1	130	C	.63	.438	.35	.263	.219
1061	150	D	.81	.55	.44	.33	.275
1064	200	D	.81	.55	.44	.33	.275
1065	250	F	.84	.575	.46	.345	.288
1066	300	F	.84	.575	.46	.345	.288
1067	400	G	.87	.60	.48	.36	.30
1068	500	H	.90	.625	.50	.375	.313
1069.1	600	H	.90	.625	.50	.375	.313
1070.1	800	I	.96	.65	.52	.39	.325

6 WVDC

1080	1	A	$.57	$.388	$.31	$.233	$.194
1081	2	A	.57	.388	.31	.233	.194
1082	3	A	.57	.388	.31	.233	.194
1083	4	A	.57	.388	.31	.233	.194
1084	5	A	.57	.388	.31	.233	.194
1085	6	A	.57	.388	.31	.233	.194
1086	8	A	.57	.388	.31	.233	.194
1087	10	A	.57	.388	.31	.233	.194
1089	15	A	.57	.388	.31	.233	.194
1090	20	A	.57	.388	.31	.233	.194
1091	25	B	.57	.388	.31	.233	.194
1093	35	B	.57	.388	.31	.233	.194
1100	50	B	.57	.388	.31	.233	.194
1101.5	75	C	.63	.438	.35	.263	.219
1101.7	90	C	.63	.438	.35	.263	.219
1102	100	D	.81	.55	.44	.33	.275
1102.5	140	D	.81	.55	.44	.33	.275
1103	150	F	.84	.575	.46	.345	.288
1104	200	F	.84	.575	.46	.345	.288
1105	250	G	.87	.60	.48	.36	.30
1106	300	H	.87	.60	.48	.36	.30
1107	400	H	.90	.625	.50	.375	.313
1107.5	500	I	.96	.65	.52	.39	.325
1108.5	600	I	.96	.65	.52	.39	.325

12 WVDC

1120	1	A	$.57	$.388	$.31	$.233	$.194
1121	2	A	.57	.388	.31	.233	.194
1122	3	A	.57	.388	.31	.233	.194
1123	4	A	.57	.388	.31	.233	.194
1127	5	A	.57	.388	.31	.233	.194
1127.1	6	A	.57	.388	.31	.233	.194
1127.3	8	A	.57	.388	.31	.233	.194
1128	10	A	.57	.388	.31	.233	.194
1129	15	A	.57	.388	.31	.233	.194
1130	20	B	.57	.388	.31	.233	.194
1131	25	B	.57	.388	.31	.233	.194
1132.1	30	B	.57	.388	.31	.233	.194
1133	50	C	.63	.438	.35	.263	.219
1133.5	60	C	.63	.438	.35	.263	.219
1134	75	D	.81	.55	.44	.33	.275
1134.5	90	E	.81	.563	.45	.338	.281
1135	100	D	.84	.575	.46	.345	.288
1135.5	140	F	.84	.575	.46	.345	.288
1136	150	G	.87	.60	.48	.36	.30
1136.5	190	G	.87	.60	.48	.36	.30
1137	200	H	.90	.625	.50	.375	.313
1138	250	H	.90	.625	.50	.375	.313
1139	290	H	.90	.625	.50	.375	.313
1140	390	I	.96	.65	.52	.39	.325

†SIZES

Dia. x lg.: A—.260 x .536; B—.260 x .723; C—.322 x .723; D—.322 x .848; E—.385 x .723; F—.385 x .848; G—.385 x .973; H—.385 x 1.286; I—.385 x 1.536.

16 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-499
1148	1	A	$.57	$.388	$.31	$.233	$.194
1149	2	A	.57	.388	.31	.233	.194
1150	3	A	.57	.388	.31	.233	.194
1151	4	A	.57	.388	.31	.233	.194
1152	5	A	.57	.388	.31	.233	.194
1153	6	A	.57	.388	.31	.233	.194
1154	8	A	.57	.388	.31	.233	.194
1155	10	A	.57	.388	.31	.233	.194
1156	15	B	.57	.388	.31	.233	.194
1157	20	B	.57	.388	.31	.233	.194
1157.1	25	B	.57	.388	.31	.233	.194
1158	30	C	.63	.438	.35	.263	.219
1159	35	C	.63	.438	.35	.263	.219
1160	50	C	.63	.438	.35	.263	.219
1161	75	D	.81	.55	.44	.33	.275
1161.5	85	E	.81	.563	.45	.338	.281
1161.7	90	D	.84	.575	.46	.345	.288
1162	100	F	.84	.575	.46	.345	.288
1162.5	130	F	.84	.575	.46	.345	.288
1163	150	G	.87	.60	.48	.36	.30
1163.7	180	G	.87	.60	.48	.36	.30
1164	200	H	.90	.625	.50	.375	.313
1164.5	250	H	.90	.625	.50	.375	.313
1165.5	300	I	.96	.65	.52	.39	.325
1166	350	I	.96	.65	.52	.39	.325

25 WVDC

No. TE-	Cap. μF	†	Net Each, Lots of* 1-24	25 Up	50-99	100-249	250-499
1200	1	A	$.57	$.388	$.31	$.233	$.194
1201	2	A	.57	.388	.31	.233	.194
1201.1	3	A	.57	.388	.31	.233	.194
1201.2	4	A	.57	.388	.31	.233	.194
1202	5	A	.57	.388	.31	.233	.194
1203	6	A	.57	.388	.31	.233	.194
1203.5	8	A	.57	.388	.31	.233	.194
1204	10	B	.57	.388	.31	.233	.194
1205	15	B	.57	.388	.31	.233	.194
1206	20	C	.63	.438	.35	.263	.219
1207	25	C	.63	.438	.35	.263	.219
1207.5	30	C	.63	.438	.35	.263	.219
1208	35	C	.63	.438	.35	.263	.219
1209	50	D	.81	.55	.44	.33	.275
1210	75	F	.84	.575	.46	.345	.288
1211	100	G	.87	.60	.48	.36	.30
1212	150	H	.90	.625	.50	.375	.313
1213	200	I	.96	.65	.52	.39	.325

50 WVDC

1300	1	A	$.57	$.388	$.31	$.233	$.194
1301	2	A	.57	.388	.31	.233	.194
1302	3	A	.57	.388	.31	.233	.194
1302.1	4	A	.57	.388	.31	.233	.194
1303	5	B	.57	.388	.31	.233	.194
1303.1	6	B	.57	.388	.31	.233	.194
1303.3	8	B	.57	.388	.31	.233	.194
1304	10	C	.63	.438	.35	.263	.219
1304.2	15	C	.63	.438	.35	.263	.219
1305	20	D	.81	.55	.44	.33	.275
1305.5	25	D	.81	.55	.44	.33	.275
1306	35	F	.84	.575	.46	.345	.288
1307	50	G	.87	.60	.48	.36	.30
1308	75	H	.90	.625	.50	.375	.313
1309	100	I	.96	.65	.52	.39	.325

100 WVDC

1400	1	A	$.63	$.425	$.34	$.255	$.213
1401	2	B	.63	.438	.35	.263	.219
1402	3	C	.72	.488	.39	.293	.244
1403	4	C	.72	.488	.39	.293	.244
1404	5	D	.81	.55	.44	.33	.275
1405	6	D	.81	.55	.44	.33	.275
1406	8	F	.84	.575	.46	.345	.288
1407	10	F	.84	.575	.46	.345	.288
1408	15	G	.87	.60	.48	.36	.30
1409	20	H	.90	.625	.50	.375	.313
1410	25	I	.96	.65	.52	.39	.325
1411	30	I	.96	.65	.52	.39	.325

150 WVDC

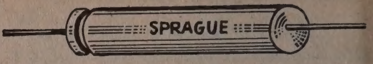
1500	1	A	$.63	$.425	$.34	$.255	$.213
1501	2	B	.63	.438	.35	.263	.219
1502	3	C	.72	.488	.39	.293	.244
1503	4	D	.81	.55	.44	.33	.275
1504	5	D	.81	.55	.44	.33	.275
1505	6	F	.84	.575	.46	.345	.288
1505.5	7	F	.84	.575	.46	.345	.288
1506	8	F	.84	.575	.46	.345	.288
1507	10	G	.87	.60	.48	.36	.30
1508.1	15	H	.90	.625	.50	.375	.313
1509	20	I	.96	.65	.52	.39	.325

*Quantities of 1–24 and 25 Up are supplied in Kleer-Pak; quantities of 50–99, 100–249, 250–499, in bulk. Prices of 500 Up bulk quantities available on request.

SPRAGUE Electrolytic Capacitors

TYPE 39D POWERLYTIC® TUBULAR ELECTROLYTIC CAPACITORS

Type 39D electrolytics supplement the original type 36D Powerlytics by offering lower capacitance values in a small case size. Ideal for applications requiring the greatest possible capacitance for a given compact case, such as transistorized apparatus. All have end seals of an improved molded phenolic, an outer insulation of flexible plastic, and a pressure-sensitive safety vent. Welds at all critical anode and cathode terminals eliminate riveted or pressure connections, assuring freedom from open circuits even during operation in the microvolt or millivolt signal range. Operating temperature, up to +85° C.



Sprague Number	Cap., µF	WV DC	Size *	Net Each, Lots of 1-24	25-49	50-99	100-499
39D407G003EE4	400	3	A	$1.29	$0.755	$0.577	$0.514
39D907G003EJ4	900	3	B	1.34	.775	.597	.534
39D138G003EL4	1,300	3	C	1.38	.805	.617	.554
39D148G003GE4	1,400	3	G	1.43	.835	.637	.574
39D188G003FJ4	1,800	3	D	1.43	.835	.637	.574
39D218G003HE4	2,100	3	K	1.50	.875	.677	.604
39D278G003FL4	2,700	3	E	1.50	.875	.677	.604
39D298G003GJ4	2,900	3	H	1.53	.895	.687	.614
39D308G003JE4	3,000	3	P	1.61	.935	.727	.644
39D368G003FP4	3,600	3	F	1.58	.915	.707	.634
39D428G003HJ4	4,200	3	L	1.65	.955	.747	.664
39D438G003GL4	4,300	3	I	1.64	.955	.737	.654
39D578G003GP4	5,700	3	J	1.74	1.015	.787	.694
39D608G003JJ4	6,000	3	Q	1.80	1.055	.807	.724
39D858G003HP4	8,500	3	N	1.95	1.135	.877	.784
39D908G003JL4	9,000	3	R	2.00	1.165	.897	.794
39D109G003HS4	10,000	3	O	2.10	1.225	.947	.844
39D129G003JP4	12,000	3	S	2.16	1.265	.977	.864
39D159G003JS4	15,000	3	T	2.37	1.385	1.067	.944
39D189G003JT4	18,000	3	U	2.58	1.505	1.157	1.034
39D307G006EE4	300	6	A	1.29	.755	.577	.514
39D607G006EJ4	600	6	B	1.34	.775	.597	.534
39D907G006EL4	900	6	C	1.38	.805	.617	.554
39D108G006GE4	1,000	6	G	1.43	.835	.637	.574
39D128G006FJ4	1,200	6	D	1.43	.835	.637	.574
39D158G006HE4	1,500	6	K	1.50	.875	.677	.604
39D198G006FL4	1,900	6	E	1.50	.875	.677	.604
39D208G006GJ4	2,000	6	H	1.53	.895	.687	.614
39D218G006JE4	2,100	6	P	1.61	.935	.727	.644
39D258G006FP4	2,500	6	F	1.58	.915	.707	.634
39D308G006GL4	3,000	6	I	1.64	.955	.737	.654
39D408G006GP4	4,000	6	J	1.74	1.015	.787	.694
39D428G006JJ4	4,200	6	Q	1.80	1.055	.807	.724
39D608G006HP4	6,000	6	N	1.95	1.135	.877	.784
39D638G006JL4	6,300	6	R	2.00	1.165	.897	.794
39D758G006HS4	7,500	6	O	2.10	1.225	.947	.844
39D858G006JP4	8,500	6	S	2.16	1.265	.977	.864
39D109G006JS4	10,000	6	T	2.37	1.385	1.067	.944
39D129G006JT4	12,000	6	U	2.58	1.505	1.157	1.034
39D257G010EE4	250	10	A	1.29	.755	.577	.514
39D507G010EJ4	500	10	B	1.34	.775	.597	.534
39D807G010EL4	800	10	C	1.38	.805	.617	.554
39D857G010GE4	850	10	G	1.43	.835	.637	.574
39D108G010FJ4	1,000	10	D	1.43	.835	.637	.574
39D128G010HE4	1,200	10	K	1.50	.875	.677	.604
39D168G010FL4	1,600	10	E	1.50	.875	.677	.604
39D178G010GJ4	1,700	10	H	1.53	.895	.687	.614
39D218G010FP4	2,100	10	F	1.58	.915	.707	.634
39D258G010GL4	2,500	10	I	1.64	.955	.737	.654
39D348G010GP4	3,400	10	J	1.74	1.015	.787	.694
39D358G010JJ4	3,500	10	Q	1.80	1.055	.807	.724
39D508G010HP4	5,000	10	N	1.95	1.135	.877	.784
39D528G010JL4	5,200	10	R	2.00	1.165	.897	.794
39D638G010HS4	6,300	10	O	1.80	1.055	.807	.724
39D718G010JP4	7,100	10	S	2.16	1.265	.977	.864
39D888G010JS4	8,800	10	T	2.37	1.385	1.067	.944
39D109G010JT4	10,000	10	U	2.58	1.505	1.157	1.034
39D207G015EE4	200	15	A	1.29	.755	.577	.514
39D407G015EJ4	400	15	B	1.34	.775	.597	.534
39D607G015EL4	600	15	C	1.38	.805	.617	.554
39D807G015FJ4	800	15	D	1.43	.835	.637	.574
39D957G015HE4	950	15	K	1.50	.875	.677	.604
39D128G015FL4	1,200	15	E	1.50	.875	.677	.604
39D138G015GJ4	1,300	15	H	1.53	.895	.687	.614
39D168G015FP4	1,600	15	F	1.58	.915	.707	.634
39D198G015GL4	1,900	15	I	1.64	.955	.737	.654
39D258G015GP4	2,500	15	J	1.74	1.015	.787	.694
39D268G015JJ4	2,600	15	Q	1.80	1.055	.807	.724
39D388G015HP4	3,800	15	N	1.95	1.135	.877	.784
39D408G015JL4	4,000	15	R	2.00	1.165	.897	.794
39D478G015HS4	4,700	15	O	2.10	1.225	.947	.844
39D538G015JP4	5,300	15	S	2.16	1.265	.977	.864
39D668G015JS4	6,600	15	T	2.37	1.385	1.067	.944
39D808G015JT4	8,000	15	U	2.58	1.505	1.157	1.034
39D107G025EE4	100	25	A	1.29	.755	.577	.514
39D207G025EJ4	200	25	B	1.34	.775	.597	.534
39D357G025EL4	350	25	C	1.38	.805	.617	.554
39D457G025FJ4	450	25	D	1.43	.835	.637	.574
39D507G025HE4	500	25	K	1.50	.875	.677	.604
39D707G025FL4	700	25	E	1.50	.875	.677	.604
39D757G025GJ4	750	25	H	1.53	.895	.687	.614
39D807G025JE4	800	25	P	1.61	.935	.727	.644
39D957G025FP4	950	25	F	1.58	.915	.707	.634
39D108G025GL4	1,000	25	I	1.64	.955	.737	.654
39D118G025HJ4	1,100	25	L	1.65	.955	.747	.664
39D158G025GP4	1,500	25	J	1.74	1.015	.787	.694
39D168G025JJ4	1,600	25	Q	1.80	1.055	.807	.724
39D178G025HL4	1,700	25	M	1.80	1.055	.807	.724
39D228G025HP4	2,200	25	N	1.95	1.135	.877	.784
39D248G025JL4	2,400	25	R	2.00	1.165	.897	.794
39D288G025HS4	2,800	25	O	2.10	1.225	.947	.844
39D328G025JP4	3,200	25	S	2.16	1.265	.977	.864
39D408G025JS4	4,000	25	T	2.37	1.385	1.067	.944
39D478G025JT4	4,700	25	U	2.58	1.505	1.157	1.034
39D756G030EE4	75	30	A	1.29	.755	.577	.514
39D157G030EJ4	150	30	B	1.34	.775	.597	.534

Sprague Number	Cap., µF	WV DC	Size *	Net Each, Lots of 1-24	25-49	50-99	100-499
39D257G030EL4	250	30	C	$1.38	$0.805	$0.617	$0.554
39D357G030FJ4	350	30	D	1.43	.835	.637	.574
39D407G030HE4	400	30	K	1.50	.875	.677	.604
39D507G030FL4	500	30	E	1.50	.875	.677	.604
39D607G030JE4	600	30	P	1.61	.935	.727	.644
39D707G030FP4	700	30	F	1.58	.915	.707	.634
39D857G030GL4	850	30	I	1.64	.955	.737	.654
39D118G030GP4	1,100	30	J	1.74	1.015	.787	.694
39D128G030HL4	1,200	30	M	1.80	1.055	.807	.724
39D178G030HP4	1,700	30	N	1.95	1.135	.877	.784
39D188G030JL4	1,800	30	R	2.00	1.165	.897	.794
39D218G030HS4	2,100	30	O	2.10	1.225	.947	.844
39D248G030JP4	2,400	30	S	2.16	1.265	.977	.864
39D308G030JS4	3,000	30	T	2.37	1.385	1.067	.944
39D368G030JT4	3,600	30	U	2.58	1.505	1.157	1.034
39D756G040EE4	75	40	A	1.29	.755	.577	.514
39D157G040EJ4	150	40	B	1.34	.775	.597	.534
39D157G040EL4	200	40	C	1.38	.805	.617	.554
39D257G040GE4	250	40	G	1.43	.835	.637	.574
39D307G040FJ4	300	40	D	1.43	.835	.637	.574
39D357G040HE4	350	40	K	1.50	.875	.677	.604
39D457G040FL4	450	40	E	1.50	.875	.677	.604
39D507G040GJ4	500	40	H	1.53	.895	.687	.614
39D607G040FP4	600	40	F	1.58	.915	.707	.634
39D757G040GL4	750	40	I	1.64	.955	.737	.654
39D108G040GP4	1,000	40	J	1.74	1.015	.787	.649
39D118G040HL4	1,100	40	M	1.80	1.055	.807	.724
39D158G040HP4	1,500	40	N	1.95	1.135	.877	.784
39D168G040JL4	1,600	40	R	2.00	1.165	.897	.794
39D198G040HS4	1,900	40	O	2.10	1.225	.947	.844
39D218G040JP4	2,100	40	S	2.16	1.265	.977	.864
39D268G040JS4	2,600	40	T	2.37	1.385	1.067	.944
39D328G040JT4	3,200	40	U	2.58	1.505	1.157	1.034
39D506G050EE4	50	50	A	1.29	.755	.577	.51
39D107G050EJ4	100	50	B	1.34	.775	.597	.53
39D157G050EL4	150	50	C	1.38	.805	.617	.55
39D207G050FJ4	200	50	D	1.43	.835	.637	.57
39D257G050HE4	250	50	K	1.50	.875	.677	.60
39D357G050FL4	350	50	E	1.50	.875	.677	.60
39D457G050FP4	450	50	F	1.58	.915	.707	.63
39D507G050GL4	500	50	I	1.64	.955	.737	.65
39D707G050GP4	700	50	J	1.74	1.015	.787	.69
39D757G050JJ4	750	50	Q	1.80	1.055	.807	.72
39D807G050HL4	800	50	M	1.80	1.055	.807	.72
39D118G050HP4	1,100	50	N	1.95	1.135	.877	.78
39D138G050HS4	1,300	50	O	2.10	1.225	.947	.84
39D158G050JP4	1,500	50	S	2.16	1.265	.977	.86
39D198G050JS4	1,900	50	T	2.37	1.385	1.067	.94
39D238G050JT4	2,300	50	U	2.58	1.505	1.157	1.03
39D306G075EE4	30	75	A	1.29	.755	.577	.51
39D756G075EJ4	75	75	B	1.34	.775	.597	.53
39D107G075EL4	100	75	C	1.38	.805	.617	.55
39D157G075FJ4	150	75	D	1.43	.835	.637	.57
39D207G075FL4	200	75	E	1.50	.875	.677	.60
39D257G075JE4	250	75	P	1.61	.935	.727	.64
39D307G075FP4	300	75	F	1.58	.915	.707	.63
39D357G075GL4	350	75	I	1.64	.955	.737	.65
39D457G075GP4	450	75	J	1.74	1.015	.787	.69
39D507G075HL4	500	75	M	1.80	1.055	.807	.72
39D707G075HP4	700	75	N	1.95	1.135	.877	.78
39D757G075JL4	750	75	R	2.00	1.165	.897	.79
39D857G075HS4	850	75	O	2.10	1.225	.947	.84
39D108G075JP4	1,000	75	S	2.16	1.265	.977	.86
39D128G075JS4	1,200	75	T	2.37	1.385	1.067	.94
39D158G075JT4	1,500	75	U	2.58	1.505	1.157	1.03
39D156F100EE4	15	100	A	1.29	.755	.577	.51
39D356F100EJ4	35	100	B	1.34	.775	.597	.53
39D556F100EL4	55	100	C	1.38	.805	.617	.55
39D606F100GE4	60	100	G	1.43	.835	.637	.57
39D756F100FJ4	75	100	D	1.43	.835	.637	.57
39D906F100HE4	90	100	K	1.50	.875	.677	.60
39D117F100FL4	110	100	E	1.50	.875	.677	.60
39D127F100GJ4	120	100	H	1.53	.895	.687	.61
39D137F100JE4	130	100	P	1.61	.935	.727	.64
39D157F100FP4	150	100	F	1.58	.915	.707	.63
39D187F100HJ4	180	100	L	1.65	.955	.747	.66
39D197F100GL4	190	100	I	1.64	.955	.737	.65
39D257F100GP4	250	100	J	1.74	1.015	.787	.69
39D267F100JJ4	260	100	Q	1.80	1.055	.807	.72
39D287F100HL4	280	100	M	1.80	1.055	.807	.72
39D377F100HP4	370	100	N	1.95	1.135	.877	.78
39D397F100JL4	390	100	R	2.00	1.165	.897	.79
39D467F100HS4	460	100	O	2.10	1.225	.947	.84
39D527F100JP4	520	100	S	2.16	1.265	.977	.86
39D657F100JS4	650	100	T	2.37	1.385	1.067	.94
39D787F100JT4	780	100	U	2.58	1.508	1.157	1.03
39D106F150EE4	10	150	A	1.29	.755	.577	.51
39D256F150EJ4	25	150	B	1.34	.775	.597	.53
39D406F150EL4	40	150	C	1.38	.805	.617	.55
39D506F150FJ4	50	150	D	1.43	.835	.637	.57
39D606F150HE4	60	150	K	1.50	.875	.677	.60
39D806F150FL4	80	150	E	1.50	.875	.677	.60
39D856F150GJ4	85	150	H	1.53	.895	.687	.61
39D886F150JE4	88	150	P	1.61	.935	.727	.64
39D107F150FP4	100	150	F	1.58	.915	.707	.63
39D127F150GL4	120	150	I	1.64	.955	.737	.65

TYPE 39D CONTINUED ON THE FOLLOWING PAGE

SPRAGUE Electrolytic Capacitors

TYPE 39D POWERLYTIC® TUBULAR ELECTROLYTIC CAPACITORS (CONT'D)

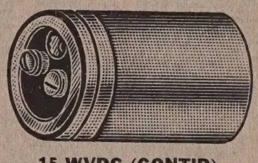
Sprague Number	Cap., µF	WV DC	Size *	Net Each, Lots of			
				1-24	25-49	50-99	100-499
39D267F150JL4	260	150	R	$2.00	$1.165	$0.897	$0.794
39D317F150HS4	310	150	O	2.10	1.225	.947	.844
39D357F150JP4	350	150	S	2.16	1.265	.977	.864
39D447F150JS4	440	150	T	2.37	1.385	1.067	.944
39D537F150JT4	530	150	U	2.58	1.505	1.157	1.034
39D905F200EE4	9	200	A	1.29	.755	.577	.514
39D156F200EJ4	15	200	B	1.34	.775	.597	.534
39D256F200EL4	25	200	C	1.38	.805	.617	.554
39D306F200GE4	30	200	G	1.43	.835	.637	.574
39D356F200FJ4	35	200	D	1.43	.835	.637	.574
39D406F200HE4	40	200	K	1.50	.875	.677	.604
39D556F200FL4	55	200	E	1.50	.875	.677	.604
39D606F200GJ4	60	200	H	1.53	.895	.687	.614
39D756F200FP4	75	200	F	1.58	.915	.707	.634
39D806F200HJ4	80	200	L	1.65	.955	.747	.664
39D906F200GL4	90	200	I	1.64	.955	.737	.654
39D127F200GP4	120	200	J	1.74	1.015	.787	.694
39D137F200HL4	130	200	M	1.80	1.055	.807	.724
39D177F200HP4	170	200	N	1.95	1.135	.877	.784
39D187F200JL4	180	200	R	2.00	1.165	.897	.794
39D227F200HS4	220	200	O	2.10	1.225	.947	.844
39D257F200JP4	250	200	S	2.16	1.265	.977	.864
39D317F200JS4	310	200	T	2.37	1.385	1.067	.944
39D377F200JT4	370	200	U	2.58	1.505	1.157	1.034
39D705F250EE4	7	250	A	1.29	.755	.577	.514
39D156F250EJ4	15	250	B	1.34	.775	.597	.534
39D206F250EL4	20	250	C	1.38	.805	.617	.554
39D306F250FJ4	30	250	D	1.43	.835	.637	.574
39D356F250HE4	35	250	K	1.50	.875	.677	.604
39D456F250FL4	45	250	E	1.50	.875	.677	.604
39D506F250JE4	50	250	P	1.61	.935	.727	.644
39D606F250FP4	60	250	F	1.58	.915	.707	.634
39D706F250GL4	70	250	I	1.64	.955	.737	.654
39D956F250GP4	95	250	J	1.74	1.015	.787	.694
39D107F250HL4	100	250	M	1.80	1.055	.807	.724
39D147F250HP4	140	250	N	1.95	1.135	.877	.784
39D157F250JL4	150	250	R	2.00	1.165	.897	.794
39D187F250HS4	180	250	O	2.10	1.225	.947	.844
39D207F250JP4	200	250	S	2.16	1.265	.977	.864
39D257F250JS4	250	250	T	2.37	1.385	1.067	.944
39D307F250JT4	300	250	U	2.58	1.505	1.157	1.034
39D505F300EE4	5	300	A	1.29	.755	.577	.514
39D106F300EJ4	10	300	B	1.34	.775	.597	.534
39D156F300EL4	15	300	C	1.38	.805	.617	.554
39D206F300FJ4	20	300	D	1.43	.835	.637	.574
39D256F300HE4	25	300	K	1.50	.875	.677	.604
39D306F300FL4	30	300	E	$1.50	$1.875	$0.677	$0.604
39D127F300HS4	120	300	O	2.10	1.225	.947	.844
39D137F300JP4	130	300	S	2.16	1.265	.977	.864
39D117F300JS4	170	300	T	2.37	1.385	1.067	.944
39D207F300JT4	200	300	U	2.58	1.505	1.157	1.034
39D405F350EE4	4	350	A	1.29	.755	.577	.514
39D805F350EJ4	8	350	B	1.34	.775	.597	.534
39D126F350EL4	12	350	C	1.38	.805	.617	.554
39D156F350FJ4	15	350	D	1.43	.835	.637	.574
39D206F350FL4	20	350	E	1.50	.875	.677	.604
39D256F350GJ4	25	350	H	1.53	.895	.687	.614
39D306F350FP4	30	350	F	1.58	.915	.707	.634
39D406F350GL4	40	350	I	1.64	.955	.737	.654
39D506F350GP4	50	350	J	1.74	1.015	.787	.694
39D606F350HL4	60	350	M	1.80	1.055	.807	.724
39D806F350HP4	80	350	N	1.95	1.135	.877	.784
39D107F350HS4	100	350	O	2.10	1.225	.947	.844
39D117F350JP4	110	350	S	2.16	1.265	.977	.864
39D137F350JS4	130	350	T	2.37	1.385	1.067	.944
39D167F350JT4	160	350	U	2.58	1.505	1.157	1.034
39D205F400EE4	2	400	A	1.29	.755	.577	.514
39D505F400EJ4	5	400	B	1.34	.775	.597	.534
39D106F400FJ4	10	400	D	1.43	.835	.637	.574
39D156F400FL4	15	400	E	1.50	.875	.677	.604
39D206F400FP4	20	400	F	1.58	.915	.707	.634
39D256F400GL4	25	400	I	1.64	.955	.737	.654
39D356F400GP4	35	400	J	1.74	1.015	.787	.694
39D406F400HL4	40	400	M	1.80	1.055	.807	.724
39D556F400HP4	55	400	N	1.95	1.135	.877	.784
39D656F400HS4	65	400	O	2.10	1.225	.947	.844
39D756F400JP4	75	400	S	2.16	1.265	.977	.864
39D906F400JS4	90	400	T	2.37	1.385	1.067	.944
39D117F400JT4	110	400	U	2.58	1.505	1.157	1.034
39D105F450EE4	1	450	A	1.29	.755	.577	.514
39D305F450EJ4	3	450	B	1.34	.775	.597	.534
39D505F450EL4	5	450	C	1.38	.805	.617	.554
39D106F450FL4	10	450	E	1.50	.875	.677	.604
39D156F450FP4	15	450	F	1.58	.915	.707	.634
39D206F450GL4	20	450	I	1.64	.955	.737	.654
39D256F450GP4	25	450	J	1.74	1.015	.787	.694

***SIZE**

Size in inches (dia. x lg.): **A,** 9/16 x 1¼; **B,** 9/16 x 1¾; **C,** 9/16 x 2¼; **D,** 11/16 x 1¾; **E,** 11/16 x 2¼; **F,** 11/16 x 2¾; **G,** 13/16 x 1¼; **H,** 13/16 x 1¾; **I,** 13/16 x 2¼; **J,** 13/16 x 2¾; **K,** 15/16 x 1¼; **L,** 15/16 x 1¾; **M,** 15/16 x 2¼; **N,** 15/16 x 2¾; **O,** 15/16 x 3¼; **P,** 1 1/16 x 1¼; **Q,** 1 1/16 x 1¾; **R,** 1 1/16 x 2¼; **S,** 1 1/16 x 2¾; **T,** 1 1/16 x 3¼; **U,** 1 1/16 x 3¾.

TYPE 36D POWERLYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

Especially suitable for replacement applications. Maximum space economy at operating temperatures up to 85° C. Low ESR and leakage currents. Extremely long shelf life. Uses most reliable seal developed for aluminum electrolytic capacitors. Pressure-type safety vents employing silicone rubber are used on all cases. Capacitors listed have low-insert terminals; change last character of model no. from A to **B** for high-insert or A to **C** for solder-lug terminals, price on request.



3 WVDC

Sprague Number	Cap., µF	*
36D103G003AA2A	10000	AA
36D203G003AB2A	20000	AB
36D303G003AC2A	30000	AC
36D363G003AD2A	36000	AD
36D413G003AE2A	41000	AE
36D463G003AF2A	46000	AF
36D473G003BB2A	47000	BB
36D703G003BC2A	70000	BC
36D803G003CB2A	80000	CB
36D823G003BD2A	82000	BD
36D943G003BE2A	94000	BE
36D104G003BF2A	100000	BF
36D124G003CC2A	120000	CC
36D144G003CD2A	140000	CD
36D164G003CE2A	160000	CE
36D174G003DC2A	170000	DC
36D184G003CF2A	180000	CF
36D204G003DD2A	200000	DD
36D234G003DE2A	230000	DE
36D274G003DF2A	270000	DF

6 WVDC

36D702G006AA2A	7000	AA
36D143G006AB2A	14000	AB
36D213G006AC2A	21000	AC
36D253G006AD2A	25000	AD
36D293G006AE2A	29000	AE
36D323G006AF2A	32000	AF
36D333G006BB2A	33000	BB
36D503G006BC2A	50000	BC
36D573G006CB2A	57000	CB
36D583G006BD2A	58000	BD
36D663G006BE2A	66000	BE
36D753G006BF2A	75000	BF
36D863G006CC2A	86000	CC
36D104G006CD2A	100000	CD

6 WVDC (CONT'D)

Sprague Number	Cap., µF	*
36D114G006CE2A	110000	CE
36D124G006DC2A	120000	DC
36D144G006DD2A	140000	DD
36D164G006DE2A	160000	DE
36D194G006DF2A	190000	DF

10 WVDC

36D602G010AA2A	6000	AA
36D123G010AB2A	12000	AB
36D183G010AC2A	18000	AC
36D213G010AD2A	21000	AD
36D243G010AE2A	24000	AE
36D273G010AF2A	27000	AF
36D283G010BB2A	28000	BB
36D423G010BC2A	42000	BC
36D483G010CB2A	48000	CB
36D493G010BD2A	49000	BD
36D563G010BE2A	56000	BE
36D633G010BF2A	63000	BF
36D723G010CC2A	72000	CC
36D843G010CD2A	84000	CD
36D963G010CE2A	96000	CE
36D104G010CF2A	100000	CF
36D104G010DC2A	100000	DC
36D124G010DD2A	120000	DD
36D144G010DE2A	140000	DE
36D164G010DF2A	160000	DF

15 WVDC

36D462G015AA2A	4600	AA
36D922G015AB2A	9200	AB
36D133G015AC2A	13000	AC
36D163G015AD2A	16000	AD
36D183G015AE2A	18000	AE
36D203G015AF2A	20000	AF

15 WVDC (CONT'D)

Sprague Number	Cap., µF	*
36D213G015BB2A	21000	BB
36D313G015BC2A	31000	BC
36D363G015CB2A	36000	CB
36D373G015BD2A	37000	BD
36D423G015BE2A	42000	BE
36D473G015BF2A	47000	BF
36D543G015CC2A	54000	CC
36D633G015CD2A	63000	CD
36D723G015CE2A	72000	CE
36D803G015DC2A	80000	DC
36D813G015CF2A	81000	CF
36D933G015DD2A	93000	DD
36D104G015DE2A	100000	DE
36D124G015DF2A	120000	DF

25 WVDC

36D272G025AA2A	2700	AA
36D552G025AB2A	5500	AB
36D822G025AC2A	8200	AC
36D962G025AD2A	9600	AD
36D113G025AE2A	11000	AE
36D123G025AF2A	12000	AF
36D183G025BC2A	18000	BC
36D213G025CB2A	21000	CB
36D223G025BD2A	22000	BD
36D253G025BE2A	25000	BE
36D283G025BF2A	28000	BF
36D323G025CC2A	32000	CC
36D383G025CD2A	38000	CD
36D433G025CE2A	43000	CE
36D473G025DC2A	47000	DC
36D483G025CF2A	48000	CF
36D553G025DD2A	55000	DD
36D633G025DE2A	63000	DE
36D713G025DF2A	71000	DF

TYPE 36D CONTINUED ON THE FOLLOWING PAGE

SPRAGUE Electrolytic Capacitors

TYPE 36D ELECTROLYTIC CAPACITORS (CONT'D)

30 WVDC

Sprague Number	Cap., µF	*
36D202G030AA2A	2000	AA
36D402G030AB2A	4000	AB
36D602G030AC2A	6000	AC
36D722G030AD2A	7200	AD
36D832G030AE2A	8300	AE
36D932G030AF2A	9300	AF
36D952G030BB2A	9500	BB
36D143G030BC2A	14000	BC
36D163G030BD2A	16000	BD
36D193G030BE2A	19000	BE
36D213G030BF2A	21000	BF
36D243G030CC2A	24000	CC
36D283G030CD2A	28000	CD
36D323G030CE2A	32000	CE
36D363G030DC2A	36000	DC
36D373G030CF2A	37000	CF
36D423G030DD2A	42000	DD
36D483G030DE2A	48000	DE
36D543G030DF2A	54000	DF

40 WVDC

36D182G040AA2A	1800	AA
36D362G040AB2A	3600	AB
36D552G040AC2A	5500	AC
36D642G040AD2A	6400	AD
36D732G040AE2A	7300	AE
36D832G040AF2A	8300	AF
36D842G040BB2A	8400	BB
36D123G040BC2A	12000	BC
36D143G040BD2A	14000	BD
36D163G040BE2A	16000	BE
36D193G040BF2A	19000	BF
36D213G040CC2A	21000	CC
36D253G040CD2A	25000	CD
36D283G040CE2A	28000	CE
36D313G040DC2A	31000	DC
36D323G040CF2A	32000	CF
36D373G040DD2A	37000	DD
36D423G040DE2A	42000	DE
36D483G040DF2A	48000	DF

50 WVDC

36D132G050AA2A	1300	AA
36D262G050AB2A	2600	AB
36D392G050AC2A	3900	AC
36D462G050AD2A	4600	AD
36D522G050AE2A	5200	AE
36D592G050AF2A	5900	AF
36D602G050BB2A	6000	BB
36D902G050BC2A	9000	BC
36D103G050BD2A	10000	BD
36D123G050BE2A	12000	BE
36D133G050BF2A	13000	BF
36D153G050CC2A	15000	CC
36D183G050CD2A	18000	CD
36D203G050CE2A	20000	CE
36D223G050DC2A	22000	DC
36D233G050CF2A	23000	CF
36D263G050DD2A	26000	DD
36D303G050DE2A	30000	DE
36D343G050DF2A	34000	DF

75 WVDC

36D172G075AB2A	1700	AB
36D252G075AC2A	2500	AC
36D302G075AD2A	3000	AD
36D342G075AE2A	3400	AE
36D382G075AF2A	3800	AF
36D392G075BB2A	3900	BB
36D592G075BC2A	5900	BC
36D672G075CB2A	6700	CB
36D692G075BD2A	6900	BD
36D782G075BE2A	7800	BE
36D882G075BF2A	8800	BF
36D103G075CC2A	10000	CC
36D113G075CD2A	11000	CD
36D133G075CE2A	13000	CE
36D143G075DC2A	14000	DC
36D153G075CF2A	15000	CF
36D173G075DD2A	17000	DD
36D203G075DE2A	20000	DE
36D223G075DF2A	22000	DF

100 WVDC

Sprague Number	Cap., µF	*
36D451G100AA2A	450	AA
36D901G100AB2A	900	AB
36D132G100AC2A	1300	AC
36D152G100AD2A	1500	AD
36D182G100AE2A	1800	AE
36D202G100AF2A	2000	AF
36D302G100BC2A	3000	BC
36D352G100CB2A	3500	CB
36D362G100BD2A	3600	BD
36D402G100BE2A	4000	BE
36D452G100BF2A	4500	BF
36D532G100CC2A	5300	CC
36D612G100CD2A	6100	CD
36D702G100CE2A	7000	CE
36D782G100CF2A	7800	CF
36D782G100DC2A	7800	DC
36D912G100DD2A	9100	DD
36D103G100DE2A	10000	DE
36D113G100DF2A	11000	DF

150 WVDC

36D301F150AA2A	300	AA
36D601F150AB2A	600	AB
36D901F150AC2A	900	AC
36D112F150AD2A	1100	AD
36D122F150AE2A	1200	AE
36D132F150AF2A	1300	AF
36D142F150BB2A	1400	BB
36D212F150BC2A	2100	BC
36D242F150BD2A	2400	BD
36D272F150BE2A	2700	BE
36D312F150BF2A	3100	BF
36D362F150CC2A	3600	CC
36D422F150CD2A	4200	CD
36D472F150CE2A	4700	CE
36D532F150CF2A	5300	CF
36D532F150DC2A	5300	DC
36D622F150DD2A	6200	DD
36D702F150DE2A	7000	DE
36D782F150DF2A	7800	DF

200 WVDC

36D251F200AA2A	250	AA
36D431F200AB2A	430	AB
36D641F200AC2A	640	AC
36D771F200AD2A	770	AD
36D851F200AE2A	850	AE
36D951F200AF2A	950	AF
36D142F200BC2A	1400	BC
36D162F200CB2A	1600	CB
36D172F200BD2A	1700	BD
36D192F200BE2A	1900	BE
36D212F200BF2A	2100	BF
36D252F200CC2A	2500	CC
36D292F200CD2A	2900	CD
36D332F200CE2A	3300	CE
36D372F200CF2A	3700	CF
36D372F200DC2A	3700	DC
36D432F200DD2A	4300	DD
36D482F200DE2A	4800	DE
36D552F200DF2A	5500	DF

250 WVDC

36D171F250AA2A	170	AA
36D351F250AB2A	350	AB
36D531F250AC2A	530	AC
36D631F250AD2A	630	AD
36D701F250AE2A	700	AE
36D781F250AF2A	780	AF
36D801F250BB2A	800	BB
36D122F250BC2A	1200	BC
36D132F250CB2A	1300	CB
36D142F250BD2A	1400	BD
36D152F250BE2A	1500	BE
36D172F250BF2A	1700	BF
36D202F250CC2A	2000	CC
36D242F250CD2A	2400	CD
36D272F250CE2A	2700	CE
36D302F250CF2A	3000	CF
36D302F250DC2A	3000	DC
36D352F250DD2A	3500	DD
36D402F250DE2A	4000	DE
36D452F250DF2A	4500	DF

300 WVDC

Sprague Number	Cap., µF	*
36D121F300AA2A	120	AA
36D241F300AB2A	240	AB
36D371F300AC2A	370	AC
36D451F300AD2A	450	AD
36D501F300AE2A	500	AE
36D551F300AF2A	550	AF
36D821F300BC2A	820	BC
36D951F300BD2A	950	BD
36D112F300BE2A	1100	BE
36D122F300BF2A	1200	BF
36D142F300CC2A	1400	CC
36D162F300CD2A	1600	CD
36D182F300CE2A	1800	CE
36D212F300CF2A	2100	CF
36D212F300DC2A	2100	DC
36D242F300DD2A	2400	DD
36D272F300DE2A	2700	DE
36D312F300DF2A	3100	DF

350 WVDC

36D950F350AA2A	95	AA
36D191F350AB2A	190	AB
36D291F350AC2A	290	AC
36D361F350AD2A	360	AD
36D391F350AE2A	390	AE
36D421F350BB2A	420	BB
36D441F350AF2A	440	AF
36D651F350BC2A	650	BC
36D751F350CB2A	750	CB
36D781F350BD2A	780	BD
36D881F350BE2A	880	BE
36D102F350BF2A	1000	BF
36D112F350CC2A	1100	CC
36D132F350CD2A	1300	CD
36D152F350CE2A	1500	CE
36D162F350DC2A	1600	DC
36D172F350CF2A	1700	CF
36D192F350DD2A	1900	DD
36D222F350DE2A	2200	DE
36D252F350DF2A	2500	DF

400 WVDC

36D650F400AA2A	65	AA
36D121F400AB2A	120	AB
36D191F400AC2A	190	AC
36D231F400AD2A	230	AD
36D271F400AE2A	270	AE
36D291F400BB2A	290	BB
36D301F400AF2A	300	AF
36D421F400BC2A	420	BC
36D491F400CB2A	490	CB
36D531F400BD2A	530	BD
36D611F400BE2A	610	BE
36D681F400BF2A	680	BF
36D791F400CC2A	790	CC
36D911F400CD2A	910	CD
36D102F400CE2A	1000	CE
36D102F400DC2A	1000	DC
36D112F400CF2A	1100	CF
36D122F400DD2A	1200	DD
36D142F400DE2A	1400	DE
36D162F400DF2A	1600	DF

450 WVDC

36D500F450AA2A	50	AA
36D101F450AB2A	100	AB
36D141F450AC2A	140	AC
36D171F450AD2A	170	AD
36D191F450AE2A	190	AE
36D211F450AF2A	210	AF
36D221F450BB2A	220	BB
36D331F450BC2A	330	BC
36D381F450CB2A	380	CB
36D391F450BD2A	390	BD
36D441F450BE2A	440	BE
36D491F450BF2A	490	BF
36D571F450CC2A	570	CC
36D661F450CD2A	660	CD
36D761F450CE2A	760	CE
36D851F450CF2A	850	CF
36D861F450DC2A	860	DC
36D102F450DD2A	1000	DD
36D112F450DE2A	1100	DE
36D122F450DF2A	1200	DF

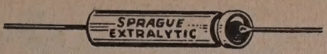
*CASE SIZES AND PRICES

* Code	Size, Inches Dia. x Lgth.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
AA	1 29/64 x 2¼	$2.45	$1.96	$1.72	$1.32	$1.08
AB	1 29/64 x 3¼	2.98	2.38	2.08	1.61	1.31
AC	1 29/64 x 4¼	3.43	2.74	2.40	1.85	1.51
AD	1 29/64 x 4¾	3.70	2.96	2.59	2.00	1.63
AE	1 29/64 x 5¼	3.93	3.14	2.75	2.12	1.73
AF	1 29/64 x 5¾	4.20	3.36	2.94	2.27	1.85
BB	2 5/64 x 3¼	4.55	3.64	3.19	2.46	2.00
BC	2 5/64 x 4¼	5.60	4.48	3.92	3.02	2.46
BD	2 5/64 x 4¾	6.15	4.92	4.31	3.32	2.71
BE	2 5/64 x 5¼	6.68	5.34	4.67	3.60	2.94
BF	2 5/64 x 5¾	7.20	5.76	5.04	3.89	3.17

* Code	Size, Inches Dia. x Lgth.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
CB	2 37/64 x 3¼	$ 6.50	$ 5.20	$ 4.55	$ 3.51	$ 2.8
CC	2 37/64 x 4¼	8.18	6.54	5.72	4.42	3.6
CD	2 37/64 x 4¾	9.03	7.22	6.32	4.87	3.9
CE	2 37/64 x 5¼	9.88	7.90	6.91	5.33	4.3
CF	2 37/64 x 5¾	10.70	8.56	7.49	5.78	4.7
DC	3 5/64 x 4¼	10.88	8.70	7.61	5.87	4.7
DD	3 5/64 x 4¾	12.20	9.76	8.54	6.59	5.3
DE	3 5/64 x 5¼	13.63	10.90	9.54	7.36	6.0
DF	3 5/64 x 5¾	14.95	11.96	10.47	8.07	6.5
DJ	3 5/64 x 8¾	22.95	18.36	16.07	12.39	10.1

SPRAGUE Electrolytic Capacitors

TYPE 600D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS



Aluminum electrolytics offering extended operating temperature ange from −55° C to +125° C. Dual rating makes possible opera- ion at either +85° C or +125° C. Improved oxide systems, etching techniques, and end seals, together with a new electrolyte, nake Type 600D capacitors equivalent or superior to comparable oil tantalum types. They are also lower in cost and one-third the veight of comparable foil tantalums.

7 WVDC AT 85° C; 5 WVDC AT 125° C

Sprague No.*	Cap. µF	†	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499	500-999
00D127G007KD4	120	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D227G007DD4	220	B	2.62	1.96	1.315	1.147	.824	.762
00D277G007DE4	270	C	2.98	2.23	1.495	1.307	.944	.862
00D397G007DG4	390	D	3.46	2.59	1.735	1.517	1.084	1.002
00D567G007DJ4	560	E	3.98	2.98	1.995	1.747	1.254	1.152
00D827G007DL4	820	F	5.06	3.79	2.535	2.217	1.584	1.462
00D108G007DX4	1000	G	6.06	4.54	3.035	2.657	1.904	1.752

10 WVDC AT 85° C; 7 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D107G010KD4	100	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D187G010DD4	180	B	2.62	1.96	1.315	1.147	.824	.762
00D227G010DE4	220	C	2.98	2.23	1.495	1.307	.944	.862
00D337G010DG4	330	D	3.46	2.59	1.735	1.517	1.084	1.002
00D477G010DJ4	470	E	3.98	2.98	1.995	1.747	1.254	1.152
00D687G010DL4	680	F	5.06	3.79	2.535	2.217	1.584	1.462
00D827G010DX4	820	G	6.06	4.54	3.035	2.657	1.904	1.752

15 WVDC AT 85° C; 10 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D686G015KD4	68	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D826G015KD4	82	A	2.62	1.96	1.315	1.147	.824	.762
00D157G015DD4	150	B	2.62	1.96	1.315	1.147	.824	.762
00D187G015DE4	180	C	2.98	2.23	1.495	1.307	.944	.862
00D277G015DG4	270	D	3.46	2.59	1.735	1.517	1.084	1.002
00D397G015DJ4	390	E	3.98	2.98	1.995	1.747	1.254	1.152
00D567G015DL4	560	F	5.06	3.79	2.535	2.217	1.584	1.462
00D687G015DX4	680	G	6.06	4.54	3.035	2.657	1.904	1.752

20 WVDC AT 85° C; 15 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D686G020KD4	68	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D107G020DD4	100	B	2.62	1.96	1.315	1.147	.824	.762
00D147G020DE4	140	C	2.98	2.23	1.495	1.307	.944	.862
00D227G020DG4	220	D	3.46	2.59	1.735	1.517	1.084	1.002
00D297G020DJ4	290	E	3.98	2.98	1.995	1.747	1.254	1.152
00D447G020DL4	440	F	5.06	3.79	2.535	2.217	1.584	1.462
00D607G020DX4	600	G	6.06	4.54	3.035	2.657	1.904	1.752

30 WVDC AT 85° C; 20 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D336G030KD4	33	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D476G030KD4	47	A	2.62	1.96	1.315	1.147	.824	.762
00D826G030DD4	82	B	2.62	1.96	1.315	1.147	.824	.762
00D107G030DE4	100	C	2.98	2.23	1.495	1.307	.944	.862
00D127G030DG4	120	D	3.46	2.59	1.735	1.517	1.084	1.002
00D157G030DG4	150	D	3.46	2.59	1.735	1.517	1.084	1.002
00D227G030DJ4	220	E	3.98	2.98	1.995	1.747	1.254	1.152
00D337G030DL4	330	F	5.06	3.79	2.535	2.217	1.584	1.462
00D397G030DX4	390	G	6.06	4.54	3.035	2.657	1.904	1.752

40 WVDC AT 85° C; 30 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D306G040KD4	30	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D506G040DD4	50	B	2.62	1.96	1.315	1.147	.824	.762
00D706G040DE4	70	C	2.98	2.23	1.495	1.307	.944	.862
00D107G040DG4	100	D	3.46	2.59	1.735	1.517	1.084	1.002
00D147G040DJ4	140	E	3.98	2.98	1.995	1.747	1.254	1.152
00D217G040DL4	210	F	5.06	3.79	2.535	2.217	1.584	1.462
00D287G040DX4	280	G	6.06	4.54	3.035	2.657	1.904	1.752

50 WVDC AT 85° C; 40 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D226G050KD4	22	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D336G050DD4	33	B	2.62	1.96	1.315	1.147	.824	.762
00D476G050DE4	47	C	2.98	2.23	1.495	1.307	.944	.862
00D566G050DG4	56	D	3.46	2.59	1.735	1.517	1.084	1.002
00D686G050DG4	68	D	3.46	2.59	1.735	1.517	1.084	1.002
00D107G050DJ4	100	E	3.98	2.98	1.995	1.747	1.254	1.152
00D157G050DL4	150	F	5.06	3.79	2.535	2.217	1.584	1.462
00D187G050DX4	180	G	6.06	4.54	3.035	2.657	1.904	1.752

60 WVDC AT 85° C; 50 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D176G060KD4	17	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D256G060DD4	25	B	2.62	1.96	1.315	1.147	.824	.762
00D406G060DE4	40	C	2.98	2.23	1.495	1.307	.944	.862
00D606G060DG4	60	D	3.46	2.59	1.735	1.517	1.084	1.002
00D806G060DJ4	80	E	3.98	2.98	1.995	1.747	1.254	1.152
00D127G060DL4	120	F	5.06	3.79	2.535	2.217	1.584	1.462
00D167G060DX4	160	G	6.06	4.54	3.035	2.657	1.904	1.752

75 WVDC AT 85° C; 60 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D126F075KD4	12	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D226F075DD4	22	B	2.62	1.96	1.315	1.147	.824	.762
00D336F075DE4	33	C	2.98	2.23	1.495	1.307	.944	.862
00D476F075DG4	47	D	3.46	2.59	1.735	1.517	1.084	1.002
00D686F075DJ4	68	E	3.98	2.98	1.995	1.747	1.254	1.152
00D107F075DL4	100	F	5.06	3.79	2.535	2.217	1.584	1.462
00D127F075DX4	120	G	6.06	4.54	3.035	2.657	1.904	1.752

100 WVDC AT 85° C; 75 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
00D825F100KD4	8.2	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
00D126F100DD4	12	B	2.62	1.96	1.315	1.147	.824	.762
00D156F100DE4	15	C	2.98	2.23	1.495	1.307	.944	.862
00D226F100DG4	22	D	3.46	2.59	1.735	1.517	1.084	1.002
00D336F100DJ4	33	E	3.98	2.98	1.995	1.747	1.254	1.152
00D476F100DL4	47	F	5.06	3.79	2.535	2.217	1.584	1.462
00D686F100DX4	68	G	6.06	4.54	3.035	2.657	1.904	1.752

150 WVDC AT 85° C; 100 WVDC AT 125° C

Sprague No.*	Cap. µF	†	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499	500-999
600D475F150KD4	4.7	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
600D565F150KD4	5.6	A	2.62	1.96	1.315	1.147	.824	.762
600D825F150DD4	8.2	B	2.62	1.96	1.315	1.147	.824	.762
600D126F150DE4	12	C	2.98	2.23	1.495	1.307	.944	.862
600D186F150DG4	18	D	3.46	2.59	1.735	1.517	1.084	1.002
600D226F150DJ4	22	E	3.98	2.98	1.995	1.747	1.254	1.152
600D336F150DL4	33	F	5.06	3.79	2.535	2.217	1.584	1.462
600D566F150DX4	56	G	6.06	4.54	3.035	2.657	1.904	1.752

200 WVDC AT 85° C; 150 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
600D405F200KD4	4	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
600D605F200DD4	6	B	2.62	1.96	1.315	1.147	.824	.762
600D805F200DE4	8	C	2.98	2.23	1.495	1.307	.944	.862
600D136F200DG4	13	D	3.46	2.59	1.735	1.517	1.084	1.002
600D176F200DJ4	17	E	3.98	2.98	1.995	1.747	1.254	1.152
600D266F200DL4	26	F	5.06	3.79	2.535	2.217	1.584	1.462
600D396F200DX4	39	G	6.06	4.54	3.035	2.657	1.904	1.752

250 WVDC AT 85° C; 200 WVDC AT 125° C

Sprague No.*	Cap. µF	†	1-9	10-24	25-49	50-99	100-499	500-999
600D335F250KD4	3.3	A	$2.62	$1.96	$1.315	$1.147	$0.824	$0.762
600D565F250DD4	5.6	B	2.62	1.96	1.315	1.147	.824	.762
600D685F250DE4	6.8	C	2.98	2.23	1.495	1.307	.944	.862
600D106F250DG4	10	D	3.46	2.59	1.735	1.517	1.084	1.002
600D126F250DJ4	12	E	3.98	2.98	1.995	1.747	1.254	1.152
600D226F250DL4	22	F	5.06	3.79	2.535	2.217	1.584	1.462
600D276F250DX4	27	G	6.06	4.54	3.035	2.657	1.904	1.752

†SIZE

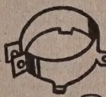
Items listed have outer insulating sleeve; for bare metal case version, subtract .0156″ from diameter .0625″ from lenght.

Case Code	Size, Inches Dia. x Length	Case Code	Size, Inches Dia. x Length
A	.296 x 1.000	E	.390 x 1.687
B	.390 x 1.000	F	.390 x 2.249
C	.390 x 1.187	G	.390 x 2.749
D	.390 x 1.437		

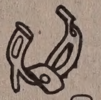
*The prices shown are for units with insulating sleeve. For bare metal case version, change suffix 4 to 0 (e.g., 600D127G007**KD0**) and deduct the following prices from the equivalent value:

	Deduct Each, Lots of 1-9	10-24	25-49	50-99	100-499	500-999
For bare metal case	$0.06	$0.04	$0.035	$0.027	$0.024	$0.022

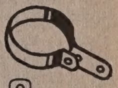
MOUNTING HARDWARE



A



B



C

VERTICAL MTG. CLAMPS FOR CYLINDRICAL CAPACITORS (FIG. A)

Sprague No.	Inside Dia.	Mtg. Ctrs.	Net Each	Sprague No.	Inside Dia.	Mtg. Ctrs.	Net Each
4586-97	1″	1 7/16″	$0.21	4586-48	2″	2 1/2″	$0.36
4586-97F	1 1/4″	1 11/16″	.21	4586-2B	2 1/16″	2 9/16″	.36
4586-97A	1 3/8″	1 25/32″	.21	4586-1	2 1/2″	3″	.36
4586-97B	1 1/2″	1 15/16″	.24	4586-2D	2 9/16″	3 1/16″	.36
4586-97C	1 3/4″	2 3/16″	.24	4586-2	3″	3 1/2″	.42
4-36-14M	1 3/4″	2 3/16″	.24	4586-2A	3 1/16″	3 9/16″	.42

HORIZONTAL MTG. CLIPS FOR CYLINDRICAL CAPACITORS (FIG. B)

36-520E	3/8″	....	$0.09	36-520B	7/8″	....	$0.12
36-520F	1/2″	....	.09	36-520C	1″	....	.12
36-520	5/8″	....	.12	36-520D	1 3/8″	....	.15
36-520A	3/4″	....	.12				

MOUNTING STRAPS FOR TUBULAR COMPONENTS (FIG. C)

36-68T	1/4″	....	$0.06	36-59J	7/8″	....	$0.06
36-59	5/16″	....	.06	36-59K	15/16″	....	.06
36-59A	3/8″	....	.06	36-59L	1″	....	.06
36-59B	7/16″	....	.06	36-59M	1 1/16″	....	.06
36-59C	1/2″	....	.06	36-59N	1 1/8″	....	.06
36-69D	9/16″	....	.06	36-59P	1 3/16″	....	.06
36-69E	5/8″	....	.06	36-59R	1 1/4″	....	.09
36-69F	11/16″	....	.06	36-59S	1 5/16″	....	.09
36-69G	3/4″	....	.06	36-59T	1 3/8″	....	.09
36-69H	13/16″	....	.06				

KRAFTBOARD INSULATING TUBES

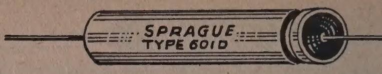
For "above-ground" use with can-type capacitors. Closed top.

Sprague No.	For Can Size	Net Each	Sprague No.	For Can Size	Net Each
407-57A	1″ x 2″	$0.09	407-57E	1 3/8″ x 3″	$0.09
407-57N	1″ x 2 1/2″	.09	407-57Z	1 3/8″ x 3 1/2″	.09
407-57D	1″ x 3″	.09	407-174C	1 3/8″ x 4″	.09
407-174E	1″ x 4″	.09	407-174P	1 3/8″ x 4 1/2″	.09
407-57B	1 3/8″ x 2″	.09	407-57	3/4″ x 2″	.09
407-57R	1 3/8″ x 2 1/2″	.09	407-57U	1″ x 3 1/2″	.09

SPRAGUE Electrolytic Capacitors

TYPE 601D EXTRALYTIC® ALUMINUM ELECTROLYTIC CAPACITORS

Supplement Type 600D Extralytic capacitors with larger case sizes and higher capacitance values. Unique new electrolyte, high-gain etched foil, and improved oxide system for long life with superior electrical characteristics. Designed to operate at a temperature range of −55° C to +85° C. Pressure-sensitive safety vent. Tolerance: −10, +75% thru 50 WVDC; −10, +50%, 75 WVDC up.



5 WVDC; 7 V SURGE

Sprague Number	Cap., µF	Size *
601D757G005FE4	750	A
601D128G005GE4	1200	G
601D158G005FJ4	1500	B
601D178G005HE4	1700	M
601D238G005FL4	2300	C
601D248G005GJ4	2400	H
601D278G005FP4	2700	D
601D358G005FS4	3500	E
601D368G005GL4	3600	I
601D428G005FT4	4200	F
601D438G005GP4	4300	J
601D478G005JJ4	4700	T
601D528G005HL4	5200	O
601D558G005GS4	5500	K
601D618G005HP4	6100	P
601D678G005GT4	6700	L
601D718G005JL4	7100	U
601D798G005HS4	7900	Q
601D838G005JP4	8300	V
601D968G005HT4	9600	R
601D109G005JS4	10000	W
601D139G005JT4	13000	X

7.5 WVDC; 10 V SURGE

601D657G7R5FE4	650	A
601D108G7R5GE4	1000	G
601D138G7R5FJ4	1300	B
601D148G7R5HE4	1400	M
601D198G7R5FL4	1900	C
601D208G7R5GJ4	2000	H
601D228G7R5FP4	2200	D
601D298G7R5FS4	2900	E
601D308G7R5GL4	3000	I
601D358G7R5FT4	3500	F
601D368G7R5GP4	3600	J
601D408G7R5JJ4	4000	T
601D448G7R5HL4	4400	O
601D468G7R5GS4	4600	K
601D518G7R5HP4	5100	P
601D568G7R5GT4	5600	L
601D608G7R5JL4	6000	U
601D668G7R5HS4	6600	Q
601D708G7R5JP4	7000	V
601D818G7R5HT4	8100	R
601D908G7R5JS4	9000	W
601D119G7R5JT4	11000	X

10 WVDC; 15 V SURGE

601D547G010FE4	540	A
601D857G010GE4	850	G
601D108G010FJ4	1000	B
601D128G010HE4	1200	M
601D168G010FL4	1600	C
601D178G010GJ4	1700	H
601D188G010FP4	1800	D
601D248G010FS4	2400	E
601D258G010GL4	2500	I
601D298G010FT4	2900	F
601D308G010GP4	3000	J
601D338G010JJ4	3300	T
601D368G010HL4	3600	O
601D388G010GS4	3800	K
601D428G010HP4	4200	P
601D478G010GT4	4700	L
601D508G010JL4	5000	U
601D558G010HS4	5500	Q
601D588G010JP4	5800	V
601D678G010HT4	6700	R
601D758G010JS4	7500	W
601D918G010JT4	9100	X

15 WVDC; 20 V SURGE

Sprague Number	Cap., µF	Size *
601D407G015FE4	400	A
601D657G015GE4	650	G
601D807G015FJ4	800	B
601D937G015HE4	930	M
601D128G015FL4	1200	C
601D138G015GJ4	1300	H
601D148G015FP4	1400	D
601D188G015FS4	1800	E
601D198G015GL4	1900	I
601D228G015FT4	2200	F
601D258G015JJ4	2500	T
601D278G015HL4	2700	O
601D298G015GS4	2900	K
601D328G015HP4	3200	P
601D358G015GT4	3500	L
601D388G015JL4	3800	U
601D428G015HS4	4200	Q
601D448G015JP4	4400	V
601D518G015HT4	5100	R
601D578G015JS4	5700	W
601D698G015JT4	6900	X

20 WVDC; 30 V SURGE

601D297G020FE4	290	A
601D467G020GE4	460	G
601D587G020FJ4	580	B
601D667G020HE4	660	M
601D907G020GJ4	900	H
601D108G020FP4	1000	D
601D138G020FS4	1300	E
601D168G020FT4	1600	F
601D188G020JJ4	1800	T
601D198G020HL4	1900	O
601D208G020GS4	2000	K
601D238G020HP4	2300	P
601D258G020GT4	2500	L
601D278G020JL4	2700	U
601D298G020HS4	2900	Q
601D318G020JP4	3100	V
601D368G020HT4	3600	R
601D408G020JS4	4000	W
601D498G020JT4	4900	X

25 WVDC; 40 V SURGE

601D227G025FE4	220	A
601D357G025GE4	350	G
601D447G025FJ4	440	B
601D507G025HE4	500	M
601D667G025FL4	660	C
601D687G025JE4	680	S
601D707G025GJ4	700	H
601D777G025FP4	770	D
601D997G025FS4	990	E
601D108G025GL4	1000	I
601D128G025FT4	1200	F
601D138G025JJ4	1300	T
601D158G025GS4	1500	K
601D178G025HP4	1700	P
601D198G025GT4	1900	L
601D208G025JL4	2000	U
601D228G025HS4	2200	Q
601D238G025JP4	2300	V
601D278G025HT4	2700	R
601D308G025JS4	3000	W
601D378G025JT4	3700	X

30 WVDC; 45 V SURGE

Sprague Number	Cap., µF	Size *
601D197G030FE4	190	A
601D317G030GE4	310	G
601D397G030FJ4	390	B
601D447G030HE4	440	M
601D587G030FL4	580	C
601D607G030JE4	600	S
601D627G030GJ4	620	H
601D687G030FP4	680	D
601D877G030FS4	870	E
601D887G030HJ4	880	N
601D937G030GL4	930	I
601D108G030FT4	1000	F
601D128G030JJ4	1200	T
601D148G030GS4	1400	K
601D158G030HP4	1500	P
601D178G030GT4	1700	L
601D188G030JL4	1800	U
601D208G030HS4	2000	Q
601D218G030JP4	2100	V
601D248G030HT4	2400	R
601D278G030JS4	2700	W
601D338G030JT4	3300	X

40 WVDC; 60 V SURGE

601D147G040FE4	140	A
601D227G040GE4	220	G
601D277G040FJ4	270	B
601D307G040HE4	300	M
601D407G040FL4	400	C
601D437G040JE4	430	S
601D447G040GJ4	440	H
601D487G040FP4	480	D
601D627G040FS4	620	E
601D637G040HJ4	630	N
601D667G040GL4	660	I
601D767G040FT4	760	F
601D777G040GP4	770	J
601D867G040JJ4	860	T
601D957G040HL4	950	O
601D108G040GS4	1000	K
601D118G040HP4	1100	P
601D128G040GT4	1200	L
601D148G040HS4	1400	Q
601D158G040JP4	1500	V
601D178G040HT4	1700	R
601D198G040JS4	1900	W
601D238G040JT4	2300	X

50 WVDC; 75 V SURGE

601D117G050FE4	110	A
601D177G050GE4	170	G
601D227G050FJ4	220	B
601D257G050HE4	250	M
601D337G050FL4	330	C
601D347G050JE4	340	S
601D357G050GJ4	350	H
601D387G050FP4	380	D
601D507G050FS4	500	E
601D607G050FT4	600	F
601D687G050JJ4	680	T
601D757G050HL4	750	O
601D797G050GS4	790	K
601D877G050HP4	870	P
601D957G050GT4	950	L
601D108G050JL4	1000	U
601D118G050HS4	1100	Q
601D158G050JS4	1500	W
601D188G050JT4	1800	X

75 WVDC; 100 V SURGE

Sprague Number	Cap., µF	Siz *
601D456F075FE4	45	A
601D756F075GE4	75	G
601D956F075FJ4	95	B
601D107F075HE4	100	M
601D147F075FL4	140	C
601D157F075GJ4	150	H
601D167F075FP4	160	D
601D217F075FS4	210	E
601D227F075GL4	220	I
601D267F075FT4	260	F
601D297F075JJ4	290	T
601D327F075HL4	320	O
601D347F075GS4	340	K
601D387F075HP4	380	P
601D407F075GT4	400	L
601D447F075JL4	440	U
601D497F075HS4	490	Q
601D507F075JP4	500	V
601D607F075HT4	600	R
601D667F075JS4	660	W
601D807F075JT4	800	X

100 WVDC; 150 V SURG

601D256F100FE4	25	A
601D456F100GE4	45	G
601D556F100FJ4	55	B
601D656F100HE4	65	M
601D806F100FL4	80	C
601D906F100GJ4	90	H
601D956F100FP4	95	D
601D127F100FS4	120	E
601D137F100GL4	130	I
601D157F100FT4	150	F
601D187F100JJ4	180	T
601D207F100GS4	200	K
601D237F100HP4	230	P
601D257F100GT4	250	L
601D287F100JL4	280	U
601D307F100HS4	300	Q
601D327F100JP4	320	V
601D377F100HT4	370	R
601D427F100JS4	420	W
601D507F100JT4	500	X

150 WVDC; 200 V SURG

601D186F150FE4	18	A
601D306F150GE4	30	G
601D356F150FJ4	35	B
601D456F150HE4	45	M
601D556F150FL4	55	C
601D606F150GJ4	60	H
601D656F150FP4	65	D
601D856F150FS4	85	E
601D906F150HJ4	90	N
601D956F150GL4	95	I
601D107F150FT4	100	F
601D137F150JJ4	130	T
601D147F150GS4	140	K
601D167F150HP4	160	P
601D177F150GT4	170	L
601D197F150JL4	190	U
601D217F150HS4	210	Q
601D237F150JP4	230	V
601D267F150HT4	260	R
601D297F150JS4	290	W
601D367F150JT4	360	X

200 WVDC; 250 V SURG

601D166F200FE4	16	A
601D256F200GE4	25	G
601D306F200FJ4	30	B
601D356F200HE4	35	M
601D456F200FL4	45	C
601D506F200GJ4	50	H
601D556F200FP4	55	D
601D706F200FS4	70	E
601D756F200GL4	75	I
601D856F200FT4	85	F
601D906F200GP4	90	J
601D107F200GS4	100	K
601D117F200HL4	110	O
601D137F200HP4	130	P
601D147F200GT4	140	L
601D167F200JL4	160	U
601D177F200HS4	170	Q
601D187F200JP4	180	V
601D217F200HT4	210	R
601D247F200JS4	240	W
601D297F200JT4	290	X

TYPE 601D OEM INDUSTRIAL PRICING

Prices shown are for sleeved units as listed in tables, above. For bare can version, change last digit of Sprague Number to **0** (e.g., 601D757G005FE**0**), and deduct amount shown per last line of this table.

* Size	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499	500-999	* Size	Net Each, Lots of 1-9	10-24	25-49	50-99	100-499	500-999
A	$3.10	$2.32	$1.555	$1.357	$0.974	$0.892	M	$3.48	$2.59	$1.735	$1.507	$1.084	$1.002
B	3.30	2.47	1.655	1.447	1.034	.952	N	3.82	2.86	1.915	1.677	1.204	1.102
C	3.46	2.59	1.735	1.507	1.084	1.002	O	4.14	3.10	2.075	1.817	1.304	1.192
D	3.62	2.71	1.815	1.587	1.134	1.042	P	4.50	3.37	2.255	1.967	1.414	1.302
E	3.82	2.86	1.915	1.677	1.204	1.102	Q	4.82	3.61	2.415	2.107	1.514	1.392
F	3.98	2.98	1.995	1.747	1.254	1.152	R	5.18	3.88	2.595	2.267	1.624	1.492
G	3.30	2.47	1.655	1.447	1.034	.952	S	3.74	2.80	1.875	1.627	1.174	1.082
H	3.50	2.62	1.755	1.537	1.104	1.012	T	4.14	3.10	2.075	1.817	1.304	1.192
I	3.78	2.83	1.895	1.657	1.184	1.092	U	4.58	3.43	2.295	2.017	1.434	1.322
J	4.02	3.01	2.015	1.757	1.264	1.162	V	4.94	3.70	2.475	2.167	1.554	1.422
K	4.22	3.16	2.115	1.847	1.324	1.222	W	5.46	4.09	2.735	2.387	1.714	1.572
L	4.50	3.37	2.255	1.967	1.414	1.302	X	5.90	4.42	2.955	2.587	1.854	1.702
For bare case versions, deduct these amounts from price of sleeved equivalent as listed..................								.06	.04	.035	.027	.024	.022

***Size (Dia. x Lg., In.):** Sleeved Units: **A**, .687 x 1.250; **B**, .687 x 1.750; **C**, .687 x 2.250; **D**, .687 x 2.750; **E**, .687 x 3.250; **F**, .687 x 3.75 **G**, .812 x 1.250; **H**, .812 x 1.750; **I**, .812 x 2.250; **J**, .812 x 2.750; **K**, .812 x 3.250; **L**, .812 x 3.750; **M**, .937 x 1.250; **N**, .937 x 1.750; .937 x 2.250; **P**, .937 x 2.750; **Q**, .937 x 3.250; **R**, .937 x 3.750; **S**, 1.062 x 1.250; **T**, 1.062 x 1.750; **U**, 1.062 x 2.250; **V**, 1.062 x 2.75 **W**, 1.062 x 3.250; **X**, 1.062 x 3.750. For Bare Units: Subtract .062 dia. x .125″ lg. from sleeved sizes.

SPRAGUE TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS

Small, dependable dry electrolytic. Low leakage; long shelf life. Withstands high temp. (85° C); high ripple currents and high surge voltages. Metal case with thermoplastic outer insulating sleeve except as noted.

POLARIZED SINGLE UNITS

Sprague No. TVA-	μF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of			
				1-24	25-49	50 Up	100-249*
1081	1	3	¼ x 17/32	$0.57	$0.388	$0.311	$0.233
1081.1	2	3	¼ x 17/32	.57	.388	.311	.233
1081.2	3	3	¼ x 17/32	.57	.388	.311	.233
1081.3	4	3	¼ x 17/32	.57	.388	.311	.233
1081.4	5	3	¼ x 17/32	.57	.388	.311	.233
1081.5	6	3	¼ x 17/32	.57	.388	.311	.233
1081.6	8	3	¼ x 17/32	.57	.388	.311	.233
1082	10	3	¼ x 17/32	.57	.388	.311	.233
1082.5	15	3	¼ x 17/32	.57	.388	.311	.233
1083	20	3	¼ x 17/32	.57	.388	.311	.233
1084	25	3	¼ x 17/32	.57	.388	.311	.233
1084.5	30	3	¼ x 17/32	.57	.388	.311	.233
1085	50	3	¼ x 23/32	.57	.388	.311	.233
1085.5	65	3	¼ x 23/32	.57	.388	.311	.233
1088	75	3	5/16 x 23/32	.63	.439	.351	.263
1089	100	3	5/16 x 23/32	.63	.439	.351	.263
1089.5	130	3	5/16 x 23/32	.63	.439	.351	.263
1090	150	3	5/16 x 27/32	.81	.551	.44	.33
1091	200	3	5/16 x 27/32	.69	.479	.382	.287
1091.5	250	3	⅜ x 27/32	.84	.575	.46	.346
1092	300	3	⅜ x 27/32	.84	.575	.46	.346
1093	400	3	⅜ x 31/32	.87	.60	.48	.36
1094	500	3	⅜ x 1 9/32	.84	.583	.466	.35
1095	600	3	⅜ x 1 9/32	.90	.625	.50	.376
1097	750	3	⅜ x 1 17/32	.93	.739	.646	.486
1097.1	800	3	⅜ x 1 17/32	.96	.651	.52	.39
1097.2	900	3	7/16 x 1 9/32	.99	.688	.551	.413
1097.3	1000	3	7/16 x 1 17/32	1.02	.703	.562	.421
1097.4	1200	3	7/16 x 1 17/32	1.08	.745	.596	.447
1097.5	1500	3	½ x 1 17/32	1.08	.745	.596	.447
1097.6	1800	3	½ x 1 17/32	1.14	.788	.631	.473
1097.7	2000	3	½ x 1 17/32	1.14	.788	.631	.473
1097.8	2200	3	½ x 1 13/16	1.17	.813	.651	.488
1097.9	2500	3	½ x 1 13/16	1.17	.813	.651	.488
1098	3000	3	¾ x 1 21/32	1.41	.731	.584	.438
1099	4000	3	13/16 x 1 21/32	1.68	.875	.70	.526
1099.1	5000	3	13/16 x 1 29/32	1.62	1.125	.90	.676
1099.6	10000	3	15/16 x 2 5/32	2.07	1.433	1.146	.86
1099.80	1	6	¼ x 17/32	.57	.388	.311	.233
1099.81	2	6	¼ x 17/32	.57	.388	.311	.233
1099.82	3	6	¼ x 17/32	.57	.388	.311	.233
1099.83	4	6	¼ x 17/32	.57	.388	.311	.233
1099.84	5	6	¼ x 17/32	.57	.388	.311	.233
1099.85	6	6	¼ x 17/32	.57	.388	.311	.233
1099.86	8	6	¼ x 17/32	.57	.388	.311	.233
1099.87	10	6	¼ x 17/32	.57	.388	.311	.233
1099.89	15	6	¼ x 17/32	.57	.388	.311	.233
1099.90	20	6	¼ x 17/32	.57	.388	.311	.233
1099.91	25	6	¼ x 23/32	.57	.388	.311	.233
1099.93	35	6	¼ x 23/32	.57	.388	.311	.233
1100	50	6	¼ x 23/32	.57	.453	.362	.272
1100.5	75	6	5/16 x 23/32	.63	.439	.351	.263
1100.6	90	6	5/16 x 23/32	.63	.439	.351	.263
1101	100	6	5/16 x 27/32	.72	.555	.444	.333
1101.2	140	6	5/16 x 27/32	.81	.551	.44	.33
1101.5	150	6	⅜ x 27/32	.84	.575	.46	.346
1101.7	200	6	⅜ x 27/32	.84	.575	.46	.346
1102	250	6	⅜ x 31/32	.81	.644	.564	.423
1102.1	300	6	⅜ x 31/32	.87	.60	.48	.36
1102.3	400	6	⅜ x 1 9/32	.90	.625	.50	.376
1103	500	6	⅜ x 1 17/32	.93	.737	.644	.483
1103.2	600	6	⅜ x 1 17/32	.96	.651	.52	.39
1103.4	700	6	7/16 x 1 9/32	.96	.651	.52	.39
1103.8	800	6	7/16 x 1 17/32	1.08	.751	.60	.45
1103.9	950	6	7/16 x 1 17/32	1.08	.751	.60	.45
1104	1000	6	½ x 1 9/32	1.14	.904	.791	.593
1104.1	1200	6	½ x 1 17/32	1.08	.788	.631	.473
1105	1500	6	½ x 1 17/32	1.26	.995	.866	.65
1105.1	1800	6	½ x 1 25/32	1.08	.788	.631	.473
1106	2000	6	½ x 1 25/32	1.38	1.095	.958	.719
1106.5	2500	6	¾ x 1 21/32	1.50	.783	.626	.47
1107	3000	6	¾ x 1 29/32	1.62	.845	.676	.507
1108	4000	6	⅞ x 1 29/32	1.86	.971	.776	.582
1109	5000	6	⅞ x 1 29/32	1.65	1.148	.918	.689
1115	10000	6	1 x 2 13/32	2.40	1.663	1.331	.998
1128	1000	10	½ x 1 13/16	1.23	.975	.852	.639
1129.2	3000	10	⅞ x 1 21/32	2.10	1.46	1.168	.876
1129.4	4000	10	⅞ x 1 29/32	2.52	1.751	1.40	1.05
1129.5	5000	10	1 x 2 5/32	3.00	2.085	1.668	1.251
1129.8	10000	10	1⅛ x 2 11/16	4.05	2.813	2.251	1.688
1129.80	1	12	¼ x 17/32	.57	.388	.311	.233
1129.81	2	12	¼ x 17/32	.57	.388	.311	.233
1129.82	3	12	¼ x 17/32	.57	.388	.311	.233
1129.83	4	12	¼ x 17/32	.57	.388	.311	.233
1129.84	5	12	¼ x 17/32	.57	.388	.311	.233
1129.85	6	12	¼ x 17/32	.57	.388	.311	.233
1129.86	8	12	¼ x 17/32	.57	.388	.311	.233
1129.87	10	12	¼ x 17/32	.57	.388	.311	.233
1129.89	15	12	¼ x 17/32	.57	.388	.311	.233
1129.90	20	12	¼ x 23/32	.57	.388	.311	.233
1129.91	25	12	¼ x 23/32	.57	.388	.311	.233
1129.92	30	12	¼ x 23/32	.57	.388	.311	.233
1129.94	50	12	5/16 x 23/32	.63	.439	.351	.263
1129.95	60	12	5/16 x 23/32	.63	.439	.351	.263
1129.96	75	12	5/16 x 27/32	$0.81	$0.551	$0.44	$0.33
1129.97	90	12	⅜ x 23/32	.81	.563	.451	.338
1130	100	12	5/16 x 23/32	.72	.568	.454	.341
1130.2	140	12	⅜ x 27/32	.84	.575	.46	.346
1130.3	150	12	⅜ x 31/32	.87	.60	.48	.36
1130.5	190	12	⅜ x 31/32	.87	.60	.48	.36
1130.6	200	12	⅜ x 1 9/32	.90	.625	.50	.376
1131	250	12	⅜ x 1 9/32	.87	.689	.602	.452
1131.1	290	12	⅜ x 1 9/32	.90	.625	.50	.376
1131.2	390	12	⅜ x 1 17/32	.96	.651	.52	.39
1131.3	400	12	7/16 x 1 9/32	.99	.688	.551	.413
1131.5	450	12	7/16 x 1 9/32	.99	.688	.551	.413
1132	500	12	7/16 x 1 17/32	1.02	.805	.70	.526
1132.2	600	12	7/16 x 1 17/32	1.08	.74	.592	.444
1132.4	800	12	½ x 1 9/16	1.14	.788	.631	.473
1132.5	900	12	½ x 1 13/16	1.38	.959	.766	.576
1133	1000	12	½ x 1 13/16	1.35	1.069	.934	.701
1133.4	1200	12	½ x 1 13/16	1.20	.82	.656	.492
1133.5	1500	12	¾ x 1 21/32	1.53	.799	.638	.479
1134	2000	12	⅞ x 1 21/32	1.71	.891	.712	.534
1134.5	2500	12	⅞ x 1 21/32	1.83	.953	.762	.572
1135	3000	12	⅞ x 2 5/32	1.95	1.015	.812	.609
1136	4000	12	15/16 x 2 5/32	2.31	1.203	.962	.723
1136.1	5000	12	1 x 2 13/32	2.40	1.663	1.331	.998
1137	10000	12	1¼ x 2 11/16	3.15	2.188	1.751	1.313
1140	1	16	¼ x 17/32	.57	.388	.311	.233
1141	2	16	¼ x 17/32	.57	.388	.311	.233
1142	3	16	¼ x 17/32	.57	.388	.311	.233
1143	4	16	¼ x 17/32	.57	.388	.311	.233
1144	5	16	¼ x 17/32	.57	.388	.311	.233
1144.1	6	16	¼ x 17/32	.57	.388	.311	.233
1144.2	8	16	¼ x 17/32	.57	.388	.311	.233
1145	10	16	¼ x 17/32	.57	.388	.311	.233
1146	15	16	¼ x 23/32	.57	.388	.311	.233
1147	20	16	¼ x 23/32	.57	.388	.311	.233
1148	25	16	¼ x 23/32	.57	.388	.311	.233
1149	30	16	5/16 x 23/32	.63	.439	.351	.263
1149.1	35	16	5/16 x 23/32	.63	.439	.351	.263
1150	50	16	5/16 x 23/32	.63	.439	.351	.263
1151	75	16	5/16 x 27/32	.81	.551	.44	.33
1152	85	16	⅜ x 23/32	.81	.563	.451	.338
1153	90	16	5/16 x 27/32	.84	.575	.46	.346
1160	100	16	⅜ x 27/32	.75	.575	.46	.346
1160.2	130	16	⅜ x 27/32	.84	.575	.46	.346
1160.3	150	16	⅜ x 31/32	.81	.563	.451	.338
1160.4	175	16	⅜ x 31/32	.84	.583	.466	.35
1160.5	180	16	⅜ x 31/32	.87	.60	.48	.36
1160.6	200	16	⅜ x 1 9/32	.84	.583	.466	.35
1161	250	16	⅜ x 1 9/32	.93	.741	.652	.489
1161.1	300	16	⅜ x 1 17/32	.96	.651	.52	.39
1161.2	350	16	⅜ x 1 17/32	.96	.651	.52	.39
1161.5	400	16	7/16 x 1 9/32	1.02	.708	.566	.426
1161.6	450	16	7/16 x 1 17/32	1.02	.703	.562	.422
1162	500	16	7/16 x 1 17/32	1.05	.833	.731	.548
1162.2	600	16	7/16 x 1 17/32	1.08	.74	.592	.444
1162.3	800	16	½ x 1 9/16	1.14	.788	.631	.473
1163	1000	16	½ x 1 13/16	1.38	1.091	.951	.713
1164	1200	16	½ x 1 13/16	1.50	1.043	.834	.626
1175.2	1500	16	13/16 x 1 21/32	1.65	1.145	.916	.858
1170*	2000	16	13/16 x 1 21/32	1.92	1.431	1.144	.687
1175.3	2500	16	⅞ x 1 29/32	1.92	1.00	.80	.60
1175	3000	16	⅞ x 1 29/32	1.02	.793	.68	.51
1175.4	4000	16	15/16 x 2 5/32	2.10	1.459	1.166	.876
1175.5	5000	16	1 x 2 5/32	2.55	1.773	1.418	1.064
1175.6	6000	16	1⅛ x 2 5/32	2.40	1.663	1.331	.998
1175.7	8000	16	1⅛ x 2 11/16	2.67	1.853	1.482	1.112
1175.8	10000	16	1¼ x 2 11/16	3.60	2.50	2.00	1.50
1175.11	15000	16	1¼ x 3 11/16	4.53	3.139	2.511	1.883
1175.13	20000	16	1⅜ x 4 5/32	5.22	3.611	2.888	2.166
1180	150	20	⅜ x 31/32	.84	.583	.466	.35
1190	1500	20	⅞ x 1 21/32	2.25	1.793	1.576	1.35
1194	2300	20	1 x 1 21/32	2.40	1.668	1.334	1.001
1200	1	25	¼ x 17/32	.57	.388	.311	.233
1201	2	25	¼ x 17/32	.54	.425	.346	.26
1201.1	3	25	¼ x 17/32	.57	.388	.311	.233
1202	4	25	¼ x 17/32	.57	.388	.311	.233
1203	5	25	¼ x 17/32	.60	.459	.366	.276
1203.1	6	25	¼ x 17/32	.57	.388	.311	.233
1203.3	8	25	¼ x 17/32	.57	.388	.311	.233
1204	10	25	¼ x 23/32	.60	.468	.374	.281
1204.2	15	25	¼ x 23/32	.57	.388	.311	.233
1204.5	20	25	5/16 x 23/32	.60	.479	.382	.287
1205	25	25	5/16 x 23/32	.60	.461	.391	.293
1205.1	30	25	5/16 x 23/32	.63	.439	.351	.263
1205.2	35	25	5/16 x 23/32	.63	.439	.351	.263
1205.7	40	25	5/16 x 27/32	.81	.631	.54	.406
1206	50	25	5/16 x 27/32	.66	.52	.416	.312
1206.1	75	25	⅜ x 27/32	.84	.575	.46	.346
1207	100	25	⅜ x 31/32	.81	.635	.508	.381
1207.5	150	25	⅜ x 1 9/32	.87	.693	.554	.416
1207.7	200	25	⅜ x 1 17/32	.96	.651	.52	.39
1208	250	25	7/16 x 1 9/32	1.02	.804	.698	.524
1208.5	300	25	7/16 x 1 17/32	1.08	.751	.60	.45
1208.6	350	25	7/16 x 1 17/32	1.02	.703	.562	.421
1208.7	400	25	½ x 1 5/16	1.23	.973	.848	.636
1208.8	450	25	½ x 1 9/16	1.08	.748	.598	.449
1209	500	25	½ x 1 9/16	1.38	1.091	.951	.713
1209.2	600	25	½ x 1 13/16	1.20	.835	.668	.501
1209.4	800	25	¾ x 1 21/32	1.32	.913	.731	.548
1211	1000	25	13/16 x 1 21/32	2.37	1.391	.951	.87
1212	1500	25	⅞ x 1 29/32	2.55	1.771	1.416	1.062
1213	2000	25	1 x 1 29/32	2.94	2.043	1.634	1.226

1–99, Kleer-Pak; 100 Up Bulk-Pack. 250 Up Bulk-Pack prices on request. *Mounting strap attached.

TYPE TVA ATOM® ELECTROLYTICS CONTINUED ON NEXT PAGE

TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS (CONT'D)

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	μF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50 Up	100-249*
1213.5	2500	25	1 x 1 29/32	$3.03	$1.579	$1.262	$0.947
1214†	3000	25	1 x 2 5/32	2.16	1.721	1.514	1.426
1214.2	4000	25	1 1/8 x 2 11/16	3.15	2.188	1.751	1.313
1214.5	5000	25	1 1/8 x 2 11/16	3.45	2.395	1.916	1.437
1214.8	8000	25	1 1/4 x 3 11/16	4.53	3.139	2.511	1.883
1214.10	10000	25	1 3/8 x 3 11/16	4.65	3.22	2.576	1.932
1222†	900	30	7/8 x 1 21/32	1.98	1.54	1.32	.99
1222.1	1000	30	15/16 x 1 29/32	2.10	1.633	1.40	1.05
1223	200	35	7/16 x 1 17/32	.96	.763	.668	.501
1225	300	35	1/2 x 1 9/16	1.14	.791	.632	.474
1227	500	35	1/2 x 1 13/16	1.44	1.133	.984	.738
1229	5500	35	1 x 3 13/32	5.40	3.751	3.00	2.25
1300	1	50	1/4 x 17/32	.54	.425	.346	.26
1301	2	50	1/4 x 17/32	.54	.425	.346	.26
1302	3	50	1/4 x 17/32	.60	.453	.362	.272
1302.7	4	50	1/4 x 17/32	.60	.415	.332	.249
1303	5	50	1/4 x 23/32	.60	.459	.366	.276
1303.1	6	50	1/4 x 23/32	.57	.388	.311	.233
1303.2	8	50	1/4 x 23/32	.57	.388	.311	.233
1304	10	50	5/16 x 23/32	.60	.468	.374	.281
1305	15	50	5/16 x 23/32	.60	.475	.38	.286
1305.5	20	50	5/16 x 27/32	.60	.479	.382	.287
1306	25	50	5/16 x 27/32	.63	.488	.391	.293
1306.2	35	50	3/8 x 27/32	.84	.575	.46	.346
1306.5	40	50	3/8 x 31/32	.69	.545	.436	.327
1308	50	50	3/8 x 31/32	.72	.571	.456	.342
1309.3	60	50	3/8 x 1 9/32	.72	.50	.40	.30
1309.4	75	50	3/8 x 1 9/32	.90	.625	.50	.376
1310	100	50	3/8 x 1 17/32	.84	.66	.528	.396
1310.1	120	50	7/16 x 1 9/32	.96	.651	.52	.39
1310.2	125	50	7/16 x 1 17/32	.84	.583	.466	.35
1311	150	50	7/16 x 1 17/32	.93	.728	.582	.437
1311.5	200	50	1/2 x 1 5/16	1.02	.703	.562	.422
1312	250	50	1/2 x 1 5/16	1.05	.835	.732	.549
1312.1	300	50	1/2 x 1 9/16	1.14	.788	.631	.473
1312.2	350	50	1/2 x 1 13/16	1.14	.788	.631	.473
1313	400	50	1/2 x 1 13/16	1.20	.82	.656	.492
1315	500	50	3/4 x 1 21/32	1.44	1.133	.984	.738
1315.2	600	50	13/16 x 1 21/32	1.47	1.003	.802	.602
1315.4	800	50	7/8 x 1 21/32	1.59	1.095	.876	.657
1316	1000	50	15/16 x 1 29/32	2.34	1.821	1.56	1.17
1318	1500	50	15/16 x 2 5/32	2.28	1.015	.812	.609
1318.2	2000	50	1 1/8 x 2 5/32	3.45	2.399	1.918	1.439
1318.3	2500	50	1 1/8 x 2 11/16	2.67	1.853	1.482	1.112
1318.4	3000	50	1 1/4 x 2 11/16	3.72	2.585	2.068	1.551
1318.5	4000	50	1 1/4 x 3 5/32	4.05	2.813	2.251	1.688
1318.7	5000	50	1 3/8 x 3 1/8	4.20	2.919	2.334	1.751
1318.10	8000	50	1 3/8 x 4 5/32	5.22	3.611	2.888	2.166
1319	250	60	1/2 x 1 9/16	1.05	.835	.732	.549
1319.5	500	75	1 x 2 21/32	1.80	1.251	1.00	.75
1319.7	1000	75	1 x 2 21/32	3.75	2.603	2.082	1.562
1319.8†	1500	75	1 x 3 21/32	3.60	2.80	2.40	1.80
1319.9	2000	75	1 3/8 x 2 3/8	5.25	3.645	2.916	2.187
1320	10	90	3/8 x 27/32	.63	.475	.38	.286
1321	16	90	3/8 x 31/32	.69	.479	.382	.287
1330	1	100	1/4 x 17/32	.57	.395	.316	.237
1331	2	100	1/4 x 23/32	.63	.439	.351	.263
1332	3	100	5/16 x 23/32	.72	.488	.391	.293
1333	4	100	5/16 x 23/32	.72	.488	.391	.293
1334	5	100	5/16 x 27/32	.81	.551	.44	.33
1335	6	100	5/16 x 27/32	.81	.551	.44	.33
1336	8	100	3/8 x 27/32	.84	.575	.46	.346
1337	10	100	3/8 x 27/32	.84	.575	.46	.346
1338	15	100	3/8 x 31/32	.87	.60	.48	.36
1339	20	100	3/8 x 1 9/32	.90	.625	.50	.376
1340	25	100	3/8 x 1 17/32	.96	.651	.52	.39
1341	30	100	3/8 x 1 17/32	.96	.651	.52	.39
1342	40	100	7/16 x 1 17/32	1.02	.703	.562	.421
1343	50	100	1/2 x 1 9/16	1.05	.725	.58	.436
1344	60	100	1/2 x 1 9/16	1.08	.74	.592	.444
1345	75	100	1/2 x 1 13/16	1.20	.835	.668	.501
1345.2	85	100	3/4 x 1 13/32	1.26	.875	.70	.526
1346	100	100	3/4 x 1 13/32	1.26	.875	.70	.526
1347	150	100	13/16 x 1 21/32	1.47	1.003	.802	.602
1348	200	100	7/8 x 1 29/32	1.65	1.148	.918	.689
1349	250	100	7/8 x 1 29/32	1.65	1.148	.918	.689
1350	300	100	1 x 1 29/32	1.95	1.348	1.078	.809
1375	400	100	1 x 2 5/32	1.80	1.251	1.00	.75
1376	500	100	1 1/8 x 2 5/32	2.40	1.663	1.331	.998
1377	600	100	1 1/8 x 2 11/16	2.70	1.875	1.50	1.126
1379	800	100	1 1/8 x 2 11/16	2.67	1.853	1.482	1.112
1380	1000	100	1 1/4 x 2 11/16	3.15	2.188	1.751	1.313
1382	1500	100	1 1/4 x 3 11/16	4.35	3.02	2.416	1.812
1384	2000	100	1 3/8 x 4 5/32	5.70	3.959	3.166	2.376
1400	1	150	1/4 x 17/32	.57	.451	.36	.27
1400.1	2	150	1/4 x 23/32	.63	.439	.351	.263
1400.2	3	150	5/16 x 23/32	.72	.488	.391	.293
1402	4	150	5/16 x 27/32	.60	.471	.376	.282
1403	5	150	5/16 x 27/32	.60	.475	.38	.286
1403.1	6	150	3/8 x 27/32	.84	.575	.46	.346
1403.2	7	150	3/8 x 27/32	.84	.575	.46	.346
1405	8	150	3/8 x 27/32	.63	.493	.394	.296
1406	10	150	3/8 x 31/32	.63	.483	.406	.306
1407	12	150	3/8 x 1 9/32	.66	.519	.414	.311
1408	15	150	3/8 x 1 9/32	.90	.625	.50	.376
1409	16	150	3/8 x 1 17/32	.69	.543	.434	.326
1410	20	150	3/8 x 1 17/32	.72	.555	.444	.333
1411	25	150	7/16 x 1 9/32	.75	.588	.471	.353
1412	30	150	7/16 x 1 17/32	.78	.611	.488	.366
1412.1	35	150	1/2 x 1 17/32	1.08	.745	.596	.447
1413	40	150	1/2 x 1 17/32	.81	.643	.514	.386

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	μF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50 Up	100-249*
1414	50	150	1/2 x 1 13/16	$0.84	$0.663	$0.531	$0.398
1415	60	150	13/16 x 1 13/32	.90	.70	.56	.42
1416	75	150	7/8 x 1 13/32	1.35	.925	.74	.556
1418	80	150	7/8 x 1 13/32	.96	.76	.608	.456
1418.1	85	150	7/8 x 1 21/32	1.44	.999	.798	.599
1420	100	150	7/8 x 1 21/32	1.05	.825	.66	.496
1422	150	150	7/8 x 2 5/32	1.14	.903	.722	.542
1422.5	160	150	1 x 1 29/32	1.68	1.165	.932	.699
1423	200	150	1 x 2 5/32	1.32	1.025	.82	.616
1424*	250	150	1 1/8 x 2 5/32	2.16	1.671	1.424	1.068
1425	300	150	1 1/8 x 2 11/16	1.68	1.299	1.106	.83
1426	350	150	1 x 3 5/32	1.89	1.313	1.051	.788
1426.1	400	150	1 1/4 x 2 11/16	2.64	1.835	1.468	1.101
1428	500	150	1 1/4 x 3 5/32	3.15	2.188	1.751	1.313
1429	1000	150	1 3/8 x 4 5/32	4.35	3.02	2.416	1.812
1430	80	175	13/16 x 1 29/32	.99	.76	.608	.456
1434	1	200	1/4 x 23/32	.78	.533	.426	.32
1435	2	200	5/16 x 23/32	.60	.415	.332	.249
1436	3	200	5/16 x 27/32	.81	.548	.438	.329
1437	4	200	3/8 x 27/32	.61	.415	.332	.249
1438	5	200	3/8 x 27/32	.81	.563	.451	.338
1439	6	200	3/8 x 31/32	.84	.583	.466	.35
1440	8	200	3/8 x 1 9/32	.87	.60	.48	.36
1441	10	200	3/8 x 1 9/32	.90	.625	.50	.376
1442	15	200	7/16 x 1 9/32	.99	.688	.551	.413
1442.1	20	200	7/16 x 1 17/32	1.02	.703	.562	.422
1442.2	25	200	1/2 x 1 9/16	1.08	.745	.596	.447
1442.3	30	200	1/2 x 1 13/16	1.11	.76	.608	.456
1442.5	40	200	13/16 x 1 13/32	1.26	.875	.70	.526
1443	50	200	13/16 x 1 21/32	1.38	.945	.756	.567
1443.1	60	200	7/8 x 1 21/32	1.44	.999	.798	.599
1444	75	200	13/16 x 2 5/32	1.56	1.085	.868	.651
1444.2	85	200	7/8 x 1 29/32	1.59	1.095	.876	.657
1445	100	200	7/8 x 2 5/32	1.14	.907	.794	.596
1446	120	200	1 x 1 29/32	1.47	1.02	.816	.612
1447*	150	200	1 x 2 5/32	1.68	1.30	1.12	.84
1480*	200	200	1 1/8 x 2 11/16	1.89	1.471	1.26	.946
1484	500	200	1 1/4 x 3 11/16	4.53	3.139	2.511	1.883
1500	1	250	5/16 x 23/32	.60	.471	.406	.306
1500.1	2	250	3/8 x 23/32	.78	.54	.432	.324
1500.2	3	250	3/8 x 27/32	.81	.553	.442	.332
1501	4	250	3/8 x 31/32	.66	.516	.422	.317
1502	5	250	3/8 x 1 9/32	.75	.535	.428	.321
1502.1	6	250	3/8 x 1 9/32	.87	.599	.478	.359
1503	8	250	3/8 x 1 9/32	.69	.545	.474	.356
1504	10	250	7/16 x 1 9/32	.72	.567	.492	.369
1505	12	250	7/16 x 1 17/32	.75	.587	.506	.38
1506	15	250	1/2 x 1 9/16	.99	.688	.551	.413
1507	16	250	1/2 x 1 9/16	.78	.615	.534	.401
1508	20	250	1/2 x 1 13/16	.81	.645	.566	.426
1509	25	250	3/4 x 1 13/32	1.23	.845	.676	.507
1510	30	250	13/16 x 1 13/32	.87	.691	.604	.453
1511	40	250	7/8 x 1 13/32	.93	.74	.651	.488
1512	50	250	7/8 x 1 21/32	1.02	.812	.712	.534
1513	60	250	7/8 x 1 29/32	1.08	.855	.746	.56
1515	70	250	7/8 x 1 29/32	1.11	.881	.772	.579
1520	75	250	7/8 x 2 5/32	1.14	.791	.632	.474
1521	85	250	7/8 x 2 5/32	1.65	1.148	.918	.689
1522	100	250	1 x 1 29/32	1.47	1.06	.848	.636
1524	125	250	7/8 x 2 5/8	1.59	1.103	.882	.662
1525	150	250	1 1/8 x 2 5/32	2.19	1.515	1.212	.909
1526	160	250	1 x 2 5/32	1.89	1.313	1.051	.788
1528†	200	250	1 1/4 x 2 11/16	2.10	1.493	1.194	.896
1528.2	225	250	1 x 3 5/32	2.10	1.459	1.166	.876
1528.3	250	250	1 x 3 5/32	2.64	1.835	1.468	1.101
1528.5	300	250	1 1/4 x 3 5/32	3.15	2.188	1.751	1.313
1528.7	400	250	1 1/4 x 3 11/16	3.78	2.625	2.10	1.576
1528.8	450	250	1 3/8 x 3 11/16	3.60	2.50	2.00	1.50
1528.9	500	250	1 3/8 x 3 11/16	3.93	2.72	2.176	1.632
1529	600	250	1 3/8 x 4 5/32	4.35	3.02	2.416	1.812
1530	6	275	3/8 x 1 17/32	.66	.459	.366	.276
1540	1	300	5/16 x 23/32	.81	.545	.436	.327
1541	2	300	3/8 x 27/32	.81	.548	.438	.329
1542	3	300	3/8 x 31/32	.81	.56	.448	.336
1543	4	300	3/8 x 1 9/32	.84	.565	.452	.339
1544	5	300	3/8 x 1 9/32	.84	.585	.468	.351
1545	6	300	3/8 x 1 17/32	.90	.62	.496	.372
1546	8	300	7/16 x 1 17/32	.99	.683	.546	.41
1547	10	300	7/16 x 1 17/32	.99	.683	.546	.41
1548	12	300	1/2 x 1 9/16	1.02	.695	.556	.417
1549	15	300	1/2 x 1 9/16	1.08	.751	.60	.45
1550	20	300	1/2 x 1 13/16	1.14	.775	.62	.466
1551	25	300	3/4 x 1 21/32	1.26	.871	.696	.522
1552	30	300	3/4 x 1 29/32	1.29	.891	.712	.534
1553	40	300	13/16 x 1 29/32	1.44	.999	.798	.599
1570	50	300	7/8 x 1 29/32	1.08	.751	.60	.45
1570.1	60	300	7/8 x 2 5/32	1.62	1.125	.90	.676
1571	75	300	1 x 2 5/32	1.86	1.289	1.031	.773
1571.2	85	300	1 x 2 13/32	1.98	1.371	1.096	.822
1573	100	300	1 1/8 x 2 5/32	1.59	.98	.782	.61
1575*†	140	300	1 x 3 5/32	2.19	1.699	1.454	1.091
1576†	150	300	1 1/4 x 2 11/16	1.95	1.50	1.20	.90
1578†	200	300	1 1/4 x 3 5/32	2.70	1.665	1.332	.999
1580	300	300	1 3/8 x 3 11/16	3.84	2.653	2.122	1.592
1582	400	300	1 3/8 x 4 5/32	4.26	2.953	2.362	1.772
1599	1	350	5/16 x 27/32	.81	.551	.44	.33
1600	2	350	3/8 x 27/32	.60	.477	.418	.314
1600.1	3	350	3/8 x 31/32	.81	.563	.451	.338
1601	4	350	3/8 x 1 9/32	.63	.496	.431	.323
1602.5	5	350	3/8 x 1 17/32	.63	.501	.436	.336
1602.6	6	350	3/8 x 1 17/32	.90	.62	.496	.372

*1–99, Kleer-Pak; 100 Up Bulk-Pack. 250 Up Bulk-Pack prices on request. *Mounting strap attached. †Single ended with two 8-inc
flexible leads.

TYPE TVA ATOM® ELECTROLYTICS CONTINUED ON NEXT PAGE

SPRAGUE TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS

TYPE TVA ATOM® ELECTROLYTIC CAPACITORS (CONT'D)

POLARIZED SINGLE UNITS (CONT'D)

Sprague No. TVA-	µF	WV DC	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50 Up	100-249*
1603	8	350	7/16 x 1 17/32	$0.72	$0.565	$0.488	$0.366
1604	10	350	1/2 x 1 9/16	.75	.596	.522	.392
1605	12	350	1/2 x 1 9/16	.78	.616	.536	.402
1607	15	350	1/2 x 1 13/16	.84	.667	.584	.438
1607.1	16	350	3/4 x 1 13/32	1.20	.835	.668	.501
1608	20	350	3/4 x 1 21/32	.87	.688	.60	.45
1609	25	350	3/4 x 1 29/32	1.29	.891	.712	.534
1610	30	350	7/8 x 1 21/32	.99	.756	.682	.512
1611	40	350	7/8 x 1 29/32	1.05	.82	.706	.53
1612	50	350	7/8 x 2 5/32	1.62	1.125	.90	.676
1613	60	350	15/16 x 2 5/32	1.17	.927	.811	.608
1614	75	350	1 x 2 13/32	1.98	1.371	1.096	.822
1615	85	350	1 1/8 x 2 5/32	2.16	1.485	1.188	.891
1620	100	350	1 x 2 21/32	1.86	1.111	.86	.69
1622*	150	350	1 1/4 x 2 11/16	2.22	1.619	1.294	.971
1623	160	350	1 x 3 21/32	2.37	1.645	1.316	.987
1624*	200	350	1 1/4 x 3 5/32	3.12	1.845	1.476	1.107
1627	250	350	1 3/8 x 3 11/16	3.12	2.165	1.732	1.299
1628*	300	350	1 3/8 x 4 5/32	4.20	2.279	1.822	1.367
1640	1	385	3/8 x 27/32	.84	.575	.46	.346
1641	2	385	3/8 x 1 9/32	.63	.439	.351	.263
1643	4	385	7/16 x 1 9/32	.66	.459	.366	.276
1645	1	400	3/8 x 27/32	.84	.575	.46	.346
1646	2	400	3/8 x 1 9/32	.87	.595	.476	.357
1647	3	400	3/8 x 1 17/32	.90	.62	.496	.372
1648	4	400	7/16 x 1 9/32	.96	.659	.526	.396
1649	5	400	7/16 x 1 17/32	.99	.673	.538	.404
1650	6	400	1/2 x 1 5/16	.99	.685	.548	.411
1651	8	400	1/2 x 1 9/16	1.02	.699	.558	.419
1652	10	400	1/2 x 1 13/16	1.08	.748	.598	.449
1653	12	400	1/2 x 1 13/16	1.11	.753	.602	.452
1654	15	400	3/4 x 1 21/32	1.26	.871	.696	.522
1655	16	400	3/4 x 1 21/32	1.26	.871	.696	.522
1656	20	400	3/4 x 1 29/32	1.29	.891	.712	.534
1657	25	400	7/8 x 1 21/32	1.44	.985	.788	.591
1658	30	400	15/16 x 1 21/32	1.59	1.095	.876	.657
1659	40	400	15/16 x 1 29/32	1.65	1.145	.916	.687
1660	50	400	1 x 2 5/32	1.86	1.289	1.031	.773
1661	60	400	1 x 2 13/32	1.98	1.371	1.096	.822
1662	75	400	1 1/8 x 2 5/32	2.16	1.485	1.188	.891
1663	85	400	1 1/8 x 2 11/16	2.31	1.595	1.276	.957
1664	100	400	1 1/4 x 2 11/16	2.55	1.765	1.412	1.059
1665	150	400	1 1/4 x 3 5/32	3.30	2.283	1.826	1.37
1666	200	400	1 1/4 x 3 11/16	3.69	2.56	2.048	1.536
1667	250	400	1 3/8 x 4 5/32	4.26	2.953	2.362	1.772
1700	1	450	3/8 x 27/32	.66	.52	.451	.338
1701	2	450	3/8 x 1 9/32	.66	.525	.458	.344
1701.1	3	450	7/16 x 1 9/32	.99	.679	.542	.407
1702	4	450	7/16 x 1 17/32	.69	.545	.474	.356
1703	5	450	1/2 x 1 5/16	.72	.568	.494	.371
1703.1	6	450	1/2 x 1 9/16	1.02	.703	.562	.421
1704	8	450	1/2 x 1 13/16	.75	.599	.526	.396
1705	10	450	1/2 x 1 13/16	.78	.611	.528	.396
1706	12	450	3/4 x 1 21/32	.81	.647	.568	.426
1707	15	450	3/4 x 1 29/32	1.29	.883	.706	.53
1708	16	450	7/8 x 1 21/32	.84	.665	.581	.45
1709	20	450	13/16 x 2 5/32	.93	.736	.644	.483
1710	25	450	15/16 x 1 29/32	1.65	1.135	.908	.681
1711	30	450	1 x 1 29/32	1.02	.811	.711	.533
1712	40	450	15/16 x 2 13/32	1.08	.849	.736	.552
1713	50	450	1 1/8 x 2 5/32	1.26	.993	.864	.648
1714	60	450	1 1/8 x 2 5/32	1.41	1.121	.984	.77
1715	75	450	1 1/4 x 2 11/16	2.52	1.74	1.392	1.044
1716	80	450	1 x 3 21/32	1.95	1.516	1.298	.974
1717	85	450	1 1/4 x 2 11/16	2.52	1.74	1.392	1.044
1718	100	450	1 1/4 x 3 5/32	1.92	1.529	1.344	1.121
1718.3	120	450	1 1/4 x 3 11/16	2.07	1.439	1.151	.863
1719*	150	450	1 3/8 x 3 11/16	2.85	2.24	1.792	1.344
1719.2	160	450	1 3/8 x 3 11/16	2.85	1.979	1.582	1.187
1720*	200	450	1 3/8 x 4 5/32	3.00	2.332	1.998	1.499
1790	1	475	1/2 x 1 13/32	.99	.688	.551	.413
1791	2	475	5/8 x 1 5/32	1.02	.699	.558	.419
1792	3	475	5/8 x 1 13/32	1.11	.753	.602	.452
1800	4	475	5/8 x 1 21/32	.72	.50	.40	.30
1800.1	5	475	5/8 x 1 21/32	1.11	.765	.612	.459
1800.2	6	475	11/16 x 1 21/32	1.17	.803	.642	.482
1801	8	475	3/4 x 1 13/32	.78	.54	.432	.324
1802	10	475	3/4 x 1 21/32	.81	.632	.544	.408
1802.1	12	475	3/4 x 1 29/32	1.29	.883	.706	.53
1803	15	475	13/16 x 1 29/32	1.41	.979	.782	.587
1803.1	16	475	7/8 x 1 21/32	1.44	.983	.786	.59
1804	20	475	13/16 x 2 5/32	.96	.755	.654	.491
1890	1	500	1/2 x 1 5/32	.69	.479	.382	.287
1895	3	500	5/8 x 1 13/32	.72	.50	.40	.30
1901	5	500	3/4 x 1 5/32	.75	.587	.506	.38
1902	8	500	3/4 x 1 21/32	.78	.619	.54	.406
1903	10	500	3/4 x 1 21/32	.81	.643	.562	.422
1904	12	500	7/8 x 1 29/32	.84	.667	.582	.437
1905	16	500	7/8 x 2 5/32	.90	.713	.622	.467
1906	20	500	7/8 x 2 5/32	.96	.828	.662	.497
1907	30	500	1 x 1 29/32	1.05	.728	.582	.437
1908	40	500	1 x 2 13/32	1.35	.851	.68	.51
1910	60	500	1 x 3 13/32	1.92	1.333	1.066	.80
1920	15	525	7/8 x 2 5/32	.96	.665	.532	.399
1930	2	550	5/8 x 1 5/32	.78	.605	.516	.387
1960	4	600	13/16 x 2 3/8	1.44	1.18	.944	.708
1962	8	600	1 1/16 x 2 7/8	1.83	1.42	1.214	.911
1963	10	600	1 1/16 x 3 3/16	2.19	1.70	1.454	1.091
1965	16	600	1 1/16 x 4 3/16	2.49	1.937	1.66	1.246
1966	20	600	1 1/16 x 3 7/8	2.58	2.001	1.711	1.283

*Single ended with two 8-inch flexible leads. *1–99 Kleer-Pak; 100 Up Bulk-Pack. 250 Up Bulk-Pack prices on request.

NON-POLARIZED SINGLE UNITS

Sprague No. TVAN-	µF	WV NP	Case Sizes Dia. x Lgth.	Net Each, Lots of 1-24	25-49	50 Up	100-249*
1095	500	3	3/8 x 1 17/32	$0.93	$0.645	$0.516	$0.387
1100.1	50	6	3/8 x 23/32	.60	.415	.332	.249
1101.5	125	6	3/8 x 31/32	.81	.563	.451	.338
1103.1	500	6	1/2 x 1 13/16	1.02	.708	.566	.426
1109	2	10	1/4 x 17/32	.54	.375	.30	.226
1110	5	10	1/4 x 17/32	.60	.415	.332	.249
1111	6	10	1/4 x 17/32	.60	.415	.332	.249
1112	8	10	1/4 x 17/32	.69	.539	.464	.348
1112.4	10	10	1/4 x 23/32	.60	.415	.332	.249
1115	30	10	5/16 x 27/32	.63	.439	.351	.263
1117	50	10	3/8 x 23/32	.66	.528	.454	.341
1121	170	10	3/8 x 1 9/32	.93	.725	.624	.468
1125	450	10	5/8 x 1 21/32	1.23	.853	.682	.512
1126	500	10	5/8 x 1 21/32	1.29	.895	.716	.537
1129	2000	10	7/8 x 2 5/32	2.52	1.751	1.40	1.05
1132.1	500	12	5/8 x 2 1/8	1.38	.959	.766	.576
1150	4	15	1/4 x 17/32	.60	.473	.412	.344
1155	10	15	1/4 x 23/32	.69	.54	.466	.35
1162.1	500	15	5/8 x 2 1/8	1.38	.959	.766	.576
1163.1	1000	15	3/4 x 2 1/8	1.83	1.405	1.188	.891
1176	2.5	20	1/4 x 17/32	.60	.415	.332	.249
1200	1	25	1/4 x 23/32	1.08	.751	.60	.45
1202	2	25	1/4 x 17/32	.66	.508	.432	.324
1202.2*	4	25	1/4 x 23/32	.72	.561	.482	.362
1203.1	5	25	1/4 x 23/32	.69	.535	.458	.344
1203.8*	8	25	5/16 x 23/32	.72	.565	.488	.366
1204.1	10	25	5/16 x 23/32	.69	.54	.466	.35
1204.3	16	25	5/16 x 27/32	.60	.415	.332	.249
1204.6	20	25	3/8 x 27/32	.66	.459	.366	.276
1205.1	25	25	3/8 x 1 23/32	.63	.439	.351	.263
1205.5	35	25	3/8 x 27/32	.75	.593	.518	.402
1206.1	50	25	3/8 x 31/32	.78	.607	.52	.39
1207.1	100	25	3/8 x 1 17/32	.96	.744	.636	.477
1215	3	30	1/4 x 23/32	.69	.532	.452	.339
1220	20	30	3/8 x 27/32	.60	.477	.42	.357
1230	10	40	5/16 x 27/32	.69	.54	.466	.35
1232	20	40	3/8 x 31/32	.66	.459	.366	.276
1301.1	2	50	1/4 x 23/32	.66	.509	.432	.324
1302.1	3	50	1/4 x 23/32	.69	.532	.452	.339
1302.5*	4	50	1/4 x 23/32	.60	.473	.412	.344
1303.1	5	50	5/16 x 23/32	.69	.536	.458	.344
1304.1	10	50	5/16 x 27/32	.72	.552	.466	.35
1306.1	25	50	3/8 x 1 9/32	.75	.52	.416	.312
1306.2	30	50	3/8 x 1 9/32	.75	.597	.524	393
1308.1	50	50	7/16 x 1 9/32	.84	.659	.571	.428
1309.2	60	50	7/16 x 1 17/32	.90	.699	.596	.447
1310.1	100	50	1/2 x 1 9/16	1.05	.728	.582	.437
1333	10	100	1/2 x 1 5/8	.72	.56	.48	.36
1335	20	100	5/8 x 1 21/32	.78	.54	.432	.324
1340	40	100	3/4 x 1 21/32	.90	.625	.50	.376
1402.1	4	150	9/16 x 1 21/32	.69	.543	.471	.353
1406.1	10	150	3/4 x 1 13/32	.78	.599	.506	.38
1413.1	40	150	3/4 x 2 1/8	.81	.563	.451	.338
1435.1	2	200	1/2 x 1 13/32	.78	.505	.404	.303
1436	4	200	1 x 1 29/32	.66	.459	.366	.276
1440	60	200	1 x 2 21/32	1.38	1.039	.831	.623
1560	1	300	1/2 x 1 13/32	.60	.415	.332	.249
1568	20	300	7/8 x 1 29/32	1.02	.708	.566	.426
1602	5	350	3/4 x 1 21/32	.84	.652	.558	.419
1604.1	10	350	1 x 1 29/32	.96	.755	.652	.489
1608.1	20	350	1 x 2 5/32	1.05	.807	.653	.561
1650*	10	400	7/8 x 1 29/32	1.05	.807	.682	.512
1652	20	400	1 x 2 5/32	1.17	.912	.782	.587
1705.1	10	450	1 x 1 29/32	.78	.54	.432	.324

*Mounting straps attached. *1–99 Kleer-Pak; 100 Up Bulk-Pack. 250 Up Bulk-Pack prices on request.

DUAL UNITS

No. TVA-	µF at WVDC	Net Each, Lots of• 1-24	25-49	50-99	100-249	250 Up
2175	1500–1000 at 20	$3.99	$3.104	$2.66	$1.996	$1.663
2231†	2000– 500 at 30	3.87	3.011	2.58	1.936	1.613
2232.1†	3000–1000 at 30	5.85	4.551	3.90	2.926	2.438
2235†	5000–1000 at 30	5.97	4.644	3.98	2.986	2.488
2315*	10– 10 at 50	.96	.753	.64	.48	.40
2330†	100– 500 at 75	4.05	2.115	1.692	1.269	1.058
2335	200 at 85/150 at 25	1.83	1.424	1.22	.916	.763
2345	15 at 150/ 25 at 25	.96	.761	.666	.518	.431
2358†	350 at 150/100 at 50	2.85	2.227	1.918	1.439	1.199
2420*	16– 16 at 150	1.08	.811	.692	.519	.433

*Mounting strap attached. †Kraftboard case construction. •1–99, Kleer-Pak; 100 Up Bulk-Pack.

TYPE TVA ATOM® ELECTROLYTICS
CONTINUED ON THE NEXT PAGE

TYPE TVA ATOM® TUBULAR ELECTROLYTIC CAPACITORS (CONT'D)

DUAL UNITS, COMMON NEGATIVE—THREE LEADS (CONT'D)

No. TVA-	µF at WVDC	Net Each, Lots of* 1-24	25-49	50 Up	100-249	250 Up
2421*	30– 20 at 150	$1.11	$0.857	$0.728	$0.546	$0.456
2425*	20– 12 at 150	1.05	.808	.684	.513	.428
2428*	20– 20 at 150	1.05	.816	.698	.524	.436
2434*	30– 30 at 150	1.08	.857	.751	.563	.469
2438*	40– 20 at 150	1.14	.877	.744	.558	.466
2442*	40– 30 at 150	1.08	.86	.753	.576	.479
2445*	40– 40 at 150	1.11	.885	.779	.587	.489
2450*	50– 30 at 150	1.17	.912	.782	.587	.489
2453*	50– 50 at 150	1.26	.965	.814	.611	.509
2455*	60– 20 at 150	1.20	.924	.784	.588	.49
2456*	60– 40 at 150	1.26	1.021	.838	.629	.524
2457*	60– 60 at 150	1.38	1.099	.878	.659	.549
2459*	80– 20 at 150	1.29	1.019	.814	.611	.509
2460*	80– 30 at 150	1.32	1.045	.836	.627	.523
2461*	80– 40 at 150	1.32	1.011	.852	.639	.533
2462*	80– 50 at 150	1.41	1.085	.868	.651	.543
2463*	100– 50 at 150	1.59	1.173	.938	.704	.586
2464†	100–100 at 150	1.92	1.465	1.172	.879	.733
2464.8	130– 20 at 150	1.92	1.493	1.28	.96	.80
2465.5	150– 20 at 150	1.98	1.143	.914	.686	.571
2465.8	150– 50 at 150	1.65	1.243	.994	.746	.621
2466†	150–150 at 150	2.07	1.593	1.274	.956	.796
2467*	200– 5 at 150	1.59	1.232	1.051	.788	.656
2470*†	200–100 at 150	2.37	1.84	1.58	1.186	.988
2473†	250– 50 at 150	1.98	1.541	1.322	.992	.826
2473.5†	425– 20 at 150	2.19	1.745	1.534	1.203	1.003

No. TVA-	µF at WVDC	Net Each, Lots of* 1-24	25-49	50 Up	100-249	250 Up
2475†	250–200 at 150	$2.52	$1.859	$1.486	$1.116	$0.929
2484*†	60 at 200/125 at 50	1.71	1.329	1.138	.854	.711
2493*	60– 1 at 200	1.29	.983	.844	.633	.528
2498*	200– 5 at 200	2.16	1.419	1.134	.851	.709
2515*	20– 20 at 250	1.11	.885	.78	.586	.488
2520*	40– 10 at 250	1.23	.959	.822	.617	.514
2525*	80– 10 at 250	1.53	1.179	.942	.707	.589
2535†	120– 80 at 250	2.40	1.731	1.384	1.038	.866
2563†	140 at 300/100 at 50	2.37	1.831	1.464	1.098	.916
2565*†	200 at 300/100 at 50	2.58	2.023	1.748	1.311	1.093
2585	60– 32 at 300	1.92	1.125	.90	.676	.563
2590†	150–100 at 300	3.21	2.413	1.931	1.448	1.206
2622	150 at 350/100 at 25	2.58	2.007	1.72	1.29	1.076
2635.5	30– 5 at 350	1.29	1.063	.862	.647	.539
2636	30– 20 at 350	1.50	1.165	.998	.749	.624
2640*†	140– 5 at 350	2.49	1.951	1.684	1.263	1.053
2663*	10 at 450/100 at 50	1.35	1.048	.896	.672	.56
2720*	8– 8 at 450	1.17	.911	.782	.587	.489
2722*	10– 10 at 450	1.23	.979	.814	.611	.509
2725*	16– 8 at 450	1.32	1.021	.871	.653	.544
2730	20– 20 at 450	1.50	1.181	1.026	.77	.641
2735*	30– 30 at 450	1.95	1.512	1.292	.969	.808
2740*	40– 40 at 450	2.25	1.749	1.498	1.124	.936
2743*	50– 30 at 450	2.04	1.495	1.196	.897	.748
2750*	80– 30 at 450	2.49	1.679	1.342	1.007	.839
2765*	20 at 475/100 at 50	1.50	1.193	.962	.722	.601

TRIPLE UNITS

No. TVA-	Cap., µF	WVDC	Net Each, Lots of* 1-24	25-49	50 Up
3392.4	6000–300–100	15– 15– 15	$2.04	$1.587	$1.36
3393†	2000–200–100	16– 13– 6	2.73	2.124	1.82
3406*	40– 40–250	150–150– 10	1.95	1.512	1.292
3419*	30– 30–100	150–150– 12	1.83	1.415	1.206
3421.5*	60– 40–250	150–150– 15	2.01	1.56	1.334
3422.4	150– 20– 20	150–150– 15	1.77	1.349	1.131
3422.5	150– 40– 20	150–150– 15	1.83	1.457	1.279
3422.9*	40– 20– 20	150–150– 25	1.80	1.391	1.182
3423*	40– 30– 20	150–150– 25	1.80	1.40	1.20
3425*	40– 40– 20	150–150– 25	1.86	1.437	1.224
3430*	50– 30– 20	150–150– 25	1.86	1.437	1.224
3432*	50– 30–100	150–150– 25	1.92	1.491	1.274
3433*	50– 30–200	150–150– 25	2.01	1.561	1.336
3436*	50– 50– 20	150–150– 25	1.89	1.469	1.258
3437†	80– 20–100	150–150– 25	1.89	1.465	1.252
3437.1*	80– 40– 20	150–150– 25	1.95	1.508	1.284
3437.6*†	250–120– 50	150–150– 25	2.85	2.211	1.888
3439.4	150– 20– 20	150–150– 25	1.77	1.409	1.238
3440*	20– 20– 20	150–150–150	1.77	1.372	1.17
3442*	30– 25– 20	150–150–150	1.80	1.403	1.204
3443*	30– 30– 20	150–150–150	1.83	1.424	1.212
3444*	30– 30– 30	150–150–150	1.86	1.441	1.23
3445*	40– 20– 10	150–150–150	1.80	1.399	1.196
3446*	40– 20– 20	150–150–150	1.80	1.403	1.204
3448*	40– 30– 20	150–150–150	1.86	1.441	1.23
3449*	40– 30– 30	150–150–150	1.86	1.451	1.246
3450*	40– 40– 20	150–150–150	1.86	1.451	1.246
3451*	40– 40– 40	150–150–150	1.92	1.60	1.28
3453*	50– 30– 20	150–150–150	1.89	1.50	1.246
3453.5*	50– 50– 50	150–150–150	2.01	1.563	1.338
3454	60– 30– 10	150–150–150	1.50	1.173	1.009
3454.3*	60– 40– 40	150–150–150	1.98	1.536	1.314
3454.5	60– 50– 20	150–150–150	1.65	1.313	1.153
3454.6	60– 60– 20	150–150–150	1.92	1.492	1.276
3455*	80– 40– 20	150–150–150	1.98	1.54	1.32
3456*	80– 40– 40	150–150–150	2.04	1.584	1.354
3456.4	80– 50– 20	150–150–150	1.95	1.485	1.306
3456.5*	80– 50– 50	150–150–150	2.10	1.636	1.396

No. TVA-	Cap., µF	WVDC	Net Each, Lots of* 1-24	25-49	50 Up
3457*	80– 60– 20	150–150–150	$2.04	$1.584	$1.354
3457.5	80– 80– 80	150–150–150	2.19	1.712	1.474
3458*	100– 30– 10	150–150–150	1.98	1.54	1.32
3458.5	100– 60– 40	150–150–150	2.01	1.573	1.258
3459*†	150–150–150	150–150–150	2.94	2.213	1.771
3460*†	250–200– 10	150–150–150	2.76	1.54	1.798
3460.5†	250– 50– 10	160–160– 25	2.19	1.736	1.516
3460.8	80–100– 40	160–160–150	2.16	1.677	1.434
3461†	250–120– 50	160–160–100	2.82	2.18	1.744
3461.5†	250–250– 50	160–160–160	3.15	2.421	2.048
3461.8†	250–250– 50	180–180–180	3.33	2.60	2.08
3465†	300–300– 60	200–150–150	3.39	2.413	1.931
3473†	150–150– 20	200–200–200	3.24	2.211	1.768
3475†	250–200– 10	200–200–200	3.72	2.508	2.006
3485†	40– 20–100	250–250– 50	1.98	1.543	1.324
3493†	200–150– 50	250–250–150	3.72	2.393	1.914
3350†	100–200– 40	300–200–200	4.32	2.575	2.060
3358†	80– 40–100	300–300– 50	2.40	1.864	1.594
3559†	100– 60–100	300–300– 50	2.97	2.088	1.671
3560†	120– 40–100	300–300– 50	3.06	2.108	1.686
3561†	70– 50– 30	300–300–250	2.61	1.965	1.572
3563†	120– 40– 10	300–300–250	2.91	1.993	1.594
3567†	60– 60– 60	300–300–300	2.85	2.073	1.658
3569†	80– 40– 40	300–300–300	2.79	2.088	1.671
3590*†	100– 40– 40	350–300–250	3.27	2.193	1.754
3605*†	100– 20– 50	350–350– 50	2.82	2.095	1.676
3620†	140– 5–200	350–350–200	4.02	2.393	1.914
3626†	60– 60– 60	350–350–250	2.85	2.103	1.682
3630†	60– 60– 4	350–350–350	2.37	1.841	1.576
3650†	10– 80– 60	400–250–150	2.40	1.865	1.598
3667†	100– 75– 70	400–400– 25	3.63	2.533	2.026
3712*†	5– 80– 4	450–400–400	2.76	2.145	1.836
3716*	12– 12– 20	450–450– 25	1.92	1.485	1.266
3718*	20– 20– 20	450–450– 25	2.10	1.632	1.398
3720*	40– 40– 20	450–450– 25	2.61	2.023	1.726
3740*	40– 20– 20	450–450–450	2.58	2.004	1.714
3748†	60– 60– 60	450–450–450	3.84	2.819	2.254

QUADRUPLE UNITS

No. TVA-	Cap., µF	WVDC	Net Each, Lots of* 1-24	25-49	50 Up
4507	100–100– 50– 50	75– 75– 75– 75	$2.82	$2.249	$1.979
4517†	40– 20– 20–100	150–150–150– 25	2.16	1.684	1.446
4520*†	40– 40– 20– 20	150–150–150– 25	2.19	1.699	1.451
4525†	50– 50– 30– 25	150–150–150– 25	2.25	1.748	1.496
4529†	60– 40– 40– 20	150–150–150– 25	2.34	1.817	1.554
4546†	250–250– 30– 20	160–160–150–150	3.42	2.685	2.325
4547†	425– 50– 20– 50	175–150–150– 25	3.63	2.824	2.42
4560*	40– 40– 40– 25	250–250–150– 25	2.22	1.585	1.268
4567†	100– 40– 40– 25	300–300– 50– 25	3.03	2.32	1.856
4576†	140– 5–200– 30	350–300–200–150	3.72	2.884	2.462
4580†	150–100– 20–100	300–300–300– 25	4.17	2.623	2.098
4580.5†	100– 80– 20– 50	300–300–300– 50	3.60	2.335	1.868
4582†	80– 40– 10– 40	300–300–300–250	3.09	2.413	1.931
4584†	120– 40– 40– 10	300–300–300–250	3.72	2.739	2.191
4607†	140– 5–200– 30	350–300–200–200	4.59	3.008	2.406
4618†	80– 60– 40– 20	350–350–300–150	3.54	2.741	2.338

No. TVA-	Cap., µF	WVDC	Net Each, Lots of* 1-24	25-49	50 Up
4634†	150–100– 20–100	350–350–350– 50	$4.71	$3.664	$3.14
4659*†	80– 10– 40–100	400–400–300– 50	3.27	2.509	2.12
4705*†	10– 80– 40–100	450–300–250– 50	3.06	2.381	2.04
4706*†	20–120– 40–100	450–300–250– 50	3.69	2.623	2.09
4708*†	10– 80– 40– 40	450–300–250–250	3.03	2.355	2.01
4742†	20– 20– 20– 10	450–450–450–450	2.76	2.14	1.82
4748†	40– 20– 20– 10	450–450–450–450	3.18	2.468	2.11
4750†	40– 40– 20– 20	450–450–450–450	3.27	2.599	2.07

QUINTUPLE UNITS

No. TVA-	Cap., µF	WVDC	Net Each, Lots of* 1-24	25-49	50 Up
5100†	40–20–20–20–50	300–300–300–300–50	$3.03	$2.265	$1.81

*1–99, Kleer-Pak; 100 Up Bulk-Pack. 100 Up also available in Triple, Quadruple and Quintuple units, prices on request. *Mounting strap attached. †Kraft-board case construction.

SPRAGUE Twist-Lok® Capacitors

• The world's most complete line of can-type electrolytics. • Especially designed for tough TV replacement applications. • Hermetically sealed in aluminum cans for long life. • Stand up under high temperatures, high ripple currents, high surge voltages. • Ideal for above-chassis mounting—complete with phenolic and metal washers. • The most dependable electrolytic in such compact size. • Easy to mount—a twist of the tabs locks unit in place. • Designed for 85° C (185° F) operation. **Certain less popular TVL numbers have been omitted from this listing. Write for complete catalog of Sprague TVL capacitors.**

TYPE TVL SINGLE UNITS

Sprag. No. TVL-	Cap. µF	W V DC	*	Net Each, Lots of 1-24	25-49	50-99*
1115	2000	6	L	$2.10	$1.45	$1.16
1160	225	15	A	1.20	.65	.52
1165†	1000	15	C	1.77	1.04	.84
1167	1500	15	E	1.89	1.24	.99
1168	2000	15	L	2.37	1.60	1.28
1170	3000	15	L	2.94	2.00	1.60
1173	4000	15	L	3.33	2.40	1.92
1220	500	25	C	1.77	.96	.77
1230	1000	25	L	2.46	1.44	1.15
1317	100	50	A	1.14	.64	.51
1320	150	50	B	1.26	.69	.55
1324	250	50	E	1.38	.84	.68
1330	500	50	L	1.83	1.20	.96
1338†	1000	50	M	2.58	1.61	1.29
1341	1500	50	M	3.03	2.01	1.61
P1342‡	2000	50	M	3.39	2.41	1.93
1415†	50	150	C	1.14	.73	.59
1423	100	150	C	1.38	.82	.66
1425	120	150	E	1.50	.86	.69
1426	120	150	L	1.50	1.01	.81
1428§	140	150	G	1.50	.90	.72
1429	150	150	E	1.50	.91	.73
1430	150	150	L	1.50	1.06	.85
1431	200	150	L	1.68	1.15	.92
1431.1	200	150	H	1.68	1.01	.81
1434	300	150	L	1.95	1.33	1.06
1439.5†	500	150	R	3.00	1.74	1.39
•1448	120	175	G	$1.47	$0.95	$0.76
1470	125	200	G	1.95	.96	.77
1471	150	200	H	1.95	1.03	.82
1471.1	150	200	L	1.95	1.17	.94
1473§	160	200	L	2.19	1.19	.96
1475†	200	200	L	2.19	1.29	1.03
1475.1	200	200	I	2.19	1.16	.93
1490†	500	200	S	2.94	2.11	1.69
1509	20	250	C	1.11	.71	.57
1519	40	250	E	1.26	.78	.62
1530	80	250	E	1.50	.91	.73
1535	100	250	H	1.86	.98	.79
1539	150	250	G	2.13	1.15	.92
1540	150	250	L	2.13	1.29	1.04
1541†#	160	250	M	2.13	1.41	1.13
1541.1†	160	250	I	2.13	1.19	.95
1547†	200	250	M	2.52	1.46	1.17
1573	80	300	G	1.77	.99	.79
1578	100	300	G	2.02	1.08	.86
1580	125	300	M	2.43	1.34	1.07
1584	150	300	R	2.43	1.49	1.19
1585	160	300	M	2.43	1.49	1.19
1586†	200	300	O	3.27	1.68	1.34
1590†	250	300	O	3.84	1.89	1.51
1617	30	350	E	1.32	.80	.64
1621	40	350	E	1.38	.86	.69
1622	50	350	E	1.44	.91	.73
1624	60	350	G	$1.53	$0.97	$0.78
1630	80	350	L	1.98	1.22	.98
1638	125	350	M	2.73	1.46	1.17
1642	150	350	M	2.73	1.60	1.28
1643†	200	350	R	3.27	1.92	1.53
1644.2†	250	350	R	3.36	2.18	1.75
1645†	320	350	S	3.96	2.57	2.06
1705	10	450	C	1.02	.72	.58
1714§	20	450	E	1.26	.80	.64
1720	30	450	G	1.35	.89	.71
1725	40	450	G	1.41	.97	.78
1728	50	450	G	1.62	1.05	.84
1730	60	450	L	1.80	1.28	1.02
1735†	80	450	M	2.10	1.45	1.16
1750	100	450	M	2.37	1.61	1.29
1760	125	450	O	2.64	1.83	1.47
1770†	150	450	R	3.30	2.06	1.65
1772	160	450	S	2.94	2.15	1.72
1820	40	475	L	1.68	1.17	.94
1940	10	500	C	1.17	.75	.60
1943	20	500	E	1.26	.86	.69
1947	30	500	G	1.38	.98	.78
1950	40	500	G	1.71	1.09	.87
1958†	80	500	M	2.49	1.69	1.35
1960	90	500	M	2.40	1.80	1.44
1980	15	525	O	1.35	1.04	.81
1990	20	600	S	3.66	2.90	2.44

TYPE TVL DUAL UNITS

Sprag. No. TVL-	Cap., µF	WVDC	*	Net Each, Lots of 1-24	25-49	50-99*
2157	500–500	15–15	E	$2.25	$1.13	$0.91
2160	1000–1000	15–15	G	3.03	1.54	1.23
2161	1000–1000	15–15	M	3.03	1.71	1.37
•2177	500–500	16–16	C	2.25	1.13	.91
2233	500–500	25–25	L	3.03	1.54	1.23
2239	1000–500	25–25	L	3.78	1.86	1.49
P2242.9‡	1000–500	30–30	M	3.84	1.88	1.50
2326	100–100	50–50	C	1.44	.90	.72
2422	30–30	150–150	C	1.26	.84	.67
2428	40–40	150–150	C	1.32	.88	.70
2432§	50–30	150–150	C	1.38	.88	.70
2435†	50–50	150–150	C	1.50	.91	.73
•2435.1	50–50	150–150	C	1.50	.91	.73
2439§	70–30	150–150	E	1.53	.91	.73
•2441	80–30	150–150	E	1.56	.93	.74
2442§	80–40	150–150	L	1.59	1.11	.89
2442.1§	80–50	150–150	E	1.65	.97	.77
2442.2	80–60	150–150	H	1.71	1.00	.80
2442.4	80–80	150–150	L	1.83	1.18	.95
2443.3	125–100	150–150	L	2.31	1.30	1.04
2444	200–5	150–150	L	1.86	1.26	1.01
2447	200–200	150–150	M	2.76	1.62	1.30
2461	60–60	200–200	D	2.34	1.03	.83
2464	100–100	200–200	O	2.40	1.42	1.14
2470	200–5	200–200	L	2.10	1.41	1.13
2475†	250–100	200–200	O	2.49	1.67	1.34
2475.5	300–300	200–200	S	3.39	2.45	1.96
2515	20–20	250–250	C	1.32	.87	.69
2520	40–40	250–250	D	1.71	1.00	.80
2535†	150–150	250–250	M	3.54	1.91	1.53
2538	200–200	250–250	S	4.17	2.27	1.82
2560.7	150–250	300–150	O	2.76	2.01	1.61
2585	80–80	300–300	M	2.79	1.60	1.28
2591	150–100	300–300	O	3.72	1.99	1.60
2593	200–80	300–300	S	3.84	2.15	1.72
2595	200–100	300–300	S	4.65	2.23	1.79
2626	20–20	350–350	E	1.59	.95	.76
2628	30–30	350–350	G	2.01	1.06	.85
2629†	50–10	350–350	H	1.77	1.07	.86
2630	50–30	350–350	L	2.16	1.32	1.06
2634	80–40	350–350	M	2.82	1.55	1.24
2635	80–80	350–350	M	3.24	1.77	1.41
2639	100–60	350–350	M	$3.30	$1.77	$1.41
2641	100–100	350–350	O	4.23	1.99	1.60
2642	150–20	350–350	R	3.15	1.85	1.48
2642.5†	150–150	350–350	S	4.71	2.55	2.04
2643	160–10	350–350	O	2.97	1.83	1.47
2645.5†	200–200	350–350	U	4.29	3.10	2.48
2655	100–30	400–50	L	2.70	1.63	1.31
2656	80–80	400–200	R	2.73	1.71	1.37
2677	80–60	400–400	O	3.24	1.92	1.54
2678	80–80	400–400	S	3.42	2.09	1.67
2679	120–40	400–400	S	3.63	2.09	1.67
2711	80–100	450–50	M	2.58	1.64	1.31
2722.7†	20–160	450–250	M	2.64	1.59	1.27
2722.8†	80–200	450–250	U	3.96	2.28	1.82
2738.5†	80–2	450–350	M	2.31	1.57	1.26
2750†	10–10	450–450	E	1.32	.90	.72
2753	15–15	450–450	G	1.56	.98	.79
2754	20–10	450–450	E	1.56	.98	.78
2755	20–20	450–450	G	1.77	1.06	.85
2757†	30–10	450–450	G	1.65	1.06	.85
2759	30–30	450–450	L	2.10	1.38	1.11
2762	40–20	450–450	L	2.25	1.38	1.11
2764†	40–40	450–450	M	2.37	1.56	1.25
2767†	50–50	450–450	O	2.64	1.73	1.39
2768	60–20	450–450	O	2.46	1.57	1.26
2772†	60–60	450–450	O	3.09	1.89	1.52
2776	80–10	450–450	O	2.49	1.65	1.32
2776.5	80–20	450–450	M	2.70	1.72	1.38
2778†	80–40	450–450	R	3.48	1.91	1.53
2778.5†	80–50	450–450	R	3.15	1.99	1.59
2779†	80–80	450–450	R	3.66	2.23	1.79
2780	100–40	450–450	R	3.33	2.07	1.66
2808†	80–160	475–250	U	3.84	2.26	1.81
2813	20–100	475–400	O	3.09	1.83	1.46
2820	15–15	475–475	G	1.62	1.02	.82
2851	80–50	475–475	R	3.60	2.17	1.74
2933	10–10	500–500	E	1.35	.96	.76
2935	20–20	500–500	L	1.95	1.34	1.07
2937	30–30	500–500	L	2.25	1.56	1.25
2940	40–40	500–500	M	2.97	1.79	1.44
2944	60–40	500–500	R	3.18	2.04	1.64

TYPE TVL TRIPLE UNITS

3021	850–400–4	16–16–11.5	G	$2.91	$1.64	$1.31
•3021.2	850–400–4	16–16–11.5	E	2.85	1.32	1.06
•3025.2	450–100–50	16–16–16	E	2.07	1.06	.85
•3026.6	500–250–250	16–16–16	E	2.82	1.22	.98
3026.8	500–500–100	16–16–16	E	2.70	1.53	1.23
•3026.11	500–500–100	16–16–16	C	2.28	1.26	1.01
•3414.3	80–60–250	150–150–10	G	2.34	1.17	.94
3432	80–40–20	150–150–25	E	1.92	1.05	.84
•3435.1	30–30–30	150–150–150	E	1.71	.98	.79
3437	40–20–20	150–150–150	C	1.65	.96	.77
3438	40–30–20	150–150–150	E	1.71	.98	.79
•3439	40–40–20	150–150–150	E	1.71	1.00	.80
3440	40–40–40	150–150–150	D	1.80	1.03	.83
•3440.5	50–30–20	150–150–150	E	1.80	1.00	.80
•3441.2	50–40–30	150–150–150	G	1.86	1.04	.84
3442	50–50–50	150–150–150	E	2.07	1.09	.87
3443	60–40–20	150–150–150	D	1.89	1.03	.83
3443.4	70–40–40	150–150–150	G	2.79	1.10	.88
•3443.5	60–60–40	150–150–150	L	2.10	1.28	1.02
3444	80–40–20	150–150–150	E	2.01	1.07	.86
•3445.5	80–80–60	150–150–150	H	2.49	1.23	.98
3446	80–80–80	150–150–150	O	$2.58	$1.45	$1.16
3450	200–100–60	150–150–150	M	3.15	1.65	1.32
3452	200–150–150	150–150–150	O	5.16	1.91	1.53
3453	250–200–10	150–150–150	S	3.27	1.87	1.50
3454.12	250–200–50	175–175–175	S	4.17	2.30	1.84
3461.4	60–200–140	200–150–150	O	3.30	1.78	1.42
3461.8	250–200–50	200–150–150	R	3.51	2.11	1.68
3467	60–5–20	200–200–50	G	1.71	1.01	.81
3489.5	250–100–5	200–200–200	O	3.54	1.91	1.53
3490	250–200–10	200–200–200	S	4.59	2.20	1.76
3491	250–200–50	200–200–200	R	4.08	2.28	1.83
3532	20–20–20	250–250–250	D	1.80	1.02	.82
3540	40–20–20	250–250–250	E	2.01	1.09	.87
3545	80–80–60	250–250–250	O	3.39	1.75	1.40
3574.3	125–20–20	300–300–50	R	3.09	1.67	1.34
3574.6	125–60–40	300–300–50	S	3.60	1.88	1.50

*See following page for sizes. †Exact replacement for color TV. ‡With common positive. §Also available in printed circuit version; prices similar, add prefix **PCL-** to order. •Printed circuit version only, add prefix **PCL-**. #With plastic outer insulating sleeve. ***Larger quantity prices on request.**

SPRAGUE Twist-Lok® Capacitors

TYPE TVL TRIPLE UNITS (CONTINUED)

Sprague No. TVL-	Cap., μF	WVDC	*	Net Each, Lots		
				1-24	25-49	50-99*
3574.7	140–100–60	200–300–50	R	$4.17	$2.11	$1.69
3574.8	140–100–100	300–300–50	R	4.32	2.14	1.72
3577.9	80–10–200	300–300–200	O	3.84	1.90	1.52
3583	80–40–40	300–300–300	M	3.27	1.69	1.35
3585	120–50–40	300–300–300	O	4.02	1.92	1.54
3585.5	140–100–20	300–300–300	U	4.29	2.18	1.75
•3586	150–100–30	300–300–300	S	4.38	2.25	1.80
3587	160–60–20	300–300–300	S	3.75	2.08	1.66
3588	200–100–2	300–300–300	S	4.23	2.34	1.87
3608.6	60–200–30	350–150–150	M	3.45	1.74	1.39
3608.12	10–150–200	350–200–25	L	2.91	1.55	1.24
3610	125–5–75	350–200–75	M	3.66	1.76	1.41
3628.5	150–100–100	350–350–50	U	5.10	2.49	1.99
3630	15–10–20	350–350–25	E	1.71	.97	.77
3635	20–20–20	350–350–25	E	2.01	1.05	.84
3636	30–20–20	350–350–25	E	2.13	1.10	.88
3637.3	150–5–100	350–350–50	M	3.48	1.91	1.53
3639.2	100–60–20	350–350–200	S	3.75	1.94	1.55
3639.8	30–20–10	350–350–350	G	1.86	1.15	.92
3640	60–40–20	350–350–350	M	2.85	1.65	1.32
3641	60–50–50	350–350–350	M	3.39	1.86	1.49
3642	80–60–60	350–350–350	R	3.84	2.10	1.69
3645	90–40–20	350–350–350	M	3.63	1.81	1.45
3646.5†	100–100–40	350–350–350	S	5.16	2.33	1.87
3648	140–140–20	350–350–350	S	5.34	2.65	2.12
3648.6†	200–80–120	350–350–350	U	4.14	3.20	2.56
3651.8	80–80–200	400–200–25	O	3.39	1.92	1.54
3652	80–80–100	400–200–50	O	3.33	1.87	1.50
3668	10–4–20	400–350–25	E	1.53	.93	.74
3678	20–20–20	400–400–25	G	1.95	1.13	.90
3682.8	80–40–60	400–400–50	R	3.18	1.94	1.55
3683	80–40–100	400–400–50	O	3.45	1.96	1.57
3684	80–40–150	400–400–50	S	3.63	2.03	1.62
3685	100–10–20	400–400–50	M	3.09	1.80	1.44
3687.4	20–20–10	400–400–350	H	2.07	1.17	.94
3689.3	100–10–80	400–400–350	R	4.20	2.25	1.80
3697†	100–30–20	400–400–400	S	3.78	2.12	1.70
3698	100–40–10	400–400–400	S	3.72	2.12	1.70
3711.2†	50–160–50	450–250–50	S	3.51	2.03	1.62
3711.3†	20–160–40	450–250–150	R	3.15	1.80	1.44
3719.4†	50–10–160	450–350–250	U	$5.46	$2.06	$1.65
3719.10†	80–2–25	450–350–25	M	2.64	1.68	1.34
3723.7†	80–50–100	450–350–200	R	4.02	2.20	1.76
3731	10–10–20	450–450–25	E	1.65	.99	.80
3739	20–20–20	450–450–25	H	2.10	1.17	.94
3744	40–40–20	450–450–25	M	2.70	1.68	1.34
3754.9†	80–65–50	450–450–50	R	3.78	2.25	1.80
3755	40–40–100	450–450–50	O	2.97	1.75	1.40
3757†	80–20–100	450–450–50	O	3.30	1.91	1.53
3764	40–40–100	450–450–200	O	3.42	1.92	1.53
3774	40–40–80	450–450–350	S	3.84	2.13	1.70
3775.7†	10–80–80	400–450–450	U	4.11	2.43	1.95
3775.9†	80–80–20	450–450–400	R	4.29	2.47	1.98
3776	10–10–10	450–450–450	E	1.80	1.06	.85
3778	15–15–10	450–450–450	H	2.07	1.16	.93
3778.2	15–15–15	450–450–450	G	2.13	1.19	.96
3779	20–10–10	450–450–450	H	2.01	1.16	.93
3780†	20–20–20	450–450–450	L	2.49	1.48	1.18
3781	30–20–20	450–450–450	M	2.64	1.57	1.26
3782	30–30–30	450–450–450	O	3.00	1.75	1.40
3784	40–30–20	450–450–450	M	2.97	1.73	1.39
3785	40–40–10	450–450–450	M	2.85	1.73	1.39
3786†	40–40–20	450–450–450	M	3.06	1.81	1.45
3787	40–40–40	450–450–450	O	3.39	1.99	1.59
3788	50–40–30	450–450–450	O	3.39	1.99	1.59
3789†	60–20–20	450–450–450	O	3.18	1.83	1.46
3791	60–40–20	450–450–450	O	3.45	1.99	1.59
3791.8†	80–30–20	450–450–450	R	3.60	2.09	1.67
3793†	80–40–20	450–450–450	O	3.72	2.15	1.72
3793.3†	80–50–30	450–450–450	S	4.02	2.34	1.88
3806.6	10–4–100	475–350–50	E	1.83	1.03	.83
3806.8	20–10–5	475–350–150	G	1.92	1.06	.85
3816	40–80–10	475–450–450	R	3.78	2.14	1.72
3816.11†	50–40–40	475–475–25	R	3.03	1.92	1.53
3817	20–10–100	475–475–50	L	2.25	1.36	1.09
3840	30–30–20	475–475–475	O	3.06	1.78	1.43
3842	40–20–20	475–475–475	O	3.27	1.78	1.43
3935	40–40–100	500–500–200	R	3.99	2.17	1.74
3952	10–10–10	500–500–500	G	1.86	1.16	.93
3956	30–20–20	500–500–500	M	2.91	1.78	1.42

TYPE TVL QUADRUPLE UNITS

4414	60–40–20–200	150–150–150–10	L	2.37	1.36	1.09
4432	80–40–40–40	150–150–150–25	L	2.49	1.38	1.10
4440.3	200–200–100–10	150–150–150–75	M	4.14	1.99	1.59
4448	200–200–60–30	150–150–150–150	S	3.93	2.01	1.61
4449	250–200–10–10	175–175–150–150	R	4.77	2.28	1.82
•4449.1	300–200–100–10	175–150–150–150	R	4.38	2.42	1.94
4449.2	300–200–20–20	175–175–150–150	U	4.56	2.47	1.98
•4449.3	250–200–10–5	175–160–150–150	O	3.84	2.25	1.80
4450	200–200–60–30	175–175–175–175	R	3.84	2.34	1.87
4451	200–200–200–30	175–175–175–175	U	4.50	2.73	2.18
•4459	250–200–20–10	165–150–150–150	R	3.75	2.15	1.72
4479.4	240–240–160–5	200–200–200–200	U	5.85	2.76	2.21
•4479.7	250–200–20–10	200–200–200–200	O	4.14	2.30	1.84
4479.8	240–180–160–5	200–200–200–200	U	5.55	2.61	2.09
4479.10	250–200–40–10	200–200–200–200	R	4.62	2.37	1.89
4479.11	250–200–20–10	200–200–200–200	R	4.44	2.32	1.85
4479.14	160–450–60–5	200–200–200–200	U	3.90	2.84	2.27
4541	250–200–10–10	250–250–250–250	S	5.01	2.69	2.15
4542	250–200–40–10	250–250–250–250	S	5.28	2.79	2.23
•4559.8	125–5–120–100	300–200–175–75	O	4.08	2.05	1.64
4561	100–10–200–30	300–300–150–150	R	4.08	1.98	1.58
4561.3	140–10–200–30	300–300–150–150	R	4.32	2.17	1.74
4574	150–30–30–150	300–300–300–50	O	4.20	2.12	1.70
4576	80–20–20–200	300–300–300–150	R	4.02	1.99	1.59
4578	40–20–10–10	300–300–300–300	L	2.73	1.41	1.13
4579	40–40–20–10	300–300–300–300	L	3.15	1.54	1.23
4580	40–40–30–20	300–300–300–300	L	3.33	1.62	1.30
4587	150–100–10–5	300–300–300–300	R	4.59	2.25	1.80
4589	150–150–30–30	300–300–300–300	U	5.31	2.69	2.16
4599†	100–500–500–200	350–50–25–25	O	5.73	2.49	1.99
4603.7	100–150–5–100	350–200–150–50	O	4.80	2.10	1.68
4603.15†	5–100–20–100	350–200–200–25	L	2.70	1.46	1.17
4605.3†	140–100–20–20	350–300–300–300	S	5.31	2.48	1.99
4605.5	160–60–10–4	350–300–300–300	R	4.35	2.29	1.83
4605.6	40–80–10–10	350–300–300–300	M	3.42	1.73	1.38
•4607.9	100–60–100–100	350–350–150–10	U	4.71	2.23	1.78
•4608.9	100–60–60–40	350–350–200–75	S	4.53	2.18	1.75
4608.11	100–50–100–100	350–350–200–50	R	3.03	2.25	1.80
4608.12†	5–20–100–100	350–350–200–50	L	2.94	1.53	1.23
4609	60–40–60–20	350–350–200–150	M	3.48	1.81	1.45
4609.4	100–60–10–100	350–350–200–150	U	4.71	2.21	1.77
4610.8	100–80–10–20	350–350–300–50	S	4.56	2.16	1.73
4621.6	40–40–20–20	350–350–350–25	M	3.21	1.63	1.31
4622.3	40–40–40–40	350–350–350–25	M	3.60	1.75	1.40
4622.9	150–100–20–100	350–350–350–25	U	5.67	2.66	2.13
4624.8	150–100–10–60	350–350–350–50	U	5.40	2.59	2.07
4625	90–30–5–100	350–350–350–75	R	4.23	1.89	1.51
4631	70–40–10–50	350–350–350–50	M	3.63	1.77	1.42
4632	100–10–10–20	350–350–350–50	O	3.54	1.76	1.41
4633	100–20–10–20	350–350–350–50	M	3.72	1.80	1.44
4633.8	150–100–10–100	350–350–350–50	S	5.58	2.61	2.09
4634	100–40–30–50	350–350–350–50	S	4.53	2.09	1.67
4635	40–20–20–10	350–350–350–350	L	3.00	1.55	1.24
4635.3†	40–40–40–40	350–350–350–350	S	3.84	1.99	1.60
4635.7	80–60–40–20	350–350–350–350	R	4.41	2.18	1.75
4635.8	90–40–30–30	350–350–350–350	S	4.68	2.15	1.72
4635.15	100–100–50–50	350–350–350–350	S	3.63	2.74	2.19
4635.16	150–100–50–10	350–350–350–350	S	5.97	2.79	2.24
4635.23†	100–150–20–20	350–350–350–350	U	5.76	2.70	2.16
4636.3	80–80–4–100	400–200–150–50	R	3.72	1.98	1.58
4650.5	40–100–5–100	400–350–150–50	R	4.20	2.03	1.62
4653	40–80–100–100	400–350–200–50	R	4.44	2.16	1.73
4654	40–80–100–25	400–350–200–50	O	4.11	2.06	1.65
4661.4	40–80–10–100	400–350–350–350	S	4.29	2.15	1.72
4661.6	40–100–20–10	400–350–350–350	S	4.35	2.12	1.70
4663.3	80–40–100–40	400–400–50–25	O	3.87	2.06	1.65
4663.4	80–40–100–20	400–400–50–25	O	3.84	2.05	1.64
4663.5	100–10–30–20	400–400–50–50	M	3.51	1.91	1.53
4664.8†	80–10–80–100	400–400–250–50	O	3.99	2.09	1.67
4666.2	100–10–20–20	400–400–350–50	O	5.67	2.01	1.61
4669	80–40–10–20	400–400–400–25	O	3.66	2.04	1.63
4670	80–40–30–40	400–400–400–25	R	4.11	2.21	1.77
4670.9	80–10–4–100	400–400–400–50	M	3.33	1.84	1.47
4671.2	80–40–10–100	400–400–400–200	R	4.38	2.30	1.84
4672	80–40–30–4	400–400–400–350	O	4.08	2.19	1.88
4674	50–40–30–20	400–400–400–400	M	3.90	2.08	1.67
4681	100–40–10–10	400–400–400–400	S	4.20	2.28	1.82
4683	100–80–10–10	400–400–400–400	R	4.80	2.54	2.04
4683.8	100–80–30–10	400–400–400–400	U	5.16	2.72	2.18
4701.3†	20–160–50–50	450–250–75–50	S	3.69	1.92	1.54
4705.3†	80–2–100–25	450–350–25–25	O	3.18	1.84	1.47
4705.8	40–30–15–50	450–350–300–50	O	3.15	1.69	1.35
4705.9	10–140–100–20	450–350–300–300	S	5.22	2.48	1.98
4714.2†	80–30–20–50	450–450–250–50	R	3.84	2.12	1.69
4714.4†	30–20–160–40	450–450–250–150	S	4.08	2.15	1.72
4714.5†	30–50–100–250	450–450–250–50	U	5.58	2.34	1.87
4714.6†	80–50–20–50	450–450–250–50	S	4.11	2.29	1.84
4714.10†	30–20–160–10	450–450–250–250	S	3.96	2.11	1.69
4720	40–40–30–30	450–450–350–350	S	4.08	2.11	1.69
4724.2	20–20–20–20	450–450–450–25	L	2.85	1.57	1.25
4734	40–30–10–20	450–450–450–25	O	3.09	1.76	1.41
4736	40–40–10–20	450–450–450–25	O	3.24	1.84	1.47
4737	40–40–20–20	450–450–450–25	R	5.75	1.94	1.55
4739	40–40–40–40	450–450–450–25	O	3.78	2.10	1.68
4739.6	80–40–40–40	450–450–450–25	S	4.44	2.46	1.97
4739.9†	80–50–10–20	450–450–450–25	S	3.99	2.28	1.83
4754†	20–30–80–40	450–450–450–150	S	4.11	2.26	1.81
4757.12†	30–20–10–20	450–450–450–350	M	3.06	1.68	1.34
4758	40–10–10–40	450–450–450–350	M	3.27	1.78	1.43
4760†	10–10–10–10	450–450–450–450	L	2.31	1.39	1.11
4761	20–10–10–10	450–450–450–450	L	2.55	1.47	1.18
4763†	20–20–20–20	450–450–450–450	M	3.24	1.73	1.39
4769.4	30–30–20–20	450–450–450–450	O	3.60	1.91	1.53
4773	40–40–20–20	450–450–450–450	M	3.84	2.04	1.63
4774	40–40–30–30	450–450–450–450	S	4.17	2.27	1.82
4775	40–40–40–40	450–450–450–450	R	4.44	2.41	1.93
4778	60–20–20–20	450–450–450–450	O	3.90	2.07	1.66
4784.1†	80–40–20–20	450–450–450–450	R	4.35	2.41	1.93
4801	20–80–20–10	475–300–300–300	R	3.45	1.78	1.43
4805.2	10–80–40–100	475–400–400–50	S	3.99	2.17	1.74
4818.5†	100–4–4–200	475–475–475–25	S	4.71	2.29	1.84
4820.5†	80–80–4–4	475–475–450–450	U	4.89	2.74	2.19
4832	20–20–10–10	475–475–475–475	M	3.00	1.66	1.33
4834	20–20–20–20	475–475–475–475	M	3.51	1.85	1.48
4840	40–20–10–10	475–475–475–475	M	3.51	1.85	1.48
4940	10–10–10–10	500–500–500–500	L	2.40	1.51	1.21

*SIZE

Key	O.D. x L.	Key	O.D. x L.	Key	O .D. x L.	Key	O.D. x L.
A	¾″ x 2″	E	1″ x 2″	L	1⅜″ x 2″	S	1⅜″ x 4″
B	¾″ x 2½″	G	1″ x 2½″	M	1⅜″ x 2½″	U	1⅜″ x 4½″
C	1″ x 1½″	H	1″ x 3″	O	1⅜″ x 3″		
D	1″ x 1¾″	I	1″ x 3½″	R	1⅜″ x 3½″		

†Exact replacement for color TV. •Printed circuit version; add prefix **PCL-**. ***Larger quantity prices on request.**

SPRAGUE CAPACITORS

TYPE TVL QUADRUPLE UNITS (CONTINUED)

Sprague No. TVL-	Cap., µF	WVDC	*	Net Each, Lots of			
				1-24	25-49	50-99	100-249
4607	60-4-100-40	350-350-25-25	L	$2.28	$1.37	$1.07	$0.85
4608	60-20-80-100	350-350-150-50	M	2.94	1.61	1.26	1.01
4608.12	5-20-100-100	350-350-200-50	K	2.55	1.37	1.07	.86
4609	60-40-60-20	350-350-200-150	M	3.03	1.61	1.25	1.00
4609.4	100-60-10-100	350-350-200-150	P	4.11	1.99	1.55	1.24
4610.8	100-80-10-20	350-350-300-50	O	3.96	1.94	1.51	1.21
4620.3	30-10-5-200	350-350-350-25	K	2.28	1.34	1.04	.83
4621.3	40-20-20-25	350-350-350-25	L	2.52	1.38	1.07	.86
4621.6	40-40-20-20	350-350-350-25	L	2.79	1.49	1.16	.93
4622	40-40-30-10	350-350-350-25	M	2.97	1.53	1.19	.95
4622.3	40-40-40-40	350-350-350-25	L	3.12	1.59	1.24	.99
4622.11	250-20-20-50	350-350-350-25	P	3.90	2.47	1.92	1.54
4625	90-30-5-100	350-350-350-75	N	3.69	1.70	1.33	1.06
4630.4	60-30-30-150	350-350-350-50	M	3.30	1.68	1.31	1.05
4631	70-40-10-50	350-350-350-50	M	3.15	1.61	1.25	1.00
4632	100-10-10-20	350-350-350-50	M	3.09	1.60	1.25	1.00
4633	100-20-10-20	350-350-350-50	N	3.24	1.65	1.28	1.03
4634	100-40-30-50	350-350-350-50	O	3.93	1.88	1.46	1.17
4634.6	30-20-5-100	350-350-350-200	M	2.82	1.48	1.15	.92
4634.7	30-10-5-100	350-350-350-200	L	2.73	1.42	1.11	.89
4635	40-20-20-10	350-350-350-350	K	2.61	1.41	1.10	.88
4635.3	40-40-40-40	350-350-350-350	O	3.60	1.80	1.40	1.12
4635.7	80-60-40-20	350-350-350-350	N	3.84	1.99	1.55	1.24
4635.8	90-40-30-30	350-350-350-350	O	4.08	1.94	1.51	1.21
4652	20-10-10-20	400-350-200-25	K	1.92	1.17	.91	.73
4653	40-80-100-100	400-350-200-50	N	3.87	1.96	1.53	1.22
4654	40-80-100-25	400-350-200-50	N	3.57	1.91	1.49	1.19
4661.4	40-80-10-100	400-350-350-200	O	3.72	1.94	1.51	1.21
4661.6	40-100-20-10	400-350-350-350	O	3.78	1.91	1.49	1.19
4663.2	50-40-100-100	400-400-50-25	O	3.06	1.73	1.35	1.08
4663.4	80-40-100-20	400-400-50-25	M	3.33	1.88	1.46	1.17
4663.5	100-10-30-20	400-400-50-50	L	3.06	1.75	1.36	1.09
4665.5	50-20-20-25	400-400-350-25	M	2.67	1.55	1.21	.97
4666.2	100-10-20-20	400-400-350-50	M	4.92	1.81	1.41	1.13
4669	80-40-10-20	400-400-400-25	N	3.18	1.87	1.46	1.17
4670	80-40-30-40	400-400-400-25	N	3.57	2.01	1.57	1.25
4670.7	90-20-10-50	400-400-400-50	O	3.24	1.83	1.43	1.14
4670.9	80-10-4-100	400-400-400-50	O	2.91	1.67	1.30	1.04
4671.2	80-40-10-100	400-400-400-200	O	3.81	2.08	1.62	1.30
4672	80-40-30-4	400-400-400-350	O	3.54	2.01	1.56	1.25
4674	50-40-30-20	400-400-400-400	O	3.39	1.92	1.50	1.20
4680	80-25-10-10	400-400-400-400	O	3.15	1.83	1.42	1.14
4681	100-40-10-10	400-400-400-400	O	3.66	2.05	1.60	1.28
4683	100-80-10-10	400-400-400-400	O	4.17	2.30	1.79	1.43
4683.8	100-80-30-10	400-400-400-400	P	4.50	2.45	1.90	1.52
4701	20-80-20-50	450-200-200-50	M	2.46	1.40	1.09	.87
4701.3	20-160-50-50	450-250-75-50	O	3.21	1.73	1.34	1.08
4703.5	25-100-10-60	450-300-300-50	M	3.18	1.64	1.28	1.02
4704	10-100-20-20	450-300-300-200	M	3.03	1.57	1.23	.98
4705.3	80-2-100-25	450-350-25-25	M	2.76	1.69	1.32	1.05
4705.8	40-30-15-50	450-350-300-50	M	2.73	1.52	1.19	.95
4705.9	10-140-100-20	450-350-300-300	O	4.53	2.23	1.74	1.39
4710.2	80-10-40-30	450-400-300-300	O	3.48	1.94	1.51	1.21
4711	20-80-50-100	450-350-350-50	O	3.60	1.87	1.46	1.17
4711.3	60-40-20-20	450-400-400-400	O	3.51	1.98	1.54	1.23
4712	20-15-20-20	450-450-25-25	K	2.07	1.24	.97	.77
4712.9	50-20-4-40	450-450-150-25	L	2.58	1.51	1.18	.94
4712.10	50-40-4-40	450-450-150-25	L	2.88	1.66	1.29	1.03
4714	35-25-20-100	450-450-200-50	L	2.79	1.55	1.21	.97
4714.2	80-30-20-50	450-450-250-50	N	3.33	1.90	1.48	1.18
4714.3	40-40-100-60	450-450-200-200	O	3.63	1.97	1.53	1.23
4714.4	30-20-160-40	450-450-250-150	P	3.54	1.94	1.51	1.21
4714.5	80-50-100-250	450-450-250-50	O	4.86	2.28	1.78	1.42
4714.6	80-50-20-50	450-450-250-50	O	3.57	2.06	1.60	1.28
4714.10	30-20-160-10	450-450-250-250	O	3.45	1.89	1.47	1.18
4716.4	30-20-4-200	450-450-350-250	P	3.57	2.01	1.57	1.25
4720	40-40-30-30	450-450-350-350	O	3.54	1.90	1.48	1.18
4723	10-10-10-20	450-450-450-25	K	1.89	1.19	.93	.74
4724.2	20-20-20-20	450-450-450-25	K	2.49	1.43	1.11	.89
4731	40-20-20-20	450-450-450-25	M	2.76	1.59	1.24	.99
4732	40-20-20-40	450-450-450-25	L	2.79	1.60	1.24	1.00
4734	40-30-10-20	450-450-450-25	M	2.70	1.60	1.25	1.00
4736	40-40-10-20	450-450-450-25	N	2.82	1.68	1.30	1.04
4737	40-40-20-20	450-450-450-25	N	3.00	1.75	1.36	1.09
4739	40-40-40-40	450-450-450-25	M	3.30	1.89	1.47	1.18
4739.5	60-50-5-20	450-450-450-25	O	3.21	1.87	1.46	1.17
4739.6	80-40-40-40	450-450-450-25	O	3.87	2.21	1.72	1.38
4739.9	80-50-10-20	450-450-450-25	O	3.48	1.98	1.54	1.23
4743	40-20-10-100	450-450-450-50	N	2.76	1.59	1.24	.99
4745	40-40-10-25	450-450-450-50	M	2.82	1.67	1.30	1.04
4746	40-40-10-50	450-450-450-50	O	2.88	1.72	1.34	1.07
4747	40-40-10-100	450-450-450-100	N	3.33	1.79	1.40	1.12
4754	20-30-80-40	450-450-450-150	O	3.57	2.03	1.58	1.26
4757	40-20-10-100	450-450-450-250	O	3.51	1.83	1.43	1.14
4757.12	30-20-10-20	450-450-450-350	L	2.67	1.56	1.21	.97
4758	40-10-10-40	450-450-450-350	M	2.85	1.62	1.26	1.01
4759.7	5-5-5-5	450-450-450-450	K	1.80	1.11	.86	.69
4760	10-10-10-10	450-450-450-450	K	2.01	1.25	.98	.78
4761	20-10-10-10	450-450-450-450	K	2.22	1.33	1.03	.83
4763	20-20-20-20	450-450-450-450	L	2.82	1.58	1.23	.98
4769.4	30-30-20-20	450-450-450-450	M	3.12	1.72	1.34	1.07
4771	35-35-10-5	450-450-450 450	M	2.76	1.63	1.27	1.02
4771.3	40-10-10-10	450-450-450-450	M	2.46	1.50	1.17	.94
4771.8	40-35-10-10	450-450-450-450	M	2.88	1.68	1.31	1.05
4773	40-40-20-20	450-450-450-450	L	3.33	1.90	1.48	1.18
4774	40-40-30-30	450-450-450-450	O	3.63	2.04	1.59	1.27
4775	40-40-40-40	450-450-450-450	N	3.87	2.19	1.70	1.36
4778	60-20-20-20	450-450-450-450	M	3.39	1.84	1.44	1.15
4783	80-10-10-10	450-450-450-450	N	3.03	1.83	1.42	1.14
4801	20-80-20-10	475-300-300-300	N	3.00	1.60	1.25	1.00
4801.2	20-140-20-10	475-300-300-300	O	3.51	1.84	1.44	1.15
4802	10-100-10-100	475-300-300-25	N	2.94	1.58	1.23	.98
4803.3	10-140-4-100	475-350-350-50	O	3.51	1.88	1.46	1.17
4803.4	10-130-20-10	475-350-350-350	M	$3.60	$1.88	$1.46	$1.17
4803.8	30-130-10-10	475-350-350-350	O	3.84	2.00	1.56	1.25
4804	10-40-100-10	475-400-50-25	L	2.43	1.40	1.09	.87
4805	10-40-4-100	475-400-350-50	L	2.43	1.41	1.10	.88
4805.2	10-80-40-100	475-400-400-50	O	3.48	1.95	1.52	1.22
4811	10-60-30-125	475-450-400-50	O	3.33	1.83	1.43	1.14
4813	10-50-30-30	475-450-450-25	M	2.85	1.68	1.30	1.04
4813.2	80-4-4-200	475-450-450-25	N	3.18	1.86	1.45	1.16
4814	10-40-10-100	475-450-450-50	L	2.58	1.50	1.17	.94
4814.7	50-18-4-40	475-475-150-25	L	2.85	1.58	1.23	.99
4818	20-10-20-100	475-475-450-25	L	2.52	1.44	1.12	.90
4818.5	100-4-4-200	475-475-475-25	O	4.08	3.10	2.41	1.93
4820.3	80-4-4-4	475-450-450-450	M	2.97	1.76	1.37	1.10
4820.4	50-40-4-40	475-475-150-25	N	3.27	1.80	1.40	1.12
4820.5	80-80-4-4	475-475-450-450	O	4.26	2.46	1.91	1.53
4823	80-4-4-200	475-475-475-25	N	3.18	1.87	1.46	1.17
4832	20-20-10-10	475-475-475-475	L	2.61	1.49	1.16	.93
4834	20-20-20-20	475-475-475-475	L	3.06	1.51	1.17	.94
4840	40-20-10-10	475-475-475-475	L	3.06	1.68	1.31	1.05
4909	10-10-4-20	500-300-300-25	K	1.74	1.13	.88	.70
4917	30-10-150-30	500-450-50-50	M	2.52	1.49	1.16	.93
4940	10-10-10-10	500-500-500-500	K	2.10	1.36	1.06	.85
4944	40-40-8-8	500-500-500-500	O	3.42	1.98	1.54	1.23

*TVL SIZES

Key	O.D. x L.	Key	O.D. x L.	Key	O.D. x L.	Key	O.D. x L.
A	¾″ x 2″	F	1″ x 2½″	K	1⅜″ x 2″	P	1⅜″ x 4½″
B	¾″ x 2½″	G	1″ x 2⅞″	L	1⅜″ x 2½″	Q	1⅜″ x 5″
C	1″ x 1½″	H	1″ x 3″	M	1⅜″ x 3″		
D	1″ x 1¾″	I	1″ x 3½″	N	1⅜″ x 3½″		
E	1″ x 2″	J	1″ x 4″	O	1⅜″ x 4″		

CORNELL DUBILIER CAPACITORS

TYPE MMW MINIATURE

METALLIZED POLYESTER FILM TUBULARS

22 MFD
400 VDC

Extremely small size for transistorized circuits. Metallized polyester dielectric in tough film wrap and sealed with high-density, thermosetting resin end fill. Extra strong and durable; high capacitance stability, resistance to moisture and humidity. **Temperature Range:** −55° C to +85° C, at rated voltage; to +125° C with derating. **Tolerance:** ±20%. **Size:** Min. .180″ dia. x 9⁄16″ lg. to .950″ dia. x 1¾″ lg. Available in 50 WVDC with ±20%, ±10%, ±5%, ±2% and ±1% tolerance. Write for information.

200 WVDC

CDE Number	Cap., µF	Net Each, Lots of				
		1-24	25-49	50-99	100-499	500-999
MMW2S33	.033	$0.63	$0.47	$0.36	$0.311	$0.259
MMW2S47	.047	.63	.47	.36	.311	.259
MMW2S68	.068	.66	.49	.38	.324	.27
MMW2P1	.10	.69	.51	.39	.338	.281
MMW2P15	.15	.72	.55	.43	.365	.304
MMW2P22	.22	.81	.61	.47	.405	.338
MMW2P33	.33	.93	.69	.54	.459	.383
MMW2P47	.47	.96	.71	.55	.473	.394
MMW2P68	.68	1.02	.77	.60	.51	.425
MMW2W1	1.0	1.14	.86	.67	.575	.479
MMW2W1P5	1.5	1.38	1.03	.80	.689	.574
MMW2W2	2.0	1.65	1.25	.97	.83	.691

400 WVDC

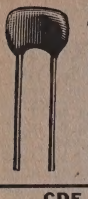
MMW4S1	.01	$0.60	$0.45	$0.35	$0.297	$0.248
MMW4S15	.015	.63	.47	.36	.311	.259
MMW4S22	.022	.63	.47	.36	.311	.259
MMW4S33	.033	.66	.49	.38	.324	.27
MMW4S47	.047	.69	.51	.39	.338	.281
MMW4S68	.068	.72	.53	.41	.351	.293
MMW4P1	.10	.75	.57	.44	.378	.315
MMW4P15	.15	.84	.63	.49	.419	.349
MMW4P22	.22	.93	.69	.54	.459	.383
MMW4P33	.33	1.05	.79	.62	.527	.439
MMW4P47	.47	1.23	.91	.71	.608	.506
MMW4P68	.68	1.38	1.03	.80	.689	.574
MMW4W1	1.0	1.74	1.30	1.01	.867	.723
MMW4W1P5	1.5	2.16	1.63	1.27	1.09	.904
MMW4W2	2.0	2.64	1.97	1.53	1.32	1.10

600 WVDC

MMW6S1	.01	$0.63	$0.47	$0.36	$0.311	$0.259
MMW6S15	.015	.66	.49	.38	.324	.27
MMW6S22	.022	.69	.51	.39	.338	.281
MMW6S33	.033	.72	.53	.41	.351	.293
MMW6S47	.047	.75	.57	.44	.378	.315
MMW6S68	.068	.81	.61	.47	.405	.338
MMW6P1	.10	.87	.65	.51	.432	.36
MMW6P15	.15	.99	.73	.57	.486	.405
MMW6P22	.22	1.14	.85	.66	.567	.473
MMW6P33	.33	1.41	1.05	.82	.702	.585
MMW6P47	.47	1.71	1.28	.99	.851	.709
MMW6P68	.68	2.07	1.55	1.21	1.03	.861
MMW6W1	1.0	2.73	2.05	1.59	1.37	1.14

CDE CORNELL-DUBILIER Mica Capacitors

CD6—CD42 DIPPED SILVERED MICAS



Range: −55° C to +125° C. **Temp. Characteristic:** Indicated by 3rd letter in number (e.g., CD10**C**D050D): C, ±200 ppm/° C (drift, ±0.5%); E, −20 to +100 ppm/° C (drift, ±sum of 0.1% and .1 pF); F, 0 to +70 ppm/° C (drift, ±sum of 0.05% and .1 pF). **Tolerance:** ±5% unless otherwise noted (many values available in ±20%, ±2%, ±1%). **Voltage:** 500 WVDC unless otherwise noted. Only commercial types listed. For MIL type, change prefix CD10 to CM04, CD15 to CM05, CD19 to CM06, CD30 to CM07, or CD42 to CM08. **Note:** CD6 and CD7 types not available in MIL version.

CDE Number*	Cap., pF	Net Each, Lots of 1-24	25-99	100-499	500-999
CD6CD010§	1	$0.45	$0.263	$0.15	$0.113
CD6CD020C§	2	.45	.263	.15	.113
CD6CD030C§	3	.45	.263	.15	.113
CD6CD040C§	4	.45	.263	.15	.113
CD6CD050C§	5	.45	.263	.15	.113
CD6CD060C§	6	.45	.263	.15	.113
CD6CD070C§	7	.45	.263	.15	.113
CD6CD080C§	8	.45	.263	.15	.113
CD6CD090C§	9	.45	.263	.15	.113
CD6CD100K†	10	.45	.263	.15	.113
CD6CD110K†	11	.45	.263	.15	.113
CD6CD120K†	12	.46	.269	.154	.115
CD6CD150K†	15	.46	.269	.154	.115
CD6CD180K†	18	.46	.269	.154	.115
CD6CD200J	20	.51	.298	.17	.128
CD6CD220J	22	.51	.298	.17	.128
CD6ED240J	24	.54	.315	.18	.135
CD6ED270J	27	.54	.315	.18	.135
CD6ED300J	30	.54	.315	.18	.135
CD6ED330J	33	.558	.326	.186	.14
CD6ED360J	36	.558	.326	.186	.14
CD6ED390J	39	.558	.326	.186	.14
CD6ED430J	43	.558	.326	.186	.14
CD6ED470J	47	.558	.326	.186	.14
CD6ED500J	50	.60	.35	.20	.15
CD6ED510J	51	.60	.35	.20	.15
CD6ED560J	56	.60	.35	.20	.15
CD6ED620J	62	.60	.35	.20	.15
CD6ED680J	68	.654	.382	.218	.164
CD6ED750J	75	.654	.382	.218	.164
CD6ED820J‡	82	.672	.392	.224	.168
CD6EC910J‡	91	.672	.392	.224	.168
CD6FC101J‡	100	.672	.392	.224	.168
CD6FC111J‡	110	.69	.403	.23	.173
CD6FC121J‡	120	.69	.403	.23	.173
CD6CA010C#	1	.342	.20	.114	.086
CD6CA020C§#	2	.342	.20	.114	.086
CD6CA030C§#	3	.342	.20	.114	.086
CD6CA040C§#	4	.342	.20	.114	.086
CD6CA050C§#	5	.342	.20	.114	.086
CD6CA060C§#	6	.342	.20	.114	.086
CD6CA070C§#	7	.342	.20	.114	.086
CD6CA080C§#	8	.342	.20	.114	.086
CD6CA090C§#	9	.342	.20	.114	.086
CD6CA100K†#	10	.342	.20	.114	.086
CD6CA110K†#	11	.342	.20	.114	.086
CD6CA120J#	12	.396	.231	.132	.099
CD6CA150J#	15	.402	.235	.134	.101
CD6CA180J#	18	.402	.235	.134	.101
CD6CA200J#	20	.402	.235	.134	.101
CD6CA220J#	22	.408	.238	.136	.102
CD6EA240J#	24	.408	.238	.136	.102
CD6EA270J#	27	.408	.238	.136	.102
CD6EA300J#	30	.414	.242	.138	.104
CD6EA330J#	33	.414	.242	.138	.104
CD6EA360J#	36	.42	.245	.14	.105
CD6EA390J#	39	.42	.245	.14	.105
CD6EA430J#	43	.432	.252	.144	.108
CD6EA470J#	47	.432	.252	.144	.108
CD6EA500J#	50	.45	.263	.15	.113
CD6EA510J#	51	.45	.263	.15	.113
CD6EA560J#	56	.45	.263	.15	.113
CD6EA620J#	62	.462	.27	.154	.116
CD6EA680J#	68	.474	.277	.158	.119
CD6EA750J#	75	.504	.294	.168	.126
CD6EA820J#	82	.528	.308	.176	.132
CD6EA910J#	91	.558	.326	.186	.14
CD6FA101J#	100	.558	.326	.186	.14
CD6FA111J#	110	.624	.364	.208	.156
CD6FA121J#	120	.624	.364	.208	.156
CD7FD131J	130	.702	.41	.234	.176
CD7FD151J	150	.702	.41	.234	.176
CD7FD161J	160	.72	.42	.24	.18
CD7FD181J	180	.732	.427	.244	.183
CD7FC201J‡	200	.768	.448	.256	.192
CD7FC221J‡	220	.81	.473	.27	.203
CD7FC241J‡	240	.84	.49	.28	.21
CD7FC271J‡	270	.888	.518	.296	.222
CD7FC301J‡	300	.918	.536	.306	.23
CD7FA331J#	330	1.002	.585	.334	.251
CD7FA361J#	360	1.05	.613	.35	.263
CD7FA391J#	390	1.05	.613	.35	.263
CD7FA431J#	430	1.05	.613	.35	.263
CD7FA471J#	470	1.098	.641	.366	.275
CD7FA511J#	510	1.152	.672	.384	.288
CD7FA561J#	560	1.20	.70	.40	.30
CD7FA621J#	620	1.248	.728	.416	.312
CD7FA681J#	680	1.50	.875	.50	.375
CD7FA751J#	750	1.602	.935	.534	.401
CD7FA821J#	820	1.65	.963	.55	.413
CD7FA911J#	910	1.752	1.022	.584	.438
CD7FA102J#	1000	1.95	1.138	.65	.488
CD7FA112J#	1100	1.998	1.166	.666	.50
CD7FA122J#	1200	2.052	1.197	.684	.513
CD7FA132J#	1300	$2.298	$1.341	$0.766	$0.575
CD7FA152J#	1500	2.55	1.488	.85	.638
CD10CD010D•	1	.456	.266	.152	.114
CD10CD020D•	2	.456	.266	.152	.114
CD10CD030D•	3	.456	.266	.152	.114
CD10CD050D•	5	.456	.266	.152	.114
CD10CD060D•	6	.456	.266	.152	.114
CD10CD070D•	7	.456	.266	.152	.114
CD10CD080D•	8	.456	.266	.152	.114
CD10CD100J	10	.456	.266	.152	.114
CD10CD120J	12	.456	.266	.152	.114
CD10CD150J	15	.456	.266	.152	.114
CD10CD180J	18	.456	.266	.152	.114
CD10ED200J	20	.312	.182	.104	.078
CD10ED220J	22	.312	.182	.104	.078
CD10ED240J	24	.324	.189	.108	.081
CD10ED270J	27	.324	.189	.108	.081
CD10ED300J	30	.324	.189	.108	.081
CD10ED330J	33	.324	.189	.108	.081
CD10ED360J	36	.33	.193	.11	.083
CD10ED390J	39	.33	.193	.11	.083
CD10ED430J	43	.33	.193	.11	.083
CD10ED470J	47	.336	.196	.112	.084
CD10ED500J	50	.336	.196	.112	.084
CD10ED510J	51	.336	.196	.112	.084
CD10ED560J	56	.348	.203	.116	.087
CD10ED620J	62	.348	.203	.116	.087
CD10ED680J	68	.354	.207	.118	.089
CD10ED750J	75	.354	.207	.118	.089
CD10ED820J	82	.36	.21	.12	.09
CD10FD910J	91	.372	.217	.124	.093
CD10FD101J	100	.378	.221	.126	.095
CD10FD111J	110	.378	.221	.126	.095
CD10FD121J	120	.396	.231	.132	.099
CD10FD131J	130	.42	.245	.14	.105
CD10FD151J	150	.462	.27	.154	.116
CD10FD161J	160	.48	.28	.16	.12
CD10FD181J	180	.528	.308	.176	.132
CD10FD201J	200	.57	.333	.19	.143
CD10FD221J	220	.594	.347	.198	.149
CD10FD242J	240	.636	.371	.212	.159
CD10FD251J	250	.654	.382	.164	.131
CD10FC271J‡	270	.612	.357	.204	.153
CD10FC301J‡	300	.672	.392	.224	.168
CD10FA331J#	330	.636	.371	.212	.159
CD10FA361J#	360	.672	.392	.224	.168
CD10FA391J#	390	.72	.42	.24	.18
CD15CD010D•	1	.318	.186	.106	.08
CD15CD020D•	2	.318	.186	.106	.08
CD15CD030D•	3	.318	.186	.106	.08
CD15CD040D•	4	.318	.186	.106	.08
CD15CD050D•	5	.318	.186	.106	.08
CD15CD060D•	6	.318	.186	.106	.08
CD15CD070D•	7	.318	.186	.106	.08
CD15CD080D•	8	.318	.186	.106	.08
CD15CD100J	10	.318	.186	.106	.08
CD15CD120J	12	.318	.186	.106	.08
CD15CD150J	15	.318	.186	.106	.08
CD15CD180J	18	.318	.186	.106	.08
CD15ED200J	20	.258	.151	.086	.065
CD15ED220J	22	.258	.151	.086	.065
CD15ED240J	24	.258	.151	.086	.065
CD15ED270J	27	.258	.151	.086	.065
CD15ED300J	30	.258	.151	.086	.065
CD15ED330J	33	.258	.151	.086	.065
CD15ED360J	36	.258	.151	.086	.065
CD15ED390J	39	.258	.151	.086	.065
CD15ED430J	43	.258	.151	.086	.065
CD15ED470J	47	.258	.151	.086	.065
CD15ED500J	50	.258	.151	.086	.065
CD15ED510J	51	.258	.151	.086	.065
CD15ED560J	56	.258	.151	.086	.065
CD15ED620J	62	.258	.151	.086	.065
CD15ED680J	68	.258	.151	.086	.065
CD15ED750J	75	.258	.151	.086	.065
CD15ED820J	82	.258	.151	.086	.065
CD15FD910J	91	.264	.154	.088	.066
CD15FD101J	100	.264	.154	.088	.066
CD15FD111J	110	.282	.165	.094	.071
CD15FD121J	120	.282	.165	.094	.071
CD15FD131J	130	.306	.179	.102	.077
CD15FD151J	150	.306	.179	.102	.077
CD15FD161J	160	.33	.193	.11	.083
CD15FD181J	180	.354	.207	.118	.089
CD15FD201J	200	.354	.207	.118	.089
CD15FD221J	220	.378	.221	.126	.095
CD15FD241J	240	.402	.235	.134	.101
CD15FD251J	250	.426	.249	.142	.107
CD15FD271J	270	.426	.249	.142	.107
CD15FD301J	300	.45	.263	.15	.113
CD15FD331J	330	.498	.291	.166	.125
CD15FD361J	360	.522	.305	.174	.131
CD15FD391J	390	.546	.319	.182	.137
CD15FD431J	430	.588	.343	.196	.147
CD15FD471J	470	.612	.357	.204	.153
CD15FD501J	500	.66	.385	.22	.165
CD15FD511J	510	.66	.385	.22	.165
CD15FC561J‡	560	.66	.385	.22	.165
CD15FC621J‡	620	.708	.413	.236	.177
CD15FC681J‡	680	.78	.455	.26	.195
CD15FC751J‡	750	.828	.483	.276	.207
CD15FC821J‡	820	.90	.525	.30	.225

*Add final suffix **03** when ordering (e.g., CD10CD050D**03**). †To ±10%. ‡300 WVDC. §Tol., ±1 pF. #100 WVDC.. •Tol., ±5 p

SILVERED MICAS CONTINUED ON NEXT PAGE.

CD6—CD42 DIPPED SILVERED MICAS (CONT'D)

CDE Number*	Cap., pF	Net Each, Lots of 1-24	25-99	100-499	500-999
CD15FA911J#	910	$0.78	$0.455	$0.26	$0.195
CD15FA102J#	1000	.852	.497	.284	.213
CD15FA112J#	1100	.924	.539	.308	.231
CD15FA122J#	1200	.996	.581	.332	.249
CD19ED271J	270	.336	.196	.112	.084
CD19ED301J	300	.336	.196	.112	.084
CD19ED331J	330	.336	.196	.112	.084
CD19ED361J	360	.378	.221	.126	.095
CD19ED391J	390	.378	.221	.126	.095
CD19FD431J	430	.378	.221	.126	.095
CD19FD471J	470	.426	.249	.142	.107
CD19FD501J	500	.426	.249	.142	.107
CD19FD511J	510	.426	.249	.142	.107
CD19FD561J	560	.426	.249	.142	.107
CD19FD621J	620	.468	.273	.156	.117
CD19FD681J	680	.468	.273	.156	.117
CD19FD751J	750	.51	.298	.17	.128
CD19FD821J	820	.51	.298	.17	.128
CD19FD911J	910	.552	.322	.184	.138
CD19FD102J	1000	.60	.35	.20	.15
CD19FD112J	1100	.642	.375	.214	.16
CD19FD122J	1200	.684	.399	.228	.171
CD19FD132J	1300	.732	.427	.244	.183
CD19FD152J	1500	.816	.476	.272	.204
CD19FD162J	1600	.816	.476	.272	.204
CD19FD182J	1800	.906	.529	.302	.227
CD19FD202J	2000	.99	.578	.33	.248
CD19FD222J	2200	1.08	.63	.36	.27
CD19FD242J	2400	1.134	.662	.378	.284
CD19FD252J	2500	1.188	.693	.396	.297
CD19FD272J	2700	1.284	.749	.321	.257
CD19FD302J	3000	1.44	.84	.48	.36
CD19FD332J	3300	1.542	.90	.514	.386
CD19FD362J	3600	1.698	.991	.566	.425
CD19FD392J	3900	1.80	1.05	.60	.45
CD19FD432J	4300	2.004	1.17	.668	.501
CD19FD472J	4700	2.154	1.257	.718	.539
CD19FD502J	5000	2.262	1.319	.754	.566
CD19FD512J	5100	2.364	1.379	.788	.591
CD19FC562J‡	5600	2.208	1.288	.736	.552
CD19FC622J‡	6200	2.412	1.407	.804	.603
CD19FA682J#	6800	2.106	1.229	.702	.527
CD19FA752J#	7500	2.364	1.379	.788	.591
CD19FA822J#	8200	2.562	1.495	.854	.641
CD30FD202J	2000	.864	.504	.288	.216
CD30FD222J	2200	.936	.546	.312	.234
CD30FD242J	2400	.936	.546	.312	.234

CDE Number*	Cap., pF	Net Each, Lots of 1-24	25-99	100-499	500-999
CD30FD252J	2500	$1.014	$0.592	$0.338	$0.254
CD30FD272J	2700	1.014	.592	.338	.254
CD30FD302J	3000	1.164	.679	.388	.291
CD30FD332J	3300	1.242	.725	.414	.311
CD30FD362J	3600	1.314	.767	.438	.329
CD30FD392J	3900	1.386	.809	.462	.347
CD30FD432J	4300	1.464	.854	.488	.366
CD30FD472J	4700	1.614	.942	.538	.404
CD30FD502J	5000	1.686	.984	.562	.422
CD30FD512J	5100	1.686	.984	.562	.422
CD30FD562J	5600	1.842	1.075	.614	.461
CD30FD622J	6200	1.986	1.159	.662	.497
CD30FD682J	6800	2.214	1.292	.738	.554
CD30FD752J	7500	2.364	1.379	.788	.591
CD30FD822J	8200	2.586	1.509	.862	.647
CD30FD912J	9100	2.808	1.638	.936	.702
CD30FD103J	10,000	3.114	1.817	1.038	.779
CD30FD113J	11,000	3.33	1.943	1.11	.833
CD30FD123J	12,000	3.636	2.121	1.212	.909
CD30FD133J	13,000	3.93	2.293	1.31	.983
CD30FD153J	15,000	4.452	2.597	1.484	1.113
CD30FD163J	16,000	4.758	2.776	1.586	1.19
CD30FD183J	18,000	5.28	3.08	1.76	1.32
CD30FD203J	20,000	5.88	3.43	1.96	1.47
CD30FC223J‡	22,000	5.424	3.164	1.808	1.356
CD30FC243J‡	24,000	5.88	3.43	1.96	1.47
CD30FC253J‡	25,000	6.18	3.605	2.06	1.545
CD30FC273J‡	27,000	6.63	3.868	2.21	1.658
CD30FC303J‡	30,000	7.32	4.27	2.44	1.83
CD30FA333J#	33,000	6.474	3.777	2.158	1.619
CD30FA363J#	36,000	7.002	4.085	2.334	1.751
CD42FD203J	20,000	8.28	4.83	2.76	2.07
CD42FD223J	22,000	9.25	5.40	3.09	2.31
CD42FD243J	24,000	9.80	5.72	3.27	2.45
CD42FD273J	27,000	10.80	6.30	3.60	2.70
CD42FD303J	30,000	11.80	6.89	3.94	2.95
CD42FD333J	33,000	12.80	7.47	4.27	3.20
CD42FD363J	36,000	14.70	8.58	4.90	3.68
CD42FD393J	39,000	15.20	8.87	5.07	3.80
CD42FD433J	43,000	16.50	9.63	5.50	4.13
CD42FD473J	47,000	18.00	10.50	6.00	4.50
CD42FD513J	51,000	19.50	11.38	6.50	4.88
CD42FC563J‡	50,000	16.02	9.35	5.34	4.01
CD42FC623J‡	62,000	17.52	10.22	5.84	4.38
CD42FC683J‡	68,000	17.52	10.22	5.84	4.38
CD42FA753J#	75,000	10.40	6.07	3.47	2.60
CD42FA823J#	82,000	10.40	6.07	3.47	2.60
CD42FA913J#	91,000	10.65	6.21	3.55	2.66

*Add final suffix **03** when ordering (e.g., CD19FD362J**03**). ‡300 WVDC. #100 WVDC.
Prices for CD6 (500 WVDC), CD20, CD30 and CD40 on request.

TYPE PM MOLDED CASE MYLAR® TUBULAR CAPACITORS

CORNELL DUBILIER
PM

Mylar® dielectric capacitors housed in an impact and moisture resistant molded case. Dykanol® Y impregnated; insures excellent capacitance stability with changes in temperature. **Operating Temperature:** −55° C to +85° C at full rated voltage; +125° C maximum derated 50%. **Tolerance:** ±10%.

CDE No.	Cap., µF	WV DC	Case Code *	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999★
PM-1S15	.015	100	A	$0.21	$0.15	$0.12	$0.102	$0.085
PM-2D33	.0033	200	A	.21	.15	.12	.102	.085
PM-2D47	.0047	200	A	.21	.15	.12	.102	.085
PM-2D5	.005	200	A	.21	.15	.12	.102	.085
PM-2D68	.0068	200	A	.21	.15	.12	.102	.085
PM-2S1	.01	200	A	.21	.15	.12	.102	.085
PM-2S22	.022	200	C	.21	.15	.12	.102	.085
PM-2S47	.047	200	C	.24	.17	.13	.114	.095
PM-2S5	.05	200	C	.24	.17	.13	.114	.095
PM-2P1	.1	200	D	.24	.17	.13	.114	.095
PM-2P15	.15	200	E	.27	.20	.16	.135	.113
PM-2P22	.22	200	E	.33	.25	.19	.165	.138
PM-2P25	.25	200	F	.33	.25	.19	.165	.138
PM-2P47	.47	200	G	.48	.36	.28	.24	.20
PM-2P5	.5	200	G	.48	.36	.28	.24	.20
PM-2W1	1.0	200	J	.87	.65	.51	.435	.363
PM-4D22	.0022	400	A	.21	.15	.12	.102	.085
PM-4S1	.01	400	B	.21	.15	.12	.102	.085
PM-4S18	.018	400	C	.24	.17	.13	.114	.095
PM-4S22	.022	400	C	.24	.17	.13	.114	.095
PM-4S25	.025	400	C	.24	.17	.13	.114	.095
PM-4S27	.027	400	C	.24	.17	.13	.114	.095
PM-4S33	.033	400	D	.24	.17	.13	.114	.095
PM-4S39	.039	400	D	.24	.18	.14	.12	.10
PM-4S47	.047	400	D	.24	.18	.14	.12	.10
PM-4S5	.05	400	D	.27	.20	.16	.135	.113
PM-4S56	.056	400	E	.27	.20	.16	.135	.113
PM-4S68	.068	400	E	.33	.25	.20	.168	.14
PM-4S82	.082	400	E	.33	.25	.20	.168	.14
PM-4P1	.1	400	E	.33	.25	.20	.168	.14
PM-4P15	.15	400	F	.36	.27	.21	.18	.15
PM-4P18	.18	400	F	.36	.27	.21	.18	.15
PM-4P22	.22	400	G	.45	.33	.26	.219	.183
PM-4P25	.25	400	G	.45	.33	.26	.219	.183
PM-4P27	.27	400	G	.45	.35	.27	.23	.191
PM-4P33	.33	400	H	.48	.36	.28	.24	.20
PM-4P39	.39	400	H	.54	.41	.32	.27	.225
PM-4P47	.47	400	J	.69	.52	.40	.345	.288
PM-4P5	.5	400	J	.69	.52	.40	.345	.288
PM-4P56	.56	400	J	.87	.64	.50	.426	.355
PM-4P68	.68	400	K	1.05	.78	.60	.518	.431

CDE No.	Cap., µF	WV DC	Case Code *	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999★
PM-4P82	.82	400	K	$1.11	$0.83	$0.65	$0.555	$0.463
PM-4W1	1.0	400	K	1.23	.92	.71	.611	.509
PM-6D1	.001	600	A	.21	.17	.13	.11	.091
PM-6D15	.0015	600	A	.21	.17	.13	.11	.091
PM-6D18	.0018	600	B	.21	.17	.13	.11	.091
PM-6D22	.0022	600	B	.21	.17	.13	.11	.091
PM-6D25	.0025	600	B	.21	.17	.13	.11	.091
PM-6D27	.0027	600	B	.21	.17	.13	.11	.091
PM-6D33	.0033	600	B	.21	.17	.13	.11	.091
PM-6D39	.0039	600	B	.21	.17	.13	.11	.091
PM-6D47	.0047	600	B	.21	.17	.13	.11	.091
PM-6D5	.005	600	B	.21	.17	.13	.11	.091
PM-6D56	.0056	600	B	.21	.17	.13	.11	.091
PM-6D68	.0068	600	B	.21	.17	.13	.11	.091
PM-6D82	.0082	600	C	.21	.17	.13	.11	.091
PM-6S1	.01	600	C	.21	.17	.13	.11	.091
PM-6S15	.015	600	C	.21	.17	.13	.11	.091
PM-6S18	.018	600	C	.21	.17	.13	.11	.091
PM-6S22	.022	600	D	.24	.17	.13	.114	.095
PM-6S25	.025	600	D	.24	.17	.13	.114	.095
PM-6S27	.027	600	D	.24	.17	.13	.114	.095
PM-6S33	.033	600	D	.24	.17	.13	.114	.095
PM-6S39	.039	600	D	.24	.18	.14	.12	.10
PM-6S47	.047	600	E	.27	.20	.16	.135	.113
PM-6S5	.05	600	E	.27	.20	.16	.135	.113
PM-6S56	.056	600	E	.27	.20	.16	.135	.113
PM-6S68	.068	600	E	.30	.23	.18	.15	.125
PM-6S82	.082	600	E	.33	.25	.19	.165	.138
PM-6P1	.1	600	F	.36	.27	.21	.18	.15
PM-6P15	.15	600	G	.48	.35	.27	.234	.195
PM-6P18	.18	600	G	.51	.38	.29	.251	.209
PM-6P22	.22	600	G	.54	.41	.32	.275	.229
PM-6P25	.25	600	H	.63	.47	.37	.315	.263
PM-6P27	.27	600	H	.63	.47	.37	.315	.263
PM-6P33	.33	600	J	.75	.55	.43	.368	.306
PM-6P39	.39	600	J	.81	.61	.47	.405	.338
PM-6P47	.47	600	J	.93	.70	.54	.465	.388
PM-6P5	.5	600	J	.96	.71	.55	.473	.394
PM-6P56	.56	600	K	.99	.73	.57	.488	.406

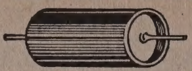
★LARGER QUANTITIES AVAILABLE ON REQUEST.

*CASE CODE

Key	Dia. x Lg., Inches	Key	Dia. x Lg., Inches
A	¼ x ¾	F	9/16 x 1 9/16
B	5/16 x 1	G	⅝ x 1⅞
C	⅜ x 1¼	H	11/16 x 1 15/16
D	7/16 x 1¼	J	¾ x 2¼
E	½ x 1½	K	1 x 2⅛

CDE CORNELL-DUBILIER Capacitors

TYPE WBR WIDE-RANGE TUBULAR ELECTROLYTICS



Aluminum electrolytic capacitors feature welded termination; hermetically sealed, with highly etched cathode and anode foil. With flexible plastic sleeve. **Operating Temperature:** −40° C to +85° C, up to 450 V; to +65° C, up to 700 V.

CDE No. WBR-	Cap., µF	WV DC	Size, In.* Dia. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249
1000-6	1000	6	5/8 x 1 7/16	$1.20	$0.90	$0.70	$0.56
2000-6	2000	6	3/4 x 1 7/16	1.44	1.08	.84	.67
3000-10	3000	10	3/4 x 1 11/16	2.16	1.61	1.25	1.00
4000-10	4000	10	7/8 x 1 11/16	2.55	1.92	1.49	1.19
5000-10	5000	10	7/8 x 2	3.06	2.30	1.79	1.43
10000-10	10,000	10	1 x 2 11/16	4.14	3.10	2.41	1.93
100-16	100	16	5/16 x 3/4	.72	.53	.41	.33
250-16	250	16	3/8 x 1	.93	.69	.54	.43
500-16	500	16	1/2 x 1 7/16	1.11	.83	.64	.51
1000-16	1000	16	5/8 x 1 11/16	1.47	1.10	.86	.69
2000-16	2000	16	3/4 x 2	1.71	1.29	1.00	.80
3000-16	3000	16	3/4 x 2 1/2	2.49	1.86	1.45	1.16
4000-16	4000	16	7/8 x 2 1/2	3.06	2.30	1.79	1.43
5000-16	5000	16	1 x 2 3/16	3.36	2.52	1.96	1.57
10000-16	10,000	16	1 1/8 x 3 9/16	5.31	3.97	3.09	2.47
10-25	10	25	1/4 x 1/2	.60	.44	.34	.27
25-25	25	25	5/16 x 5/8	.63	.46	.36	.29
50-25	50	25	5/16 x 3/4	.66	.48	.38	.30
100-25	100	25	3/8 x 3/4	.78	.57	.45	.36
250-25	250	25	1/2 x 1 7/16	1.08	.80	.63	.50
500-25	500	25	5/8 x 1 7/16	1.44	1.08	.84	.67
1000-25	1000	25	3/4 x 1 11/16	2.43	1.81	1.41	1.13
2000-25	2000	25	3/4 x 2 1/2	2.97	2.23	1.73	1.39
100-35	100	35	3/8 x 1	.78	.57	.45	.36
150-35	150	35	1/2 x 1 1/16	.87	.64	.50	.40
300-35	300	35	5/8 x 1 1/16	1.08	.80	.63	.50
500-35	500	35	5/8 x 1 7/16	1.47	1.10	.86	.69
1000-35	1000	35	3/4 x 1 11/16	2.46	1.84	1.43	1.14
2000-35	2000	35	7/8 x 2 1/2	3.27	2.46	1.91	1.53
3000-35	3000	35	1 x 2 1/2	3.69	2.75	2.14	1.71
5500-35	5500	35	1 1/8 x 3 9/16	5.52	4.13	3.21	2.57
1-50	1	50	1/4 x 1/2	.54	.39	.31	.24
2-50	2	50	1/4 x 1/2	.54	.39	.31	.24
5-50	5	50	1/4 x 1/2	.57	.43	.33	.26
10-50	10	50	3/8 x 5/8	.60	.44	.34	.27
25-50	25	50	3/8 x 5/8	.63	.46	.36	.29
35-50	35	50	3/8 x 3/4	.66	.48	.38	.30
50-50	50	50	3/8 x 7/8	.75	.55	.43	.34
100-50	100	50	1/2 x 1 7/16	.81	.60	.46	.37
125-50	125	50	1/2 x 1 7/16	.84	.62	.48	.39
150-50	150	50	5/8 x 1 1/16	.90	.67	.52	.42
250-50	250	50	5/8 x 1 7/16	1.14	.85	.66	.53
500-50	500	50	3/4 x 1 11/16	1.50	1.13	.88	.70
1000-50	1000	50	7/8 x 2	2.52	1.88	1.47	1.17
1500-50	1500	50	1 x 2 3/16	3.09	2.32	1.80	1.44
2000-50	2000	50	1 x 2 11/16	3.51	2.64	2.05	1.64
3000-50	3000	50	1 x 4 1/16	3.99	2.98	2.32	1.86
5000-50	5000	50	1 3/8 x 3 5/8	5.97	4.48	3.48	2.79
150-75	150	75	5/8 x 1 7/16	.96	.72	.56	.45
275-75	275	75	3/4 x 1 11/16	1.35	1.01	.79	.63
500-75	500	75	7/8 x 2	2.25	1.68	1.30	1.04
1000-75	1000	75	1 x 2 1/2	3.84	2.87	2.23	1.79
2000-75	2000	75	1 3/8 x 2 9/16	5.37	4.02	3.12	2.50
400-100	400	100	7/8 x 2 1/2	1.83	1.38	1.07	.87
600-100	600	100	1 x 2 11/16	2.73	2.06	1.60	1.28
1000-100	1000	100	1 x 4 1/16	4.14	3.10	2.41	1.93
1500-100	1500	100	1 3/8 x 3 5/8	4.44	3.33	2.59	2.07
2000-100	2000	100	1 3/8 x 4 1/8	5.82	4.36	3.39	2.71
4-150	4	150	5/16 x 3/4	.60	.44	.34	.27
5-150	5	150	3/8 x 5/8	.60	.44	.34	.27
8-150	8	150	3/8 x 3/4	.63	.46	.36	.29
10-150	10	150	3/8 x 7/8	.63	.47	.37	.29
16-150	16	150	3/8 x 1	.69	.51	.39	.32
20-150	20	150	3/8 x 1 1/4	.69	.51	.39	.32
30-150	30	150	3/8 x 1 1/2	.75	.55	.43	.34
40-150	40	150	5/8 x 1 7/16	.81	.60	.46	.37
50-150	50	150	5/8 x 1 7/16	.84	.62	.48	.39
60-150	60	150	5/8 x 1 7/16	$0.87	$0.64	$0.50	$0.40
80-150	80	150	3/4 x 1 7/16	.93	.69	.54	.43
100-150	100	150	3/4 x 1 11/16	1.02	.76	.59	.47
150-150	150	150	7/8 x 1 11/16	1.11	.83	.64	.51
160-150	160	150	7/8 x 1 11/16	1.11	.83	.64	.51
200-150	200	150	7/8 x 2	1.35	1.01	.79	.63
250-150	250	150	1 x 1 11/16	1.69	1.26	.98	.79
300-150	300	150	1 x 2 3/16	1.83	1.38	1.07	.87
350-150	350	150	1 x 2 3/16	1.92	1.44	1.12	.90
500-150	500	150	1 1/8 x 2 1/2	3.21	2.40	1.87	1.49
125-180	125	180	3/4 x 2 1/2	1.23	.93	.72	.58
225-180	225	180	7/8 x 2 1/2	1.65	1.24	.97	.77
260-180	260	180	1 x 2 3/16	2.28	1.70	1.32	1.06
400-180	400	180	1 1/8 x 2 1/2	3.00	2.25	1.75	1.40
4-250	4	250	1/2 x 1 1/16	.66	.48	.38	.30
8-250	8	250	1/2 x 1 7/16	.72	.54	.42	.34
12-250	12	250	1/2 x 1 7/16	.78	.57	.45	.36
16-250	16	250	5/8 x 1 1/16	.84	.62	.48	.39
20-250	20	250	3/4 x 1 1/16	.87	.64	.50	.40
30-250	30	250	3/4 x 1 7/16	.93	.69	.54	.43
40-250	40	250	5/8 x 1 11/16	1.02	.76	.59	.47
50-250	50	250	3/4 x 1 11/16	1.11	.83	.64	.51
60-250	60	250	3/4 x 2	1.14	.85	.66	.53
80-250	80	250	7/8 x 1 11/16	1.23	.92	.72	.57
100-250	100	250	7/8 x 2	1.32	.99	.77	.62
160-250	160	250	1 x 2 3/16	1.71	1.29	1.00	.80
225-250	225	250	1 x 2 11/16	2.16	1.61	1.25	1.00
300-250	300	250	1 x 3 9/16	3.21	2.40	1.87	1.49
450-250	450	250	1 3/8 x 3 1/16	3.69	2.75	2.14	1.71
4-350	4	350	1/2 x 1 1/16	.69	.51	.39	.32
8-350	8	350	5/8 x 1 1/16	.75	.55	.43	.34
20-350	20	350	3/4 x 1 7/16	.93	.69	.54	.43
40-350	40	350	3/4 x 1 11/16	1.11	.83	.64	.51
60-350	60	350	3/4 x 2 1/2	1.23	.92	.72	.57
100-350	100	350	1 x 2	1.50	1.13	.88	.70
160-350	160	350	1 1/8 x 2 1/2	2.40	1.79	1.39	1.12
200-350	200	350	1 x 4 1/16	2.43	1.81	1.41	1.13
250-350	250	350	1 1/8 x 3 9/16	3.18	2.39	1.86	1.49
1-450	1	450	5/8 x 1 1/16	.69	.52	.40	.32
2-450	2	450	5/8 x 1 1/16	.72	.53	.41	.33
4-450	4	450	5/8 x 1 1/16	.75	.55	.43	.34
5-450	5	450	5/8 x 1 1/16	.78	.57	.45	.36
8-450	8	450	3/4 x 1 1/16	.81	.60	.46	.37
10-450	10	450	3/4 x 1 1/16	.81	.60	.46	.37
12-450	12	450	3/4 x 1 1/16	.87	.64	.50	.40
16-450	16	450	3/4 x 1 7/16	.93	.69	.54	.43
20-450	20	450	3/4 x 1 11/16	.99	.74	.57	.46
30-450	30	450	7/8 x 1 11/16	1.08	.80	.63	.50
40-450	40	450	7/8 x 2	1.14	.85	.66	.53
50-450	50	450	7/8 x 2 1/2	1.32	.99	.77	.62
60-450	60	450	1 x 2 3/16	1.47	1.10	.86	.69
80-450	80	450	1 x 2 11/16	1.71	1.29	1.00	.80
100-450	100	450	1 x 3 9/16	2.01	1.52	1.18	.94
120-450	120	450	1 1/8 x 3	2.13	1.59	1.23	.99
160-450	160	450	1 1/8 x 4 1/16	2.91	2.18	1.70	1.36
225-450	225	450	1 3/8 x 3 5/8	4.11	3.08	2.39	1.91
1-500	1	500	1/2 x 1 1/16	.75	.55	.43	.34
3-500	3	500	1/2 x 1 7/16	.78	.57	.45	.36
5-500	5	500	5/8 x 1 1/16	.81	.60	.46	.37
8-500	8	500	3/4 x 1 1/16	.84	.62	.48	.39
10-500	10	500	5/8 x 1 11/16	.87	.64	.50	.40
16-500	16	500	3/4 x 1 11/16	.96	.71	.55	.44
20-500	20	500	3/4 x 2	1.02	.76	.59	.47
30-500	30	500	7/8 x 1 11/16	1.14	.85	.66	.53
40-500	40	500	7/8 x 2 1/2	1.59	1.20	.93	.74
60-500	60	500	1 x 2 1/2	1.95	1.47	1.14	.92
4-600	4	600	11/16 x 2 7/16†	1.47	1.10	.86	.69
8-600	8	600	13/16 x 2 7/16†	1.71	1.29	1.00	.80
10-600	10	600	13/16 x 3 3/16†	1.83	1.38	1.07	.87
16-600	16	600	15/16 x 3 3/16†	2.16	1.61	1.25	1.00
20-600	20	600	15/16 x 3 11/16†	2.37	1.76	1.38	1.10
10-700	10	700	15/16 x 3 3/16†	1.89	1.42	1.11	.89
16-700	16	700	15/16 x 4 5/16†	2.31	1.72	1.34	1.07

*Uninsulated case size; add 1/16″ to dia. and 3/16″ to lgth. for size including insulating sleeve. †Overall size, including sleeve.

★LARGER QUANTITY PRICES ON REQUEST.

TYPE DPMS DIPPED PAPER-MYLAR* TUBULAR CAPACITORS

Radial lead capacitors ideal for color TV and other demanding applications; also suitable for point-to-point assembly. Multiple dipped unit has dielectric of high-strength kraft paper and Mylar. Dykanol-Y® impregnant. **Operating Temperature:** −55° to +125° C at full rated voltage. **Tolerance:** ±10%.

*DuPont trademark.

CDE No. DPMS-	Cap., µF	WV DC	Size, In. Dia. x Lg.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
2S2	.020	200	.350 x .855	$0.18	$0.142	$0.11	$0.095	$0.079
2S22	.022	200	.370 x .855	.18	.142	.11	.095	.079
2S47	.047	200	.450 x .855	.21	.153	.119	.102	.085
2S5	.050	200	.450 x .855	.21	.16	.124	.107	.089
2P1	.1	200	.470 x 1.180	.24	.182	.142	.122	.101
2P2	.2	200	.565 x 1.300	.33	.239	.186	.159	.133
2P15	.15	200	.540 x 1.180	.30	.223	.173	.149	.124
2P22	.22	200	.590 x 1.300	.36	.263	.205	.176	.146
2P25	.25	200	.620 x 1.300	.36	.277	.215	.185	.154
2P33	.33	200	.605 x 1.600	.39	.295	.229	.197	.164
2P47	.47	200	.730 x 1.600	.45	.344	.268	.23	.191
2P5	.5	200	.730 x 1.600	.48	.356	.277	.237	.198

CDE No. DPMS-	Cap., µF	WV DC	Size, In. Dia. x Lg.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
4S1	.010	400	.390 x .660	$0.18	$0.142	$0.11	$0.095	$0.079
4S15	.015	400	.430 x .660	.18	.142	.11	.095	.079
4S2	.020	400	.390 x .855	.18	.142	.11	.095	.079
4S22	.022	400	.400 x .855	.18	.142	.11	.095	.079
4S33	.033	400	.440 x .855	.21	.144	.112	.096	.08
4S47	.047	400	.415 x 1.150	.21	.158	.123	.105	.088
4S5	.050	400	.415 x 1.150	.21	.164	.128	.11	.091
4S68	.068	400	.440 x 1.180	.24	.173	.135	.116	.096
4P1	.1	400	.520 x 1.180	.27	.20	.156	.134	.111
4P2	.2	400	.600 x 1.560	.33	.254	.198	.17	.141
4P15	.15	400	.560 x 1.300	.33	.234	.182	.156	.13
4P22	.22	400	.620 x 1.560	.36	.263	.205	.176	.146
4P25	.25	400	.650 x 1.560	.42	.317	.247	.212	.176
4P47	.47	400	.850 x 1.600	.60	.437	.34	.291	.243
4P5	.5	400	.850 x 1.600	.60	.45	.35	.30	.25
6D1	.001	600	.340 x .660	.18	.142	.11	.095	.079
6D12	.0012	600	.340 x .660	.18	.142	.11	.095	.079
6D15	.0015	600	.340 x .660	.18	.142	.11	.095	.079
6D2	.0020	600	.340 x .660	.18	.142	.11	.095	.079
6D22	.0022	600	.340 x .660	.18	.142	.11	.095	.079
6D25	.0025	600	.340 x .660	.18	.142	.11	.095	.079

TYPE DPMS CONTINUED ON NEXT PAGE

TYPE DPMS DIPPED PAPER-MYLAR* TUBULAR CAPACITORS (CONT'D)

CDE No. DPMS-	Cap., µF	WV DC	Size, In. Dia. x Lg.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
6D27	.0027	600	.370 x .660	$0.18	$0.142	$0.11	$0.095	$0.079
6D3	.0030	600	.370 x .660	.18	.142	.11	.095	.079
6D33	.0033	600	.370 x .660	.18	.142	.11	.095	.079
6D39	.0039	600	.370 x .660	.18	.142	.11	.095	.079
6D4	.0040	600	.370 x .660	.18	.142	.11	.095	.079
6D47	.0047	600	.400 x .690	.18	.142	.11	.095	.079
6D5	.0050	600	.400 x .690	.18	.142	.11	.095	.079
6D56	.0056	600	.415 x .690	.18	.142	.11	.095	.079
6D6	.0060	600	.415 x .690	.18	.142	.11	.095	.079
6D68	.0068	600	.430 x .690	.18	.142	.11	.095	.079
6D75	.0075	600	.430 x .690	.18	.142	.11	.095	.079
6D8	.0080	600	.430 x .690	.18	.142	.11	.095	.079
6D82	.0082	600	.370 x .870	.18	.142	.11	.095	.079
6S1	.010	600	.390 x .870	.18	.142	.11	.095	.079
6S12	.012	600	.400 x .870	.18	.142	.11	.095	.079
6S15	.015	600	.415 x .870	.18	.142	.11	.095	.079
6S2	.020	600	.445 x .870	.21	.144	.112	.096	.08
6S22	.022	600	.470 x .870	.21	.144	.112	.096	.08
6S25	.025	600	.500 x .870	.21	.155	.121	.104	.086
6S27	.027	600	.415 x 1.150	.21	.162	.126	.108	.09
6S3	.030	600	.415 x 1.150	.24	.176	.137	.117	.098
6S33	.033	600	.430 x 1.150	.24	.176	.137	.117	.098
6S36	.036	600	.450 x 1.150	.24	.187	.145	.125	.104
6S39	.039	600	.470 x 1.150	.24	.187	.145	.125	.104
6S4	.040	600	.470 x 1.150	.27	.20	.156	.134	.111
6S47	.047	600	.490 x 1.150	.27	.20	.156	.134	.111
6S5	.050	600	.490 x 1.150	.27	.20	.156	.134	.111
6S56	.056	600	.520 x 1.180	.27	.20	.156	.134	.111
6S6	.060	600	.520 x 1.180	.30	.212	.165	.141	.118
6S68	.068	600	.540 x 1.300	.30	.223	.173	.149	.124
6S75	.075	600	.575 x 1.300	.33	.239	.186	.159	.133
6S82	.082	600	.590 x 1.300	.33	.239	.186	.159	.133
6P1	.1	600	.640 x 1.300	.36	.257	.20	.171	.143
6P2	.2	600	.730 x 1.560	.48	.353	.275	.236	.196
6P15	.15	600	.650 x 1.560	.42	.306	.238	.204	.17
6P22	.22	600	.750 x 1.560	.51	.383	.298	.255	.213
6P25	.25	600	.830 x 1.560	.57	.419	.326	.279	.233
6P33	.33	600	.890 x 1.560	.72	.531	.413	.354	.295
16D1	.001	1600	.350 x .870	.21	.162	.126	.108	.09
16D15	.0015	1600	.375 x .870	$0.21	$0.164	$0.128	$0.11	$0.091
16D18	.0018	1600	.400 x .870	.24	.171	.133	.114	.095
16D2	.0020	1600	.405 x .870	.24	.171	.133	.114	.095
16D22	.0022	1600	.420 x .870	.24	.171	.133	.114	.095
16D3	.0030	1600	.475 x .870	.24	.173	.135	.116	.096
16D33	.0033	1600	.480 x .870	.24	.18	.14	.12	.10
16D4	.0040	1600	.520 x .870	.24	.185	.144	.123	.103
16D47	.0047	1600	.540 x .870	.27	.194	.151	.129	.108
16D5	.0050	1600	.565 x .870	.27	.194	.151	.129	.108
16D6	.0060	1600	.460 x 1.180	.27	.196	.152	.131	.109
16D68	.0068	1600	.485 x 1.180	.27	.196	.152	.131	.109
16D7	.0070	1600	.485 x 1.180	.27	.198	.154	.132	.11
16D75	.0075	1600	.495 x 1.180	.27	.20	.156	.134	.111
16D8	.0080	1600	.510 x 1.180	.27	.205	.159	.137	.114
16S1	.010	1600	.525 x 1.180	.30	.216	.168	.144	.12
16S15	.015	1600	.560 x 1.300	.30	.221	.172	.147	.123
16S2	.020	1600	.570 x 1.600	.33	.239	.186	.159	.133
16S22	.022	1600	.585 x 1.600	.36	.268	.208	.179	.149
16S3	.030	1600	.665 x 1.600	.39	.297	.231	.198	.165
16S33	.033	1600	.695 x 1.600	.42	.315	.245	.21	.175
16S4	.040	1600	.735 x 1.600	.45	.326	.254	.218	.181
16S47	.047	1600	.785 x 1.600	.48	.356	.277	.237	.198
16S5	.050	1600	.815 x 1.600	.48	.356	.277	.237	.198
20D1	.001	2000	.360 x .875	.27	.194	.151	.129	.108
20D15	.0015	2000	.400 x .875	.27	.203	.158	.135	.113
20D22	.0022	2000	.440 x .875	.30	.223	.173	.149	.124
20D27	.0027	2000	.415 x 1.187	.30	.225	.175	.15	.125
20D39	.0039	2000	.465 x 1.187	.33	.247	.193	.165	.138
20D47	.0047	2000	.495 x 1.187	.36	.259	.201	.173	.144
20D56	.0056	2000	.560 x 1.187	.36	.263	.205	.176	.146
20D82	.0082	2000	.520 x 1.250	.42	.304	.236	.203	.169
20S12	.012	2000	.600 x 1.250	.48	.349	.271	.233	.194
20S22	.022	2000	.585 x 1.750	.54	.394	.206	.263	.219
20S25	.025	2000	.595 x 1.750	.57	.416	.324	.278	.231
20S27	.027	2000	.625 x 1.750	.60	.439	.341	.293	.244
20S36	.036	2000	.700 x 1.750	.66	.495	.385	.33	.275
20S39	.039	2000	.735 x 1.750	.69	.518	.403	.345	.288
20S47	.047	2000	.785 x 1.750	.72	.54	.42	.36	.30
20S5	.050	2000	.800 x 1.750	.75	.551	.429	.368	.306

TYPE NLW SUBMINIATURE ELECTROLYTIC CAPACITORS

Smallest subminiature electrolytic capacitors. Welded construction, hermetically sealed in an aluminum case and provided with plastic insulating sleeve. **Temp. Range:** −40° to +105° C. **Tolerance:** −10%, +75%.

CDE No.†	Cap. µF	Size*, In. D. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
NLW 25-3	25	¼ x ½	$0.54	$0.373	$0.296	$0.226	$0.187
NLW 35-3	35	¼ x ½	.54	.373	.296	.226	.187
NLW 75-3	75	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 100-3	100	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 125-3	125	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 150-3	150	⁵⁄₁₆ x ⅝	.78	.528	.418	.319	.264
NLW 175-3	175	⁵⁄₁₆ x ¾	.78	.528	.418	.319	.264
NLW 200-3	200	⁵⁄₁₆ x ¾	.78	.528	.418	.319	.264
NLW 250-3	250	⅜ x ¾	.81	.552	.437	.334	.276
NLW 300-3	300	⅜ x ¾	.81	.552	.437	.334	.276
NLW 350-3	350	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 400-3	400	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 450-3	450	⅜ x ⅞	.87	.60	.475	.363	.30
NLW 500-3	500	⅜ x 1	.87	.60	.475	.363	.30
NLW 1000-3	1000	⅜ x 1½	.96	.685	.543	.414	.349
NLW 10-6	10	¼ x ½	.54	.373	.296	.226	.187
NLW 20-6	20	¼ x ½	.54	.373	.296	.226	.187
NLW 30-6	30	¼ x ½	.54	.373	.296	.226	.187
NLW 35-6	35	¼ x ½	.54	.373	.296	.226	.187
NLW 40-6	40	¼ x ½	.54	.373	.296	.226	.187
NLW 50-6	50	¼ x ⅝	.60	.42	.333	.254	.21
NLW 100-6	100	⁵⁄₁₆ x ⅝	.78	.528	.418	.319	.264
NLW 150-6	150	⁵⁄₁₆ x ¾	.81	.552	.437	.334	.276
NLW 175-6	175	⁵⁄₁₆ x ¾	.81	.552	.437	.334	.276
NLW 200-6	200	⅜ x ¾	.81	.552	.437	.334	.276
NLW 250-6	250	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 300-6	300	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 350-6	350	⅜ x ⅞	.87	.60	.475	.363	.30
NLW 500-6	500	⅜ x 1¼	.90	.624	.494	.377	.312
NLW 600-6	600	⅜ x 1¼	.93	.638	.505	.386	.319
NLW 800-6	800	⅜ x 1½	.96	.685	.543	.414	.349
NLW 8-10	8	¼ x ½	.54	.373	.296	.226	.187
NLW 40-10	40	¼ x ⅝	.54	.373	.296	.226	.187
NLW 50-10	50	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 75-10	75	⁵⁄₁₆ x ⅝	.78	.528	.418	.319	.264
NLW 125-10	125	⁵⁄₁₆ x ¾	.81	.552	.437	.334	.276
NLW 150-10	150	⅜ x ¾	.84	.576	.456	.348	.288
NLW 225-10	225	⅜ x ⅞	.87	.60	.475	.363	.30
NLW 450-10	450	⅜ x 1¼	.93	.638	.505	.386	.319
NLW 15-12	15	¼ x ½	.54	.373	.296	.226	.187
NLW 25-12	25	¼ x ½	.54	.373	.296	.226	.187
NLW 30-12	30	¼ x ½	.54	.373	.296	.226	.187
NLW 35-12	35	¼ x ⅝	.54	.373	.296	.226	.187
NLW 40-12	40	¼ x ⅝	.60	.42	.333	.254	.21
NLW 75-12	75	⁵⁄₁₆ x ⅝	.78	.528	.418	.319	.264
NLW 100-12	100	⁵⁄₁₆ x ¾	.81	.552	.437	.334	.276
NLW 125-12	125	⅜ x ⅝	$0.81	$0.552	$0.437	$0.334	$0.276
NLW 175-12	175	⅜ x ¾	.84	.576	.456	.348	.288
NLW 200-12	200	⅜ x ⅞	.87	.60	.475	.363	.30
NLW 250-12	250	⅜ x ⅞	.87	.60	.475	.363	.30
NLW 300-12	300	⅜ x 1	.87	.60	.475	.363	.30
NLW 400-12	400	⅜ x 1¼	.93	.638	.505	.386	.319
NLW 500-12	500	⅜ x 1½	.96	.685	.543	.414	.349
NLW 4-16	4	¼ x ½	.54	.373	.296	.226	.187
NLW 5-16	5	¼ x ½	.54	.373	.296	.226	.187
NLW 6-16	6	¼ x ½	.54	.373	.296	.226	.187
NLW 10-16	10	¼ x ½	.54	.373	.296	.226	.187
NLW 15-16	15	¼ x ½	.54	.373	.296	.226	.187
NLW 20-16	20	¼ x ½	.54	.373	.296	.226	.187
NLW 25-16	25	¼ x ⅝	.54	.373	.296	.226	.187
NLW 30-16	30	¼ x ⅝	.60	.42	.333	.254	.21
NLW 40-16	40	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 50-16	50	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 75-16	75	⁵⁄₁₆ x ¾	.78	.528	.418	.319	.264
NLW 100-16	100	⁵⁄₁₆ x ¾	.81	.552	.437	.334	.276
NLW 125-16	125	⅜ x ¾	.81	.552	.437	.334	.276
NLW 150-16	150	⅜ x ¾	.84	.576	.456	.348	.288
NLW 175-16	175	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 200-16	200	⅜ x ⅞	.87	.60	.475	.363	.30
NLW 250-16	250	⅜ x 1	.87	.60	.475	.363	.30
NLW 300-16	300	⅜ x 1¼	.90	.624	.494	.377	.312
NLW 350-16	350	⅜ x 1¼	.90	.624	.494	.377	.312
NLW 400-16	400	⅜ x 1½	.96	.685	.543	.414	.349
NLW 450-16	450	⅜ x 1½	.96	.685	.543	.414	.349
NLW 600-16	600	⅜ x 1½	.96	.685	.543	.414	.349
NLW 1-25	1	¼ x ½	.54	.373	.296	.226	.187
NLW 2-25	2	¼ x ½	.54	.373	.296	.226	.187
NLW 3-25	3	¼ x ½	.54	.373	.296	.226	.187
NLW 5-25	5	¼ x ½	.54	.373	.296	.226	.187
NLW 6-25	6	¼ x ½	.54	.373	.296	.226	.187
NLW 8-25	8	¼ x ½	.54	.373	.296	.226	.187
NLW 10-25	10	¼ x ½	.54	.373	.296	.226	.187
NLW 15-25	15	¼ x ½	.54	.373	.296	.226	.187
NLW 20-25	20	¼ x ⅝	.60	.42	.333	.254	.21
NLW 25-25	25	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 30-25	30	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 35-25	35	⁵⁄₁₆ x ⅝	.60	.42	.333	.254	.21
NLW 40-25	40	⁵⁄₁₆ x ⅝	.78	.528	.418	.319	.264
NLW 50-25	50	⁵⁄₁₆ x ¾	.78	.528	.418	.319	.264
NLW 75-25	75	⅜ x ¾	.81	.552	.437	.334	.276
NLW 100-25	100	⅜ x ¾	.84	.576	.456	.348	.288
NLW 125-25	125	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 150-25	150	⅜ x 1	.87	.60	.475	.363	.30
NLW 175-25	175	⅜ x 1¼	.93	.638	.505	.386	.319
NLW 200-25	200	⅜ x 1¼	.93	.638	.505	.386	.319
NLW 250-25	250	⅜ x 1½	.96	.685	.543	.414	.349
NLW 300-25	300	⅜ x 1½	.96	.685	.543	.414	.349

*Add 1/32″ x 1/16″ for overall size. †Suffix indicates WVDC (e.g., NLW 150-6 is rated 6 WVDC).

★LARGER QUANTITIES AVAILABLE ON REQUEST

TYPE NLW CONTINUED ON NEXT PAGE

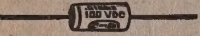
TYPE NLW SUBMINIATURE ELECTROLYTIC CAPACITORS (CONT'D)

CDE No.†	Cap. µF	Size*, In. D. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
NLW 1-50	1	¼ x ½	$0.54	$0.373	$0.296	$0.226	$0.187
NLW 2-50	2	¼ x ½	.54	.373	.296	.226	.187
NLW 3-50	3	¼ x ½	.54	.373	.296	.226	.187
NLW 4-50	4	¼ x ½	.54	.373	.296	.226	.187
NLW 5-50	5	¼ x ½	.54	.373	.296	.226	.187
NLW 6-50	6	¼ x ½	.54	.373	.296	.226	.187
NLW 8-50	8	¼ x ⅝	.54	.373	.296	.226	.187
NLW 10-50	10	¼ x ⅝	.60	.42	.333	.254	.21
NLW 15-50	15	5/16 x ⅝	.60	.42	.333	.254	.21
NLW 20-50	20	5/16 x ⅝	.78	.528	.418	.319	.264
NLW 25-50	25	5/16 x ¾	.78	.528	.418	.319	.264
NLW 30-50	30	⅜ x ⅝	.81	.552	.437	.334	.276
NLW 35-50	35	⅜ x ¾	.81	.552	.437	.334	.276
NLW 40-50	40	⅜ x ¾	.84	.576	.456	.348	.288
NLW 50-50	50	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 75-50	75	⅜ x 1	.87	.60	.475	.363	.30
NLW 100-50	100	⅜ x 1¼	.90	.624	.494	.377	.312
NLW 125-50	125	⅜ x 1½	.96	.685	.543	.414	.349
NLW 2-100	2	¼ x ½	.60	.42	.333	.254	.21
NLW 4-100	4	5/16 x ⅝	.69	.469	.372	.284	.235
NLW 5-100	5	5/16 x ⅝	.78	.528	.418	.319	.264

*Add 1/32" x 1/16" for overall size. †Suffix indicates WVDC (e.g., NLW 150-**6** is rated 6 WVDC).

CDE No.†	Cap. µF	Size*, In. D. x L.	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
NLW 6-100	6	5/16 x ⅝	$0.78	$0.528	$0.418	$0.319	$0.264
NLW 8-100	8	⅜ x ⅝	.81	.552	.437	.334	.276
NLW 10-100	10	⅜ x ¾	.81	.552	.437	.334	.276
NLW 15-100	15	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 20-100	20	⅜ x 1	.87	.60	.475	.363	.30
NLW 25-100	25	⅜ x 1	.90	.624	.494	.377	.312
NLW 30-100	30	⅜ x 1¼	.93	.638	.505	.386	.319
NLW 40-100	40	⅜ x 1½	.96	.685	.543	.414	.349
NLW 1-150	1	¼ x ½	.60	.42	.333	.254	.21
NLW 2-150	2	¼ x ⅝	.60	.42	.333	.254	.21
NLW 3-150	3	5/16 x ⅝	.69	.469	.372	.284	.235
NLW 4-150	4	5/16 x ¾	.78	.528	.418	.319	.264
NLW 5-150	5	5/16 x ¾	.78	.528	.418	.319	.264
NLW 6-150	6	⅜ x ¾	.81	.552	.437	.334	.276
NLW 8-150	8	⅜ x ¾	.81	.552	.437	.334	.276
NLW 10-150	10	⅜ x ⅞	.84	.576	.456	.348	.288
NLW 12-150	12	⅜ x 1	.87	.60	.475	.363	.30
NLW 15-150	15	⅜ x 1¼	.87	.60	.475	.363	.30
NLW 18-150	18	⅜ x 1¼	.90	.624	.494	.377	.312
NLW 20-150	20	⅜ x 1½	.93	.638	.505	.386	.319
NLW 25-150	25	⅜ x 1½	.96	.685	.543	.414	.349

★LARGER QUANTITIES AVAILABLE ON REQUEST



TYPE WMF MYLAR® DIELECTRIC FILM-ENCASED CAPACITORS

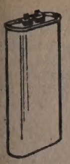
Ultra-compact Mylar dielectric in Mylar film wrap; thermosetting epoxy end seals. High resistance to humidity. Excellent stability. **Temp:** −55° C to +85° C at full voltage; derate 10% at 100° C; 50% at 125° C. **Tol.:** ±10%. Other tolerances also available; prices on request. ®Reg. DuPont TM.

CDE No.	Cap., µF	WVDC	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
WMF05P1	.1	50	$0.36	$0.26	$0.21	$0.177	$0.147
WMF05P12	.12	50	.36	.28	.21	.181	.15
WMF05P15	.15	50	.36	.28	.21	.182	.152
WMF05P18	.18	50	.36	.29	.22	.187	.155
WMF05P22	.22	50	.40	.29	.23	.191	.16
WMF05P27	.27	50	.43	.32	.24	.21	.175
WMF05P33	.33	50	.46	.34	.26	.228	.19
WMF05P39	.39	50	.50	.39	.30	.253	.21
WMF05P47	.47	50	.56	.42	.33	.279	.232
WMF05P5	.50	50	.56	.43	.33	.284	.237
WMF05P56	.56	50	.66	.51	.40	.333	.278
WMF05P68	.68	50	.73	.54	.42	.355	.296
WMF05P82	.82	50	.89	.66	.52	.438	.364
WMF05W1	1.0	50	.99	.75	.59	.497	.414
WMF05W2	2.0	50	1.65	1.23	.96	.821	.685
WMF05W3	3.0	50	2.31	1.73	1.34	1.16	.96
WMF05W4	4.0	50	2.74	2.05	1.58	1.36	1.13
WMF05W5	5.0	50	3.40	2.55	1.98	1.71	1.42
WMF1D1	.001	100	.30	.22	.17	.144	.12
WMF1D12	.0012	100	.30	.22	.17	.144	.12
WMF1D15	.0015	100	.30	.22	.17	.144	.12
WMF1D18	.0018	100	.30	.22	.17	.144	.12
WMF1D22	.0022	100	.30	.22	.17	.144	.12
WMF1D27	.0027	100	.30	.22	.17	.144	.12
WMF1D33	.0033	100	.30	.22	.17	.144	.12
WMF1D39	.0039	100	.30	.22	.17	.144	.12
WMF1D47	.0047	100	.30	.22	.17	.144	.12
WMF1D5	.0050	100	.30	.22	.17	.144	.12
WMF1D56	.0056	100	.30	.22	.17	.144	.12
WMF1D68	.0068	100	.30	.22	.17	.144	.12
WMF1D82	.0082	100	.30	.22	.17	.144	.12
WMF1S1	.01	100	.30	.22	.17	.144	.12
WMF1S12	.012	100	.30	.22	.17	.144	.12
WMF1S15	.015	100	.30	.22	.17	.144	.12
WMF1S18	.018	100	.30	.22	.17	.144	.12
WMF1S22	.022	100	.30	.22	.17	.144	.12
WMF1S27	.027	100	.30	.22	.17	.144	.12
WMF1S33	.033	100	.30	.22	.17	.144	.12
WMF1S39	.039	100	.30	.22	.17	.144	.12
WMF1S47	.047	100	.30	.23	.18	.151	.125
WMF1S5	.050	100	.30	.23	.18	.151	.125
WMF1S56	.056	100	.33	.23	.19	.155	.13
WMF1S68	.068	100	.33	.24	.19	.158	.132
WMF1S82	.082	100	.33	.24	.19	.161	.133
WMF1P1	.1	100	.33	.24	.19	.162	.135
WMF1P12	.12	100	.33	.24	.19	.164	.136
WMF1P15	.15	100	.33	.25	.20	.165	.138
WMF1P18	.18	100	.33	.25	.20	.171	.142
WMF1P22	.22	100	.36	.26	.21	.174	.144
WMF1P27	.27	100	.40	.29	.22	.191	.16
WMF1P33	.33	100	.43	.31	.24	.208	.174
WMF1P39	.39	100	.46	.35	.28	.231	.193
WMF1P47	.47	100	.50	.37	.30	.253	.21
WMF1P5	.50	100	.53	.39	.30	.257	.215
WMF1P56	.56	100	.59	.46	.35	.303	.252
WMF1P68	.68	100	.66	.48	.37	.323	.27
WMF1P82	.82	100	.79	.59	.46	.398	.331
WMF1W1	1.0	100	.92	.68	.53	.452	.377
WMF1W1P25	1.25	100	1.06	.78	.61	.52	.433
WMF1W1P5	1.5	100	1.22	.92	.72	.616	.513
WMF1W2	2.0	100	1.49	1.12	.87	.746	.622
WMF1W3	3.0	100	2.11	1.57	1.22	1.05	.872
WMF1W4	4.0	100	2.48	1.85	1.44	1.23	1.03
WMF2D1	.001	200	.30	.22	.17	.144	.12
WMF2D15	.0015	200	.30	.22	.17	.144	.12

CDE No.	Cap., µF	WVDC	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
WMF2D22	.0022	200	$0.30	$0.22	$0.17	$0.144	$0.12
WMF2D33	.0033	200	.30	.22	.17	.144	.12
WMF2D47	.0047	200	.30	.22	.17	.144	.12
WMF2D68	.0068	200	.30	.22	.17	.144	.12
WMF2S1	.01	200	.30	.22	.17	.144	.12
WMF2S15	.015	200	.30	.22	.17	.144	.12
WMF2S22	.022	200	.30	.22	.17	.144	.12
WMF2S33	.033	200	.30	.22	.17	.144	.12
WMF2S47	.047	200	.30	.23	.18	.151	.125
WMF2S68	.068	200	.33	.24	.19	.158	.132
WMF2P1	.1	200	.40	.29	.22	.191	.16
WMF2P15	.15	200	.40	.31	.24	.204	.17
WMF2P22	.22	200	.43	.32	.25	.215	.179
WMF2P33	.33	200	.50	.36	.29	.243	.202
WMF2P47	.47	200	.56	.42	.32	.276	.23
WMF2P68	.68	200	.66	.48	.37	.323	.27
WMF2W1	1.0	200	.92	.68	.53	.452	.377
WMF2W1P25	1.25	200	1.06	.78	.61	.52	.433
WMF2W1P5	1.5	200	1.22	.92	.72	.616	.513
WMF2W2	2.0	200	1.49	1.12	.87	.746	.622
WMF4D1	.001	400	.33	.24	.19	.164	.136
WMF4D15	.0015	400	.33	.24	.19	.164	.136
WMF4D22	.0022	400	.33	.24	.19	.164	.136
WMF4D33	.0033	400	.33	.24	.19	.164	.136
WMF4D47	.0047	400	.33	.24	.19	.164	.136
WMF4D68	.0068	400	.33	.24	.19	.164	.136
WMF4S1	.01	400	.33	.24	.19	.164	.136
WMF4S15	.015	400	.33	.24	.19	.164	.136
WMF4S22	.022	400	.33	.24	.19	.164	.136
WMF4S33	.033	400	.33	.24	.19	.164	.136
WMF4S47	.047	400	.33	.25	.20	.171	.142
WMF4S68	.068	400	.36	.28	.21	.182	.152
WMF4P1	.1	400	.36	.28	.22	.185	.154
WMF4P15	.15	400	.40	.29	.22	.191	.16
WMF4P22	.22	400	.46	.33	.26	.221	.185
WMF4P33	.33	400	.73	.54	.42	.36	.30
WMF4P47	.47	400	.86	.64	.51	.428	.356
WMF4P68	.68	400	1.06	.78	.62	.524	.436
WMF4W1	1.0	400	1.25	.94	.73	.623	.518
WMF4W1P25	1.25	400	1.39	1.02	.80	.683	.57
WMF4W1P5	1.5	400	1.55	1.17	.90	.774	.645
WMF4W2	2.0	400	2.05	1.53	1.19	1.02	.846
WMF6D1	.001	600	.36	.29	.22	.187	.155
WMF6D15	.0015	600	.36	.29	.22	.187	.155
WMF6D22	.0022	600	.36	.29	.22	.187	.155
WMF6D33	.0033	600	.36	.29	.22	.187	.155
WMF6D47	.0047	600	.36	.29	.22	.187	.155
WMF6D68	.0068	600	.36	.29	.22	.187	.155
WMF6S1	.01	600	.36	.29	.22	.187	.155
WMF6S15	.015	600	.36	.29	.22	.187	.155
WMF6S22	.022	600	.36	.29	.22	.187	.155
WMF6S33	.033	600	.36	.29	.22	.187	.155
WMF6S47	.047	600	.36	.29	.22	.187	.155
WMF6S68	.068	600	.40	.30	.23	.195	.163
WMF6P1	.1	600	.50	.36	.29	.241	.201
WMF6P15	.15	600	.50	.37	.30	.253	.21
WMF6P22	.22	600	.59	.43	.34	.287	.24
WMF6P33	.33	600	.99	.74	.57	.491	.408
WMF6P47	.47	600	1.25	.95	.74	.629	.524
WMF6P68	.68	600	1.68	1.27	.99	.844	.703
WMF6W1	1.0	600	2.67	1.99	1.55	1.33	1.11
WMF6W1P25	1.25	600	2.87	2.16	1.67	1.44	1.20
WMF6W1P5	1.5	600	3.47	2.60	2.02	1.74	1.44
WMF6W2	2.0	600	4.36	3.27	2.54	2.18	1.82

GENERAL ELECTRIC DC Paper-Oil Capacitors

Paper/Pyranol® capacitors for filtering, blocking, bypass, arc suppression and other general-purpose DC circuit applications. Available in drawn oval or rectangular cases, with covers sealed by special double-rolled seam process. Smaller, lighter in weight, and lower in cost than fabricated-construction types. Temperature range, −55° to +85° C with proper derating. Voltage ratings specified at 40° C. Can also be used for AC applications, as indicated. Tolerance, ±10%. Solder eyelet terminals on 400–1500 VDC types; screw terminals on all capacitors rated 2000 volts and up. Unpainted cases; for painted cases, add suffix **G2** to GE Type Number, and add **11c** to price.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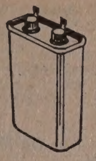
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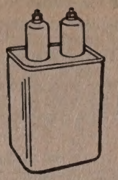

C

DRAWN OVAL CAPACITORS (FIG. A)

For footed bracket, add **20c** to price (for case heights of 4.68″, 5.75″, 6.25″, 6.75″, 7.25″, 8.00″ and 9.25″, add **30c**).

400 VOLTS DC (236 VAC)

GE Type	μF	Size, Inches		Net Each, Lots of				
		*	H.	1-9	10-24	25-49	50-99	100-999
23F1201	4.0	A	2.32	**$ 4.68**	**$ 2.93**	**$ 2.11**	**$1.64**	**$1.40**
23F1203	6.0	A	2.82	**5.76**	**3.60**	**2.59**	**2.02**	**1.73**
23F1204	8.0	A	3.82	**6.96**	**4.35**	**3.13**	**2.44**	**2.09**
23F1205	10.0	A	4.18	**8.12**	**5.08**	**3.65**	**2.84**	**2.44**
23F1208	20.0	B	4.50	**15.44**	**9.65**	**6.95**	**5.40**	**4.63**
23F1209	25.0	B	5.25	**17.84**	**11.15**	**8.03**	**6.24**	**5.35**
23F1210	30.0	B	6.25	**21.16**	**13.23**	**9.52**	**7.41**	**6.35**

600 VOLTS DC (330 VAC)

23F1211	2.0	A	2.06	**$ 3.64**	**$ 2.28**	**$ 1.64**	**$1.27**	**$1.09**
23F1212	3.0	A	2.32	**4.60**	**2.88**	**2.07**	**1.61**	**1.38**
23F1213	4.0	A	2.56	**5.20**	**3.25**	**2.34**	**1.82**	**1.56**
23F1214	5.0	A	3.06	**5.92**	**3.70**	**2.66**	**2.07**	**1.78**
23F1215	6.0	A	3.82	**6.72**	**4.20**	**3.02**	**2.35**	**2.02**
23F1216	8.0	A	4.68	**7.84**	**4.90**	**3.53**	**2.74**	**2.35**
23F1217	10.0	B	3.50	**9.56**	**5.98**	**4.30**	**3.35**	**2.87**
23F1218	12.0	B	3.88	**10.60**	**6.63**	**4.77**	**3.71**	**3.18**
23F1219	15.0	B	4.50	**12.16**	**7.60**	**5.47**	**4.26**	**3.65**
23F1220	20.0	B	5.75	**15.28**	**9.55**	**6.88**	**5.35**	**4.58**
23F1221	25.0	B	7.25	**18.72**	**11.70**	**8.42**	**6.55**	**5.62**
23F1222	30.0	C	6.25	**23.08**	**14.43**	**10.39**	**8.08**	**6.92**
23F1223	35.0	C	7.25	**26.12**	**16.33**	**11.75**	**9.14**	**7.84**

1000 VOLTS DC (440 VAC)

23F1225	2.0	A	2.32	**$ 3.88**	**$ 2.43**	**$ 1.75**	**$1.36**	**$1.16**
23F1226	3.0	A	3.06	**4.68**	**2.93**	**2.11**	**1.64**	**1.40**
23F1227	4.0	A	3.82	**5.52**	**3.45**	**2.48**	**1.93**	**1.66**
23F1228	5.0	A	4.68	**6.20**	**3.88**	**2.79**	**2.17**	**1.86**
23F1229	6.0	B	3.50	**7.64**	**4.78**	**3.44**	**2.67**	**2.29**
23F1230	8.0	B	4.25	**8.76**	**5.48**	**3.94**	**3.07**	**2.63**
23F1231	10.0	B	5.25	**10.48**	**6.55**	**4.72**	**3.67**	**3.14**
23F1232	12.0	B	5.75	**11.64**	**7.28**	**5.24**	**4.07**	**3.49**
23F1233	15.0	B	7.25	**14.00**	**8.75**	**6.30**	**4.90**	**4.20**
23F1234	20.0	C	7.25	**18.52**	**11.58**	**8.33**	**6.48**	**5.56**
23F1235	25.0	C	9.25	**22.56**	**14.10**	**10.15**	**7.90**	**6.77**

1500 VOLTS DC (660 VAC)

23F1236	1.0	A	2.06	**$ 3.48**	**$ 2.18**	**$1.57**	**$1.22**	**$1.04**
23F1237	2.0	A	3.44	**4.80**	**3.00**	**2.16**	**1.68**	**1.44**
23F1238	3.0	A	4.68	**6.20**	**3.88**	**2.79**	**2.17**	**1.86**
23F1239	4.0	B	3.50	**7.84**	**4.90**	**3.53**	**2.74**	**2.35**
23F1240	5.0	B	4.25	**9.12**	**5.70**	**4.10**	**3.19**	**2.74**
23F1241	6.0	B	4.75	**9.80**	**6.13**	**4.41**	**3.43**	**2.94**
23F1242	8.0	B	6.25	**12.36**	**7.73**	**5.56**	**4.33**	**3.71**
23F1243	10.0	C	5.75	**16.28**	**10.18**	**7.33**	**5.70**	**4.88**
23F1244	12.0	C	6.75	**18.80**	**11.75**	**8.46**	**6.58**	**5.64**

2000 VOLTS DC (700 VAC)

23F1271	0.1	A	2.06	**$ 3.20**	**$ 2.00**	**$1.44**	**$1.12**	**$0.96**
23F1272	0.25	A	2.06	**3.60**	**2.25**	**1.62**	**1.26**	**1.08**
23F1273	0.5	A	2.06	**4.20**	**2.63**	**1.89**	**1.47**	**1.26**
23F1245	1.0	A	2.82	**4.80**	**3.00**	**2.16**	**1.68**	**1.44**
23F1246	2.0	A	4.68	**6.40**	**4.00**	**2.88**	**2.24**	**1.92**
23F1247	3.0	B	3.50	**7.96**	**4.98**	**3.58**	**2.79**	**2.39**
23F1248	4.0	B	4.25	**9.52**	**5.95**	**4.28**	**3.33**	**2.86**
23F1249	5.0	B	5.25	**11.08**	**6.93**	**4.99**	**3.88**	**3.32**
23F1251	8.0	C	6.25	**15.84**	**9.90**	**7.13**	**5.54**	**4.75**
23F1252	10.0	C	7.25	**18.92**	**11.83**	**8.51**	**6.62**	**5.68**

2500 VOLTS DC (800 VAC)

23F1253	0.5	B	2.12	**$ 9.40**	**$ 5.88**	**$ 4.23**	**$3.29**	**$2.82**
23F1260	7.5	C	7.25	**27.80**	**17.38**	**12.51**	**9.73**	**8.34**

3000 VOLTS DC (950 VAC)

23F1274	0.25	A	2.32	**$10.24**	**$ 6.40**	**$ 4.61**	**$3.58**	**$3.07**
23F1261	0.5	B	2.38	**11.00**	**6.88**	**4.95**	**3.85**	**3.30**
23F1262	1.0	B	3.12	**11.60**	**7.25**	**5.22**	**4.06**	**3.48**
23F1263	2.0	B	4.75	**15.20**	**9.50**	**6.84**	**5.32**	**4.56**
23F1265	4.0	C	6.25	**22.00**	**13.75**	**9.90**	**7.70**	**6.60**

*Base size: A, 2.16″ w. x 1.31″ d.; B, 2.91″ w. x 1.91″ d.; C, 3.66″ w. x 1.97″ d.; height shown in tables.

MINIATURE DRAWN RECTANGULAR DC CAPACITORS (FIG. B)

Rated 400 VDC (236 VAC), 600 VDC (330 VAC), 1000 VDC (440 VAC), or 1500 VDC (660 VAC). **Size:** 1 5/16″ w. x 23/32″ d. (height shown in table); terminals 7/16″ high. For footed bracket, add **20c** to price.

GE Type	Cap., μF	VDC	H., In.	Net Each, Lots of				
				1-9	10-24	25-49	50-99	100-999
23F959	1.0	400	1⅝	**$4.80**	**$3.00**	**$2.16**	**$1.68**	**$1.44**
23F699	2.0	400	2¾	**5.28**	**3.30**	**2.38**	**1.85**	**1.58**
23F465	.25	600	1 1/16	**4.60**	**2.88**	**2.07**	**1.61**	**1.38**
23F466	.50	600	1⅝	**4.80**	**3.00**	**2.16**	**1.68**	**1.44**
23F467	1.0	600	2	**4.92**	**3.08**	**2.21**	**1.72**	**1.48**
23F471	.10	1000	1 1/16	**4.60**	**2.88**	**2.07**	**1.61**	**1.38**
23F472	.25	1000	1⅜	**4.72**	**2.95**	**2.12**	**1.65**	**1.42**
23F473	.50	1000	2	**4.92**	**3.08**	**2.21**	**1.72**	**1.48**
23F468	.01	1500	1 1/16	**4.52**	**2.83**	**2.03**	**1.58**	**1.36**
23F469	.02	1500	1 1/16	**4.56**	**2.85**	**2.05**	**1.60**	**1.37**
23F470	.05	1500	1 1/16	**4.60**	**2.88**	**2.07**	**1.61**	**1.38**
23F962	.10	1500	1 1/16	**4.68**	**2.93**	**2.11**	**1.64**	**1.40**
23F963	.25	1500	1⅝	**4.88**	**3.05**	**2.20**	**1.71**	**1.46**

HIGH VOLTAGE RECTANGULAR DC CAPACITORS (FIG. C)

Also available with footed bracket; write for prices.

4000 VOLTS DC (1250 VAC)

GE Type	Cap., μF	Size, Inches		Net Each, Lots of				
		*	H.	1-9	10-24	25-49	50-99	100-999
23F1123	.50	A	4¼	**$13.72**	**8.58**	**$ 6.17**	**$ 4.80**	**$ 4.12**
23F1124	1.0	C	3⅞	**17.92**	**11.20**	**8.06**	**6.27**	**5.38**
23F1125	2.0	E	4½	**25.00**	**15.63**	**11.25**	**8.75**	**7.50**
23F1126	4.0	F	5⅛	**32.68**	**20.43**	**14.71**	**11.44**	**9.80**
23F1127	6.0	F	7	**44.20**	**27.63**	**19.89**	**15.47**	**13.26**
23F1128	8.0	F	9⅝	**55.68**	**34.80**	**25.06**	**19.49**	**16.70**

5000 VOLTS DC (1600 VAC)

23F1129	.05	A	2½	**$12.44**	**$ 7.78**	**$ 5.60**	**$ 4.35**	**$ 3.73**
23F1130	.10	A	2½	**12.44**	**7.78**	**5.60**	**4.35**	**3.73**
23F1134	2.0	F	4⅜	**29.84**	**18.65**	**13.43**	**10.44**	**8.95**
23F1135	4.0	F	7	**47.52**	**29.70**	**21.38**	**16.63**	**14.26**

6000 VOLTS DC (1900 VAC)

23F1137	.10	C	3¼	**$24.80**	**$15.50**	**$11.16**	**$ 8.68**	**$ 7.44**
23F1139	1.0	E	5⅛	**34.64**	**21.65**	**15.59**	**12.12**	**10.39**
23F1140	2.0	F	6	**42.80**	**26.75**	**19.26**	**14.98**	**12.84**

7500 VOLTS DC

23F1142	.10	C	3¼	**$23.80**	**$14.88**	**$10.71**	**$ 8.33**	**$ 7.14**
23F1143	.25	C	3⅞	**24.28**	**15.18**	**10.93**	**8.50**	**7.28**
23F1145	1.0	F	4¾	**38.80**	**24.25**	**17.46**	**13.58**	**11.64**
23F1146	2.0	F	8½	**52.76**	**32.98**	**23.74**	**18.47**	**15.83**

10,000 VOLTS DC

23F1149	.50	F	4⅜	**$38.00**	**$23.75**	**$17.10**	**$13.30**	**$11.40**
23F1150	1.0	F	7½	**57.24**	**35.78**	**25.76**	**20.03**	**17.17**

12,500 VOLTS DC

23F1154	.50	F	6	**$48.12**	**$30.08**	**$21.65**	**$16.84**	**$14.44**

*Base size: A, 2½″ x 1 3/16″; B, 3¾″ x 1¼″; C, 3¾″ x 1¾″; E, 3¾″ x 3 3/16″; F, 4 9/16″ x 3¾″. Capacitor heights shown in tables above.

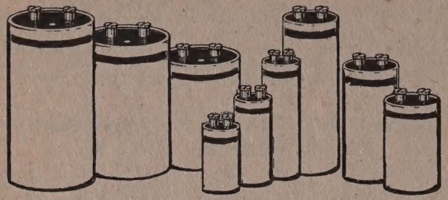
AS NEW INNOVATIONS IN CAPACITOR DESIGN BECOME AVAILABLE FROM

GENERAL ELECTRIC,

WE SHALL HAVE THEM IN STOCK FOR YOUR CONVENIENCE

GENERAL ELECTRIC Computer Grade Capacitors

SERIES 86F ALUMINUM COMPUTER GRADE CAPACITORS



Compared to older designs, 86F units provide up to 70% more capacitance and 100% higher ripple current rating for a given size. **Temp. Range:** −40° C to +85° C. Suffix **M** designates units with polymeric insulating sleeve. For units with sleeve and bracket, change suffix M to **L** (e.g., 86F101**L**). And, add to net **$0 09** each for codes A, B, and C; **$0.11** for code D; **$0.13** for code E; **$0.18** for code F; **$0.22** for codes G, H, and J.

*COMPUTER GRADE CASE SIZES

Sizes are given with insulated case.

Code	Size, Inches Dia. x Lgth.	Code	Size, Inches Dia. x Lgth.
A	1.385 x 2.140	F	2.510 x 4.140
B	1.385 x 3.140	G	3.010 x 4.140
C	1.385 x 4.140	H	3.010 x 5.640
D	1.760 x 4.140	J	3.010 x 8.640
E	2.010 x 4.140		

GE No.	Cap., µF	WV DC	Size *	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249
86F101M	9,400	5	A	$ 3.57	$ 2.78	$ 2.06	$ 1.59	$ 1.42
86F102M	18,800	5	B	4.35	3.38	2.51	1.93	1.73
86F103M	28,200	5	C	5.18	4.03	2.99	2.30	2.06
86F104M	45,000	5	D	6.60	5.13	3.81	2.93	2.62
86F105M	61,000	5	E	7.99	6.20	4.61	3.55	3.17
86F106M	100,000	5	F	11.30	8.78	6.53	5.02	4.49
86F107M	150,000	5	G	15.55	12.08	8.98	6.91	6.18
86F108M	230,000	5	H	22.35	17.35	12.91	9.92	8.88
86F109M	370,000	5	J	34.29	26.63	19.81	15.23	13.63
86F110M	6,000	10	A	3.45	2.68	1.99	1.53	1.37
86F111M	12,000	10	B	4.12	3.20	2.38	1.83	1.64
86F112M	18,000	10	C	4.83	3.75	2.79	2.15	1.92
86F113M	29,000	10	D	6.12	4.75	3.53	2.72	2.43
86F114M	39,000	10	E	7.31	5.68	4.22	3.25	2.91
86F115M	66,000	10	F	10.43	8.10	6.03	4.63	4.15
86F116M	100,000	10	G	14.43	11.20	8.33	6.41	5.73
86F117M	150,000	10	H	20.25	15.73	11.70	8.99	8.05
86F118M	240,000	10	J	30.78	23.90	17.78	13.67	12.24
86F119M	4,600	15	A	3.35	2.60	1.93	1.49	1.33
86F120M	9,200	15	B	4.06	3.15	2.34	1.80	1.61
86F121M	13,800	15	C	4.73	3.68	2.73	2.10	1.88
86F122M	22,000	15	D	5.96	4.63	3.44	2.65	2.37
86F123M	31,000	15	E	7.31	5.68	4.22	3.25	2.91
86F124M	51,000	15	F	10.27	7.98	5.93	4.56	4.08
86F125M	76,000	15	G	14.01	10.88	8.09	6.22	5.57
86F126M	110,000	15	H	19.06	14.80	11.01	8.47	7.58
86F127M	180,000	15	J	29.50	22.90	17.04	13.10	11.72
86F128M	3,600	20	A	3.38	2.63	1.95	1.50	1.34
86F129M	7,200	20	B	4.12	3.20	2.38	1.83	1.64
86F130M	10,800	20	C	4.83	3.75	2.79	2.15	1.92
86F131M	17,500	20	D	6.18	4.80	3.57	2.75	2.46
86F132M	23,900	20	E	7.47	5.80	4.32	3.32	2.97
86F133M	40,000	20	F	10.72	8.33	6.19	4.76	4.26
86F134M	60,000	20	G	14.75	11.45	8.52	6.55	5.86
86F135M	90,000	20	H	20.80	16.15	12.02	9.24	8.27
86F136M	145,000	20	J	31.85	24.73	18.40	14.14	12.66
86F137M	2,900	25	A	3.45	2.68	1.99	1.53	1.37
86F138M	5,800	25	B	4.15	3.23	2.40	1.84	1.65
86F139M	8,700	25	C	4.89	3.80	2.83	2.17	1.95
86F140M	14,000	25	D	6.21	4.83	3.59	2.76	2.47
86F141M	19,000	25	E	7.47	5.80	4.32	3.32	2.97
86F142M	32,000	25	F	10.75	8.35	6.21	4.78	4.28
86F143M	48,000	25	G	14.78	11.48	8.54	6.56	5.88
86F144M	72,000	25	H	20.83	16.18	12.03	9.25	8.28
86F145M	115,000	25	J	31.65	24.58	18.28	14.06	12.58
86F146M	2,600	30	A	3.45	2.68	1.99	1.53	1.37
86F147M	5,200	30	B	4.19	3.25	2.42	1.86	1.66
86F148M	7,800	30	C	4.96	3.85	2.86	2.20	1.97
86F149M	12,500	30	D	6.34	4.93	3.66	2.82	2.52
86F150M	17,000	30	E	7.66	5.95	4.43	3.40	3.05
86F151M	28,500	30	F	11.08	8.60	6.40	4.92	4.40
86F152M	43,000	30	G	15.33	11.93	8.87	6.82	6.11
86F153M	64,000	30	H	21.54	16.73	12.44	9.57	8.56
86F154M	100,000	30	J	32.20	25.00	18.60	14.30	12.80
86F155M	2,000	40	A	3.86	3.00	2.23	1.72	1.54
86F156M	4,000	40	B	4.54	3.53	2.62	2.02	1.80
86F157M	6,000	40	C	5.25	4.08	3.03	2.33	2.09
86F158M	9,400	40	D	6.38	4.95	3.68	2.83	2.53
86F159M	12,900	40	E	7.60	5.90	4.39	3.37	3.02
86F160M	21,500	40	F	10.63	8.25	6.14	4.72	4.22
86F161M	32,000	40	G	14.23	11.05	8.22	6.32	5.66
86F162M	48,000	40	H	19.77	15.35	11.42	8.78	7.86
86F163M	78,000	40	J	30.20	23.45	17.45	13.41	12.01
86F164M	1,400	50	A	3.48	2.70	2.01	1.54	1.38
86F165M	2,800	50	B	4.22	3.28	2.44	1.87	1.68
86F166M	4,200	50	C	4.96	3.85	2.86	2.20	1.97
86F167M	6,800	50	D	6.31	4.90	3.65	2.80	2.51
86F168M	9,300	50	E	7.63	5.93	4.41	3.39	3.03
86F169M	15,600	50	F	10.95	8.50	6.32	4.86	4.35
86F170M	23,200	50	G	14.97	11.63	8.65	6.65	5.95
86F171M	34,800	50	H	21.09	16.38	12.18	9.37	8.38
86F172M	56,000	50	J	32.30	25.08	18.66	14.34	12.84
86F173M	950	75	A	3.74	2.90	2.16	1.66	1.48
86F174M	1,900	75	B	4.48	3.48	2.59	1.99	1.78
86F175M	2,800	75	C	$ 5.15	$ 4.00	$ 2.98	$ 2.29	$ 2.05
86F176M	4,500	75	D	6.47	5.03	3.74	2.87	2.57
86F177M	6,200	75	E	7.79	6.05	4.50	3.46	3.10
86F178M	10,400	75	F	11.04	8.58	6.38	4.90	4.39
86F179M	15,600	75	G	15.07	11.70	8.70	6.69	5.99
86F180M	23,400	75	H	21.09	16.38	12.18	9.37	8.38
86F181M	37,600	75	J	32.14	24.95	18.56	14.27	12.77
86F182M	470	100	A	3.41	2.65	1.97	1.52	1.36
86F183M	940	100	B	4.15	3.23	2.40	1.84	1.65
86F184M	1,400	100	C	4.86	3.78	2.81	2.16	1.93
86F185M	2,200	100	D	6.12	4.75	3.53	2.72	2.43
86F186M	3,100	100	E	7.53	5.85	4.35	3.35	3.00
86F187M	5,200	100	F	10.85	8.43	6.27	4.82	4.31
86F188M	7,700	100	G	14.78	11.48	8.54	6.56	5.88
86F189M	11,600	100	H	20.90	16.23	12.07	9.28	8.31
86F190M	18,700	100	J	32.04	24.88	18.51	14.23	12.74
86F191M	300	150	A	3.35	2.60	1.93	1.49	1.33
86F192M	600	150	B	4.03	3.13	2.33	1.79	1.60
86F193M	900	150	C	4.70	3.65	2.72	2.09	1.87
86F194M	1,400	150	D	5.83	4.53	3.37	2.59	2.32
86F195M	1,900	150	E	6.92	5.38	4.00	3.07	2.75
86F196M	3,300	150	F	10.05	7.80	5.80	4.46	3.99
86F197M	4,900	150	G	13.62	10.58	7.87	6.05	5.41
86F198M	7,300	150	H	19.00	14.75	10.97	8.44	7.55
86F199M	11,900	150	J	29.27	22.73	16.91	13.00	11.64
86F200M	220	200	A	3.38	2.63	1.95	1.50	1.34
86F201M	440	200	B	4.06	3.15	2.34	1.80	1.61
86F202M	660	200	C	4.77	3.70	2.75	2.12	1.89
86F203M	1,000	200	D	5.86	4.55	3.39	2.60	2.33
86F204M	1,400	200	E	7.15	5.55	4.13	3.17	2.84
86F205M	2,400	200	F	10.27	7.98	5.93	4.56	4.08
86F206M	3,600	200	G	14.10	10.95	8.15	6.26	5.61
86F207M	5,400	200	H	19.80	15.38	11.44	8.79	7.87
86F208M	170	250	A	3.28	2.55	1.90	1.46	1.31
86F209M	340	250	B	3.96	3.08	2.29	1.76	1.57
86F210M	500	250	C	4.57	3.55	2.64	2.03	1.82
86F211M	800	250	D	5.70	4.43	3.29	2.53	2.27
86F212M	1,100	250	E	6.86	5.33	3.96	3.05	2.73
86F213M	1,900	250	F	9.95	7.73	5.75	4.42	3.96
86F214M	2,900	250	G	13.78	10.70	7.96	6.12	5.48
86F215M	4,300	250	H	19.16	14.88	11.07	8.51	7.62
86F216M	130	300	A	3.48	2.70	2.01	1.54	1.38
86F217M	260	300	B	4.19	3.25	2.42	1.86	1.66
86F218M	400	300	C	4.96	3.85	2.86	2.20	1.97
86F219M	650	300	D	6.34	4.93	3.66	2.82	2.52
86F220M	900	300	E	7.70	5.98	4.45	3.42	3.06
86F221M	1,500	300	F	10.98	8.53	6.34	4.88	4.36
86F222M	2,200	300	G	14.84	11.53	8.57	6.59	5.90
86F223M	3,300	300	H	20.90	16.23	12.07	9.28	8.31
86F224M	120	350	A	3.51	2.73	2.03	1.56	1.40
86F225M	240	350	B	4.35	3.38	2.51	1.93	1.73
86F226M	360	350	C	5.18	4.03	2.99	2.30	2.06
86F227M	550	350	D	6.50	5.05	3.76	2.89	2.59
86F228M	750	350	E	7.89	6.13	4.56	3.50	3.14
86F229M	1,300	350	F	11.66	9.05	6.73	5.18	4.63
86F230M	1,900	350	G	15.78	12.25	9.11	7.01	6.27
86F231M	2,900	350	H	22.70	17.63	13.11	10.08	9.02
86F232M	90	400	A	3.64	2.83	2.10	1.62	1.45
86F233M	180	400	B	4.57	3.55	2.64	2.03	1.82
86F234M	270	400	C	5.51	4.28	3.18	2.45	2.19
86F235M	420	400	D	7.05	5.48	4.07	3.13	2.80
86F236M	600	400	E	8.95	6.95	5.17	3.98	3.56
86F237M	1,000	400	F	13.11	10.18	7.57	5.82	5.21
86F238M	1,400	400	G	17.29	13.43	9.99	7.68	6.87
86F239M	2,200	400	H	25.60	19.88	14.79	11.37	10.18
86F240M	75	450	A	3.54	2.75	2.05	1.57	1.41
86F241M	150	450	B	4.64	3.60	2.68	2.06	1.84
86F242M	225	450	C	5.67	4.40	3.27	2.52	2.25
86F243M	370	450	D	7.73	6.00	4.46	3.43	3.07
86F244M	500	450	E	9.56	7.43	5.52	4.25	3.80
86F245M	850	450	F	14.55	11.30	8.41	6.46	5.79
86F246M	1,250	450	G	20.22	15.70	11.68	8.98	8.04
86F247M	1,900	450	H	29.43	22.85	17.00	13.07	11.70

HIGH-CAPACITY (13,000 TO 540,000 µF AT 5 WVDC; 850 TO 34,000 µF AT 100 WVDC)
AND OTHER ADVANCED-CAPABILITY CAPACITORS ALSO AVAILABLE. SEE ANOTHER GE PAGE.

GENERAL ELECTRIC Computer Grade Capacitors

SERIES 86F500 HIGH CAPACITANCE COMPUTER GRADE CAPACITORS

Similar in construction and performance to standard Series 86F computer grade capacitors, but with even higher capacitance values (up to 540,000 μF at 5 WVDC). Temperature range, −40° to +65° C; to 85° C with proper derating. Offer high ripple current capability, low equivalent series resistance and long life. Case insulation is standard PVC; screw-type terminal inserts. Sealed by rubber gasket recessed in molded phenolic cover. Suffix **M** designates units with polymeric insulating sleeve. For units with sleeve and bracket, change suffix M to **L** (e.g., 86F501**L**). And, add to net **$0.09** each for size codes A, B and C; **$0.11** for code D; **$0.13** for code E; **$0.18** for code F; **$0.22** for codes G, H and J.

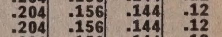
GE No.	Cap., μF	WV DC	Size *	Net Each, Lots of 1-9	10-14	25-49	50-99	100-249
86F501M	13000	5	A	$ 3.90	$ 3.03	$ 2.25	$ 1.73	$ 1.55
86F502M	27000	5	B	5.09	3.95	2.94	2.26	2.02
86F503M	40000	5	C	6.18	4.80	3.57	2.75	2.46
86F504M	64000	5	D	8.21	6.38	4.74	3.65	3.26
86F505M	90000	5	E	10.43	8.10	6.03	4.63	4.15
86F506M	150000	5	F	15.55	12.08	8.98	6.91	6.18
86F507M	220000	5	G	21.51	16.70	12.42	9.55	8.55
86F508M	332000	5	H	30.88	23.98	17.84	13.71	12.28
86F509M	540000	5	J	48.75	37.85	28.16	21.65	19.38
86F510M	9000	10	A	3.80	2.95	2.19	1.69	1.51
86F511M	18000	10	B	4.83	3.75	2.79	2.15	1.92
86F512M	27000	10	C	5.89	4.58	3.40	2.62	2.34
86F513M	43000	10	D	7.79	6.05	4.50	3.46	3.10
86F514M	59000	10	E	9.63	7.48	5.56	4.28	3.83
86F515M	100000	10	F	14.43	11.20	8.33	6.41	5.73
86F516M	150000	10	G	20.25	15.73	11.70	8.99	8.05
86F517M	225000	10	H	29.04	22.55	16.78	12.90	11.55
86F518M	370000	10	J	45.98	35.70	26.56	20.42	18.28
86F519M	7500	15	A	3.80	2.95	2.19	1.69	1.51
86F520M	15000	15	B	4.89	3.80	2.83	2.17	1.95
86F521M	23000	15	C	6.09	4.73	3.52	2.70	2.42
86F522M	36000	15	D	8.05	6.25	4.65	3.58	3.20
86F523M	50000	15	E	10.11	7.85	5.84	4.49	4.02
86F524M	83000	15	F	15.04	11.68	8.69	6.68	5.98
86F525M	120000	15	G	20.54	15.95	11.87	9.12	8.17
86F526M	185000	15	H	30.24	23.48	17.47	13.43	12.02
86F527M	300000	15	J	47.37	36.78	27.36	21.04	18.83
86F528M	5800	20	A	3.86	3.00	2.23	1.72	1.54
86F529M	11700	20	B	5.02	3.90	2.90	2.23	2.00
86F530M	17600	20	C	6.21	4.83	3.59	2.76	2.47
86F531M	27000	20	D	8.11	6.30	4.69	3.60	3.23
86F532M	38000	20	E	10.30	8.00	5.95	4.58	4.10
86F533M	64000	20	F	15.55	12.08	8.98	6.91	6.18
86F534M	95000	20	G	21.80	16.93	12.59	9.68	8.67
86F535M	140000	20	H	30.88	23.98	17.84	13.71	12.28
86F536M	230000	20	J	48.94	38.00	28.27	21.74	19.46
86F537M	4500	25	A	3.86	3.00	2.23	1.72	1.54
86F538M	9000	25	B	4.96	3.85	2.86	2.20	1.97
86F539M	13500	25	C	6.12	4.75	3.53	2.72	2.43
86F540M	22000	25	D	8.24	6.40	4.76	3.66	3.28
86F541M	30000	25	E	10.24	7.95	5.91	4.55	4.07
86F542M	50000	25	F	15.30	11.88	8.84	6.79	6.08
86F543M	75000	25	G	21.57	16.75	12.46	9.58	8.58
86F544M	110000	25	H	30.40	23.60	17.56	13.50	12.08
86F545M	180000	25	J	48.01	37.28	27.73	21.32	19.08

GE No.	Cap., μF	WV DC	Size *	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249
86F546M	4000	30	A	$ 3.86	$ 3.00	$ 2.23	$ 1.72	$ 1.54
86F547M	8000	30	B	5.02	3.90	2.90	2.23	2.00
86F548M	12000	30	C	6.21	4.83	3.59	2.76	2.47
86F549M	19000	30	D	8.28	6.43	4.78	3.68	3.29
86F550M	26000	30	E	10.34	8.03	5.97	4.59	4.11
86F551M	44000	30	F	15.65	12.15	9.04	6.95	6.22
86F552M	65000	30	G	21.83	16.95	12.61	9.70	8.68
86F553M	100000	30	H	32.20	25.00	18.60	14.30	12.80
86F554M	160000	30	J	49.88	38.73	28.81	22.15	19.83
86F555M	2900	40	A	4.15	3.23	2.40	1.84	1.65
86F556M	5800	40	B	5.15	4.00	2.98	2.29	2.05
86F557M	8700	40	C	6.15	4.78	3.55	2.73	2.44
86F558M	14000	40	D	8.02	6.23	4.63	3.56	3.19
86F559M	19000	40	E	9.72	7.55	5.62	4.32	3.87
86F560M	32000	40	F	14.23	11.05	8.22	6.32	5.66
86F561M	48000	40	G	19.77	15.35	11.42	8.78	7.86
86F562M	71000	40	H	27.76	21.55	16.03	12.33	11.03
86F563M	115000	40	J	43.05	33.43	24.87	19.12	17.11
86F564M	2400	50	A	3.99	3.10	2.31	1.77	1.59
86F565M	4900	50	B	5.31	4.13	3.07	2.36	2.11
86F566M	7300	50	C	6.60	5.13	3.81	2.93	2.62
86F567M	11000	50	D	8.57	6.65	4.95	3.80	3.40
86F568M	16000	50	E	11.21	8.70	6.47	4.98	4.45
86F569M	26000	50	F	16.45	12.78	9.50	7.31	6.54
86F570M	40000	50	G	23.83	18.50	13.76	10.58	9.47
86F572M	97000	50	J	53.90	41.85	31.14	23.94	21.43
86F573M	1400	75	A	4.06	3.15	2.34	1.80	1.61
86F574M	2900	75	B	5.22	4.05	3.01	2.32	2.07
86F575M	4400	75	C	6.38	4.95	3.68	2.83	2.53
86F576M	7300	75	D	8.63	6.70	4.98	3.83	3.43
86F577M	10000	75	E	10.72	8.33	6.19	4.76	4.26
86F578M	16800	75	F	16.00	12.43	9.24	7.11	6.36
86F579M	24000	75	G	21.57	16.75	12.46	9.58	8.58
86F580M	36000	75	H	30.88	23.98	17.84	13.71	12.28
86F581M	58000	75	J	47.91	37.20	27.68	21.28	19.05
86F582M	850	100	A	4.03	3.13	2.33	1.79	1.60
86F583M	1700	100	B	5.35	4.15	3.09	2.37	2.12
86F584M	2600	100	C	6.76	5.25	3.91	3.00	2.69
86F585M	4200	100	D	9.27	7.20	5.36	4.12	3.69
86F586M	5800	100	E	11.79	9.15	6.81	5.23	4.68
86F587M	9800	100	F	18.10	14.05	10.45	8.04	7.19
86F588M	14000	100	G	24.70	19.18	14.27	10.97	9.82
86F589M	21000	100	H	35.68	27.70	20.61	15.84	14.18
86F590M	34000	100	J	56.12	43.58	32.42	24.92	22.31

*See preceding page (Series 86F) for case sizes.

LECTROFILM®-B COMPUTER GRADE EXTENDED FOIL TUBULAR CAPACITORS

For commercial and industrial applications where long life, small size and low cost are important. Ideal for transistorized circuits. Offer high insulation resistance and low dissipation factor over temperature range of −55° to +125° C. **Voltage Rating:** 200 VDC at 85° C; also available rated 100 VDC at same prices, to order change 6th character B to **A**, e.g., 61F15**A**A562, sizes slightly different (100 VDC capacitors not available in capacities under .0056 μF).



Cap., μF	Dia. x L., Inches	±10% Tolerance GE Type Number	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	1000 Up	±5% Tolerance GE Type Number	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	1000 Up
.0010	.200 x .450	61F10BA102	$0.267	$0.196	$0.151	$0.116	$0.107	$0.089	61F10BC102	$0.36	$0.264	$0.204	$0.156	$0.144	$0.12
.0012	.200 x .450	61F10BA122	.267	.196	.151	.116	.107	.089	61F10BC122	.36	.264	.204	.156	.144	.12
.0015	.200 x .450	61F10BA152	.267	.196	.151	.116	.107	.089	61F10BC152	.36	.264	.204	.156	.144	.12
.0018	.200 x .450	61F10BA182	.267	.196	.151	.116	.107	.089	61F10BC182	.36	.264	.204	.156	.144	.12
.0022	.200 x .450	61F10BA222	.267	.196	.151	.116	.107	.089	61F10BC222	.36	.264	.204	.156	.144	.12
.0027	.200 x .450	61F10BA272	.267	.196	.151	.116	.107	.089	61F10BC272	.36	.264	.204	.156	.144	.12
.0033	.200 x .450	61F10BA332	.267	.196	.151	.116	.107	.089	61F10BC332	.36	.264	.204	.156	.144	.12
.0039	.200 x .450	61F10BA392	.267	.196	.151	.116	.107	.089	61F10BC392	.36	.264	.204	.156	.144	.12
.0047	.200 x .450	61F10BA472	.267	.196	.151	.116	.107	.089	61F10BC472	.36	.264	.204	.156	.144	.12
.0056	.188 x .750	61F15BA562	.267	.196	.151	.116	.107	.089	61F15BC562	.36	.264	.204	.156	.144	.12
.0068	.188 x .750	61F15BA682	.267	.196	.151	.116	.107	.089	61F15BC682	.36	.264	.204	.156	.144	.12
.0082	.188 x .750	61F15BA822	.267	.196	.151	.116	.107	.089	61F15BC822	.36	.264	.204	.156	.144	.12
.010	.188 x .750	61F15BA103	.267	.196	.151	.116	.107	.089	61F15BC103	.36	.264	.204	.156	.144	.12
.012	.219 x .750	61F17BA123	.267	.196	.151	.116	.107	.089	61F17BC123	.36	.264	.204	.156	.144	.12
.015	.219 x .750	61F17BA153	.267	.196	.151	.116	.107	.089	61F17BC153	.36	.264	.204	.156	.144	.12
.018	.250 x .750	61F19BA183	.267	.196	.151	.116	.107	.089	61F19BC183	.36	.264	.204	.156	.144	.12
.022	.250 x .750	61F19BA223	267	.196	.151	.116	.107	.089	61F19BC223	.36	.264	.204	.156	.144	.12
.027	.265 x .875	61F22BA273	.276	.202	.156	.12	.11	.092	61F22BC273	.369	.271	.209	.16	.148	.123
.033	.265 x .875	61F22BA333	.276	.202	.156	.12	.11	.092	61F22BC333	.369	.271	.209	.16	.148	.123
.039	.281 x .875	61F23BA393	.297	.218	.168	.129	.119	.099	61F23BC393	.405	.297	.23	.176	.162	.135
.047	.281 x .875	61F23BA473	.297	.218	.168	.129	.119	.099	61F23BC473	.405	.297	.23	.176	.162	.135
.056	.328 x .875	61F24BA563	.312	.229	.177	.135	.125	.104	61F24BC563	.42	.308	.238	.182	.168	.14
.068	.328 x .875	61F24BA683	.312	.229	.177	.135	.125	.104	61F24BC683	.42	.308	.238	.182	.168	.14
.082	.375 x 1.09	61F29BA823	.336	.246	.19	.146	.134	.112	61F29BC823	.456	.334	.258	.198	.182	.152
.10	.375 x 1.09	61F29BA104	.336	.246	.19	.146	.134	.112	61F29BC104	.456	.334	.258	.198	.182	.152
.12	.436 x 1.09	61F34BA124	.375	.275	.213	.163	.15	.125	61F34BC124	.54	.396	.306	.234	.216	.18
.15	.436 x 1.09	61F34BA154	.375	.275	.213	.163	.15	.125	61F34BC154	.507	.372	.287	.22	.203	.169
.18	.436 x 1.25	61F38BA184	.411	.301	.233	.178	.164	.137	61F38BC184	.552	.405	.313	.239	.221	.184
.22	.436 x 1.25	61F38BA224	.411	.301	.233	.178	.164	.137	61F38BC224	.552	.405	.313	.239	.221	.184
.27	.562 x 1.25	61F42BA274	.474	.348	.269	.205	.19	.158	61F42BC274	.639	.469	.362	.277	.256	.213
.33	.562 x 1.25	61F42BA334	.474	.348	.269	.205	.19	.158	61F42BC334	.639	.469	.362	.277	.256	.213
.39	.578 x 1.59	61F47BA394	.582	.427	.33	.252	.233	.194	61F47BC394	.786	.576	.445	.341	.314	.262
.47	.578 x 1.59	61F47BA474	.582	.427	.33	.252	.233	.194	61F47BC474	.786	.576	.445	.341	.314	.262
.56	.630 x 1.72	61F60BA564	.744	.546	.422	.322	.298	.248	61F60BC564	1.005	.737	.57	.436	.402	.335
.68	.630 x 1.72	61F60BA684	.744	.546	.422	.322	.298	.248	61F60BC684	1.005	.737	.57	.436	.402	.335
.82	.750 x 1.90	61F66BA824	1.041	.763	.59	.451	.416	.347	61F66BC824	1.407	1.032	.797	.61	.563	.469
1.00	.750 x 1.90	61F66BA104	1.041	.763	.59	.451	.416	.347	61F66BC105	1.407	1.032	.797	.61	.563	.469
1.50	.750 x 1.90	61F66BA155	1.239	.909	.702	.537	.496	.413	61F66BC155	1.674	1.228	.949	.725	.67	.558
2.00	....	61F67AA205	1.515	1.111	.859	.657	.606	.505	61F67AC205	2.043	1.498	1.158	.885	.817	.681

GENERAL ELECTRIC Computer Grade Capacitors

SERIES 88F EXTENDED CAPABILITY COMPUTER GRADE CAPACITORS

Similar in appearance to standard Series 86F computer grade capacitors, but offering higher ripple current capability and lower equivalent series resistance. Screw-type terminal inserts. Sealed by rubber gasket recessed in molded phenolic cover; PVC insulation. Provides 1500 hour life at 85° C. Temp. range, −40° to +85° C. Available in 21 case sizes (same codes as Series 92F). 150 WVDC available on request.

GE No.†	Cap., µF	WV DC	Size *	Net Each, Lots of				
				1-9	10-24	25-49	50-99	100-249
88F100	6000	5	BA	$ 3.46	$ 2.68	$ 2.00	$1.53	$1.37
88F101	12000	5	BC	4.05	3.14	2.34	1.80	1.61
88F102	13000	5	EA	4.17	3.24	2.41	1.85	1.66
88F103	18000	5	BE	4.66	3.62	2.69	2.07	1.85
88F104	20000	5	BF	4.85	3.77	2.80	2.16	1.93
88F105	24000	5	BG	5.26	4.08	3.04	2.33	2.09
88F106	27000	5	BH	5.56	4.32	3.21	2.47	2.21
88F107	41000	5	EE	6.98	5.42	4.03	3.10	2.78
88F108	46000	5	FC	7.48	5.81	4.32	3.32	2.97
88F109	48000	5	EF	7.69	5.97	4.44	3.42	3.06
88F110	54000	5	EG	8.31	6.45	4.80	3.69	3.30
88F111	61000	5	EH	8.99	6.98	5.19	3.99	3.58
88F112	70000	5	FE	9.92	7.70	5.73	4.40	3.94
88F113	82000	5	FF	11.13	8.64	6.43	4.94	4.42
88F114	93000	5	FG	12.24	9.50	7.07	5.43	4.86
88F115	100000	5	FH	12.94	10.05	7.48	5.75	5.15
88F116	120000	5	GF	14.96	11.61	8.64	6.64	5.95
88F117	140000	5	GG	16.99	13.19	9.82	7.55	6.75
88F118	150000	5	GH	18.01	13.98	10.40	8.00	7.16
88F119	4200	10	BA	3.46	2.68	2.00	1.53	1.37
88F120	8400	10	BC	4.05	3.14	2.34	1.80	1.61
88F121	9500	10	EA	4.21	3.27	2.43	1.87	1.67
88F122	12000	10	BE	4.59	3.57	2.65	2.04	1.83
88F123	14000	10	BF	4.88	3.79	2.82	2.17	1.94
88F124	17000	10	BG	5.30	4.12	3.06	2.35	2.11
88F125	19000	10	BH	5.59	4.34	3.23	2.48	2.22
88F126	28000	10	EE	6.91	5.37	3.99	3.07	2.75
88F127	32000	10	FC	7.48	5.81	4.32	3.32	2.97
88F128	33000	10	EF	7.62	5.92	4.40	3.38	3.03
88F129	38000	10	EG	8.36	6.49	4.83	3.71	3.32
88F130	42000	10	EH	8.92	6.93	5.15	3.96	3.55
88F131	48000	10	FE	9.80	7.61	5.66	4.35	3.90
88F132	57000	10	FF	11.10	8.62	6.41	4.93	4.41
88F133	65000	10	FG	12.26	9.52	7.08	5.44	4.87
88F134	72000	10	GE	13.28	10.31	7.67	5.90	5.28
88F135	73000	10	FH	13.42	10.42	7.75	5.96	5.33
88F136	84000	10	GF	15.03	11.67	8.68	6.67	5.97
88F137	96000	10	GG	16.76	13.01	9.68	7.44	6.66
88F138	100000	10	GH	17.35	13.47	10.02	7.70	6.90
88F139	3200	15	BA	3.43	2.67	1.98	1.52	1.36
88F140	6400	15	BC	4.00	3.11	2.31	1.78	1.59
88F141	7200	15	EA	4.17	3.24	2.41	1.85	1.66
88F142	9600	15	BE	4.59	3.57	2.65	2.04	1.83
88F143	11000	15	BF	4.85	3.77	2.80	2.16	1.93
88F144	13000	15	BG	5.21	4.04	3.01	2.31	2.07
88F145	14000	15	BH	5.40	4.19	3.12	2.40	2.15
88F146	21000	15	EE	6.68	5.18	3.86	2.96	2.65
88F147	25000	15	EF	7.41	5.75	4.28	3.29	2.95
88F148	28000	15	EG	7.95	6.18	4.59	3.53	3.16
88F149	32000	15	EH	8.68	6.74	5.02	3.86	3.45
88F150	37000	15	FE	9.61	7.46	5.55	4.27	3.82
88F151	43000	15	FF	10.70	8.31	6.18	4.75	4.25
88F152	50000	15	FG	12.00	9.32	6.93	5.33	4.77
88F153	55000	15	FH	12.90	10.02	7.45	5.73	5.13
88F154	64000	15	GF	14.55	11.30	8.41	6.46	5.79
88F155	73000	15	GG	16.19	12.57	9.35	7.19	6.43
88F156	82000	15	GH	17.85	13.86	10.31	7.93	7.09
88F157	2300	20	BA	3.46	2.68	2.00	1.53	1.37
88F158	4600	20	BC	4.10	3.18	2.37	1.82	1.63
88F159	5100	20	EA	4.24	3.29	2.45	1.88	1.68
88F160	6800	20	BE	4.69	3.64	2.71	2.08	1.86
88F161	8000	20	BF	5.02	3.90	2.90	2.23	1.99
88F162	9100	20	BF	5.33	4.14	3.08	2.37	2.12
88F163	10000	20	BH	5.56	4.32	3.21	2.47	2.21
88F164	15000	20	EE	6.94	5.39	4.01	3.08	2.76
88F165	17000	20	FC	7.48	5.81	4.32	3.32	2.97
88F166	18000	20	EF	7.74	6.01	4.47	3.44	3.08
88F167	20000	20	EG	8.29	6.43	4.79	3.68	3.29
88F168	23000	20	EH	9.11	7.08	5.26	4.05	3.62
88F169	26000	20	FE	9.92	7.70	5.73	4.40	3.94
88F170	30000	20	FF	11.01	8.55	6.36	4.89	4.38
88F171	35000	20	FG	12.38	9.61	7.15	5.50	4.92
88F172	39000	20	GE	13.47	10.46	7.78	5.98	5.35
88F173	40000	20	FH	13.73	10.66	7.93	6.10	5.46
88F174	45000	20	GF	15.10	11.72	8.72	6.71	6.00
88F175	52000	20	GG	16.99	13.19	9.82	7.55	6.75
88F176	58000	20	GH	18.62	14.46	10.76	8.27	7.40
88F177	1700	25	BA	3.41	2.65	1.97	1.51	1.35
88F178	3400	25	BC	3.98	3.09	2.30	1.77	1.58
88F179	3900	25	EA	4.14	3.22	2.39	1.84	1.65
88F180	5100	25	BE	4.54	3.53	2.62	2.02	1.81
88F181	6000	25	BF	4.85	3.77	2.80	2.16	1.93
88F182	7000	25	BG	5.18	4.03	2.99	2.30	2.06
88F183	7700	25	BH	5.42	4.21	3.13	2.41	2.15
88F184	11000	25	EE	6.51	5.05	3.76	2.89	2.59
88F185	13000	25	EF	7.17	5.57	4.14	3.18	2.85
88F186	15000	25	EG	7.86	6.10	4.54	3.49	3.12
88F187	17000	25	EH	8.52	6.62	4.92	3.78	3.39
88F188	20000	25	FE	9.52	7.39	5.50	4.23	3.78
88F189	23000	25	FF	10.51	8.16	6.07	4.67	4.18
88F190	26000	25	FG	11.52	8.95	6.66	5.12	4.58
88F191	29000	25	GE	12.52	9.72	7.23	5.56	4.98
88F192	30000	25	FH	12.85	9.98	7.42	5.71	5.11
88F193	34000	25	GF	14.18	11.01	8.19	6.30	5.64
88F194	39000	25	GG	$15.86	$12.31	$ 9.16	$7.04	$6.30
88F195	44000	25	GH	17.51	13.60	10.12	7.78	6.96
88F196	1500	30	BA	3.43	2.67	1.98	1.52	1.36
88F197	3000	30	BC	4.03	3.13	2.33	1.79	1.60
88F198	3400	30	EA	4.19	3.25	2.42	1.86	1.67
88F199	4600	30	BE	4.66	3.62	2.69	2.07	1.85
88F200	5400	30	BF	4.97	3.86	2.87	2.21	1.98
88F201	6100	30	BG	5.26	4.08	3.04	2.33	2.09
88F202	6900	30	BH	5.56	4.32	3.21	2.47	2.21
88F203	10000	30	EE	6.79	5.27	3.92	3.02	2.70
88F204	11000	30	FC	7.19	5.59	4.16	3.19	2.86
88F205	12000	30	EF	7.57	5.88	4.37	3.36	3.01
88F206	13000	30	EG	7.98	6.19	4.61	3.54	3.17
88F207	15000	30	EH	8.78	6.82	5.07	3.90	3.49
88F208	17000	30	FE	9.56	7.42	5.52	4.25	3.80
88F209	20000	30	FF	10.75	8.34	6.21	4.77	4.27
88F210	23000	30	FG	11.93	9.26	6.89	5.30	4.74
88F211	26000	30	FH	13.11	10.18	7.57	5.82	5.21
88F212	30000	30	GF	14.70	11.41	8.49	6.53	5.84
88F213	34000	30	GG	16.28	12.64	9.41	7.23	6.47
88F214	39000	30	GH	18.25	14.17	10.54	8.10	7.25
88F215	1000	40	BA	3.43	2.67	1.98	1.52	1.36
88F216	2100	40	BC	4.07	3.16	2.35	1.81	1.62
88F217	2400	40	EA	4.24	3.29	2.45	1.88	1.68
88F218	3200	40	BE	4.71	3.66	2.72	2.09	1.87
88F219	3800	40	BF	5.07	3.93	2.93	2.25	2.01
88F220	4300	40	BG	5.35	4.15	3.09	2.38	2.13
88F221	4900	40	BH	5.70	4.43	3.29	2.53	2.27
88F222	7300	40	EE	7.10	5.51	4.10	3.15	2.82
88F223	8400	40	FC	7.74	6.01	4.47	3.44	3.08
88F224	8600	40	EF	7.86	6.10	4.54	3.49	3.12
88F225	9800	40	EG	8.57	6.65	4.95	3.81	3.41
88F226	11000	40	EH	9.28	7.20	5.36	4.12	3.69
88F227	12000	40	FE	9.85	7.65	5.69	4.37	3.91
88F228	14000	40	FF	11.03	8.56	6.37	4.90	4.38
88F229	17000	40	FG	12.78	9.92	7.38	5.68	5.08
88F230	18000	40	GE	13.37	10.38	7.72	5.94	5.32
88F231	19000	40	FH	13.94	10.82	8.05	6.19	5.54
88F232	21000	40	GF	15.12	11.74	8.74	6.72	6.01
88F233	25000	40	GG	17.47	13.56	10.09	7.76	6.94
88F234	28000	40	GH	19.22	14.92	11.10	8.53	7.64
88F235	860	50	BA	3.46	2.68	2.00	1.53	1.37
88F236	1700	50	BC	4.07	3.16	2.35	1.81	1.62
88F237	1900	50	EA	4.21	3.27	2.43	1.87	1.67
88F238	2600	50	BE	4.73	3.68	2.73	2.10	1.88
88F239	3000	50	BF	5.02	3.90	2.90	2.23	1.99
88F240	3400	50	BG	5.30	4.12	3.06	2.35	2.11
88F241	3900	50	BH	5.68	4.41	3.28	2.52	2.26
88F242	5800	50	EE	7.05	5.48	4.07	3.13	2.80
88F243	6600	50	FC	7.64	5.94	4.42	3.39	3.04
88F244	6800	50	EF	7.79	6.05	4.50	3.46	3.10
88F245	7800	50	EG	8.50	6.60	4.91	3.77	3.38
88F246	8700	50	EH	9.16	7.11	5.29	4.07	3.64
88F247	10000	50	FE	10.10	7.85	5.84	4.49	4.02
88F248	11000	50	FF	10.84	8.42	6.26	4.81	4.31
88F249	13000	50	FG	12.28	9.54	7.10	5.46	4.88
88F250	14000	50	GE	13.02	10.11	7.52	5.78	5.18
88F251	15000	50	FH	13.75	10.68	7.94	6.11	5.47
88F252	17000	50	GF	15.20	11.80	8.78	6.75	6.04
88F253	19000	50	GG	16.64	12.92	9.61	7.39	6.61
88F254	22000	50	GH	18.81	14.61	10.87	8.36	7.48
88F255	350	75	BA	3.72	2.89	2.15	1.65	1.48
88F256	700	75	BC	4.28	3.33	2.47	1.90	1.70
88F257	800	75	EA	4.42	3.44	2.56	1.96	1.76
88F258	1100	75	BE	4.92	3.82	2.84	2.19	1.96
88F259	1300	75	BF	5.23	4.06	3.02	2.32	2.08
88F260	1400	75	BG	5.40	4.19	3.12	2.40	2.15
88F261	1600	75	BH	5.73	4.45	3.31	2.54	2.28
88F262	2500	75	EE	7.17	5.57	4.14	3.18	2.85
88F263	2800	75	FC	7.64	5.94	4.42	3.39	3.04
88F264	2900	75	EF	7.81	6.07	4.51	3.47	3.11
88F265	3300	75	EG	8.45	6.56	4.88	3.75	3.36
88F266	3700	75	EH	9.11	7.08	5.26	4.05	3.62
88F267	4300	75	FE	10.06	7.81	5.81	4.47	4.00
88F268	5000	75	FF	11.20	8.69	6.47	4.97	4.45
88F269	5600	75	FG	12.17	9.45	7.03	5.40	4.84
88F270	6300	75	FH	13.28	10.31	7.67	5.90	5.28
88F271	6600	75	GE	13.78	10.70	7.96	6.12	5.48
88F272	7700	75	GF	15.55	12.07	8.98	6.91	6.18
88F273	8300	75	GG	16.50	12.81	9.53	7.33	6.56
88F274	9400	75	GH	18.27	14.19	10.55	8.11	7.26
88F275	250	100	BA	3.69	2.87	2.13	1.64	1.47
88F276	500	100	BC	4.26	3.31	2.46	1.89	1.69
88F277	600	100	EA	4.47	3.47	2.58	1.99	1.78
88F278	800	100	BE	4.92	3.82	2.84	2.19	1.96
88F279	900	100	BF	5.14	3.99	2.97	2.28	2.04
88F280	1000	100	BG	5.35	4.15	3.09	2.38	2.13
88F281	1100	100	BH	5.59	4.34	3.23	2.48	2.22
88F282	1200	100	EC	5.80	4.50	3.35	2.58	2.31
88F283	1800	100	EE	7.12	5.53	4.11	3.16	2.83
88F284	2000	100	FC	7.57	5.88	4.37	3.36	3.01
88F285	2100	100	EF	7.79	6.05	4.50	3.46	3.10
88F286	2400	100	EG	8.45	6.56	4.88	3.75	3.36
88F287	2600	100	EH	8.90	6.91	5.14	3.95	3.54
88F288	3100	100	FE	9.99	7.76	5.77	4.44	3.97
88F289	3600	100	FF	11.10	8.62	6.41	4.93	4.41
88F290	4100	100	FG	12.21	9.48	7.05	5.42	4.86
88F291	4500	100	FH	13.09	10.16	7.56	5.81	5.20
88F292	4700	100	GE	13.54	10.51	7.82	6.01	5.38
88F293	5500	100	GF	15.29	11.87	8.83	6.79	6.08
88F294	6000	100	GG	16.40	12.74	9.47	7.28	6.52
88F295	6700	100	GH	17.94	13.93	10.36	7.97	7.13

*See following page for case sizes. †Add suffix **AMA** to GE number.

GENERAL ELECTRIC Computer Grade Capacitors

SERIES 92F ADVANCED CAPABILITY ALUMINUM COMPUTER GRADE CAPACITORS

Similar in appearance to standard Series 86F, but with dramatically improved electrical and life characteristics. Provides about 50% higher ripple current capability and about 30–50% lower equivalent series resistance than Series 88F. Temp. range, −40° to +85° C; rated at 3000 hrs. life at 85° C. Capable of operation up to 120° C. With PVC insulation. 100 and 150 WVDC available on request.

*CASE SIZES—SERIES 88F AND 92F

Code *	Size, Inches Dia. x L.	Code *	Size, Inches Dia. x L.	Code *	Size, Inches Dia. x L.
BA	1.385 x 2.140	EC	2.010 x 3.140	FF	2.510 x 4.640
BC	1.385 x 3.140	EE	2.010 x 4.140	FG	2.510 x 5.140
BE	1.385 x 4.140	EF	2.010 x 4.640	FH	2.510 x 5.640
BF	1.385 x 4.640	EG	2.010 x 5.140	GE	3.010 x 4.140
BG	1.385 x 5.140	EH	2.010 x 5.640	GF	3.010 x 4.640
BH	1.385 x 5.640	FC	2.510 x 3.140	GG	3.010 x 5.140
EA	2.010 x 2.140	FE	2.510 x 4.140	GH	3.010 x 5.640

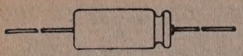
GE No.†	WV DC	Cap., μF	Size *	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249
92F100	6000	5	BA	$ 5.07	$ 3.93	$ 2.93	$ 2.25	$ 2.01
92F101	12000	5	BC	5.84	4.54	3.38	2.60	2.32
92F102	15000	5	EA	6.25	4.85	3.61	2.77	2.48
92F103	18000	5	BE	6.65	5.16	3.84	2.95	2.64
92F104	21000	5	BF	7.05	5.48	4.07	3.13	2.80
92F105	24000	5	BG	7.43	5.77	4.29	3.30	2.95
92F106	27000	5	BH	7.83	6.08	4.53	3.48	3.11
92F107	31000	5	EC	8.38	6.51	4.84	3.72	3.33
92F108	47000	5	EE	10.48	8.14	6.06	4.66	4.17
92F109	53000	5	FC	11.29	8.77	6.52	5.01	4.49
92F110	55000	5	EF	11.55	8.97	6.67	5.13	4.59
92F111	63000	5	EG	12.62	9.80	7.29	5.60	5.02
92F112	71000	5	EH	13.68	10.62	7.90	6.07	5.44
92F113	80000	5	FE	14.86	11.54	8.59	6.60	5.91
92F114	93000	5	FF	16.59	12.88	9.58	7.37	6.59
92F115	107000	5	FG	18.44	14.32	10.65	8.19	7.33
92F116	120000	5	FH	20.16	15.66	11.65	8.95	8.02
92F117	120000	5	GE	20.16	15.66	11.65	8.95	8.02
92F118	140000	5	GF	22.81	17.71	13.18	10.13	9.07
92F119	160000	5	GG	25.47	19.77	14.71	11.31	10.12
92F120	180000	5	GH	28.12	21.83	16.24	12.49	11.18
92F121	4600	10	BA	5.11	3.97	2.95	2.27	2.03
92F122	9300	10	BC	5.96	4.63	3.44	2.65	2.37
92F123	12000	10	EA	6.46	5.02	3.73	2.87	2.57
92F124	14000	10	BE	6.82	5.29	3.94	3.03	2.71
92F125	16000	10	BF	7.19	5.59	4.16	3.19	2.86
92F126	18000	10	BG	7.55	5.86	4.36	3.35	3.00
92F127	21000	10	BH	8.10	6.29	4.68	3.60	3.22
92F128	24000	10	EC	8.66	6.73	5.00	3.85	3.44
92F129	36000	10	EE	10.84	8.42	6.26	4.81	4.31
92F130	41000	10	FC	11.76	9.13	6.79	5.22	4.68
92F131	42000	10	EF	11.95	9.28	6.90	5.31	4.75
92F132	48000	10	EG	13.04	10.13	7.53	5.79	5.18
92F133	54000	10	EH	14.13	10.97	8.16	6.27	5.62
92F134	61000	10	FE	15.43	11.98	8.91	6.85	6.13
92F135	71000	10	FF	17.25	13.40	9.97	7.66	6.86
92F136	82000	10	FG	19.27	14.96	11.13	8.56	7.66
92F137	92000	10	FH	21.09	16.37	12.18	9.37	8.38
92F138	92000	10	GE	21.09	16.37	12.18	9.37	8.38
92F139	107000	10	GF	23.83	18.50	13.77	10.58	9.47
92F140	123000	10	GG	26.77	20.78	15.46	11.89	10.64
92F141	138000	10	GH	29.51	22.91	17.05	13.11	11.73
92F142	3800	15	BA	5.11	3.97	2.95	2.27	2.03
92F143	7600	15	BC	5.96	4.63	3.44	2.65	2.37
92F144	10000	15	EA	6.51	5.05	3.76	2.89	2.59
92F145	11000	15	BE	6.72	5.22	3.88	2.98	2.67
92F146	13000	15	BF	7.17	5.57	4.14	3.18	2.85
92F147	15000	15	BG	7.62	5.92	4.40	3.38	3.03
92F148	17000	15	BH	8.07	6.27	4.66	3.58	3.21
92F149	20000	15	EC	8.73	6.78	5.04	3.88	3.47
92F150	30000	15	EE	10.98	8.53	6.34	4.88	4.36
92F151	34000	15	FC	11.88	9.23	6.86	5.28	4.72
92F152	35000	15	EF	12.09	9.39	6.99	5.37	4.81
92F153	40000	15	EE	13.23	10.27	7.64	5.88	5.26
92F154	45000	15	EH	14.34	11.14	8.28	6.37	5.70
92F155	51000	15	FE	15.69	12.18	9.06	6.97	6.24
92F156	59000	15	FF	17.49	13.58	10.10	7.77	6.95
92F157	68000	15	FG	19.50	15.14	11.26	8.66	7.75
92F158	76000	15	FH	21.30	16.54	12.30	9.46	8.47
92F159	76000	15	GE	21.30	16.54	12.30	9.46	8.47
92F160	89000	15	GF	24.21	18.80	13.99	10.75	9.62
92F161	102000	15	GG	27.12	21.06	15.67	12.04	10.78
92F162	114000	15	GH	29.82	23.15	17.23	13.24	11.85
92F163	2500	20	BA	5.14	3.99	2.97	2.28	2.04
92F164	5000	20	BC	6.03	4.69	3.49	2.68	2.40
92F165	6500	20	EA	6.56	5.09	3.79	2.91	2.61
92F166	7500	20	BE	6.91	5.37	3.99	3.07	2.75
92F167	8800	20	BF	7.36	5.72	4.25	3.27	2.93
92F168	10000	20	BG	7.79	6.05	4.50	3.46	3.10
92F169	11000	20	BH	8.14	6.32	4.70	3.62	3.24
92F170	13000	20	EC	8.85	6.87	5.11	3.93	3.52
92F171	19000	20	EE	10.96	8.51	6.33	4.87	4.36
92F172	22000	20	EF	12.02	9.34	6.95	5.34	4.78
92F173	22000	20	FC	12.02	9.34	6.95	5.34	4.78
92F174	26000	20	EG	13.42	10.42	7.75	5.96	5.33
92F175	29000	20	EH	14.48	11.25	8.37	6.43	5.76
92F176	33000	20	FE	15.90	12.35	9.19	7.06	6.32
92F177	38000	20	FF	17.66	13.71	10.20	7.84	7.02
92F178	44000	20	FG	19.79	15.36	11.43	8.79	7.87
92F179	49000	20	FH	21.54	16.72	12.44	9.57	8.56
92F180	49000	20	GE	21.54	16.72	12.44	9.57	8.56
92F181	57000	20	GF	24.35	18.91	14.07	10.82	9.68
92F182	65000	20	GG	27.19	21.11	15.71	12.08	10.81
92F183	73000	20	GH	30.01	23.30	17.34	13.33	11.93
92F184	1900	25	BA	5.07	3.93	2.93	2.25	2.01

GE No.†	Cap., μF	WV DC	Size *	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249
92F185	3900	25	BC	$ 5.94	$ 4.61	$ 3.43	$ 2.64	$ 2.36
92F186	5100	25	EA	6.44	5.00	3.72	2.86	2.56
92F187	5900	25	BE	6.79	5.27	3.92	3.02	2.70
92F188	6900	25	BF	7.22	5.61	4.17	3.21	2.87
92F189	7900	25	BG	7.64	5.94	4.42	3.39	3.04
92F190	8900	25	BH	8.07	6.27	4.66	3.58	3.21
92F191	10000	25	EC	8.54	6.63	4.93	3.79	3.40
92F192	15000	25	EE	10.70	8.31	6.18	4.75	4.25
92F193	17000	25	FC	11.55	8.97	6.67	5.13	4.59
92F194	18000	25	EF	11.98	9.30	6.92	5.32	4.76
92F195	20000	25	EG	12.83	9.96	7.41	5.70	5.10
92F196	23000	25	EH	14.11	10.95	8.15	6.26	5.61
92F197	25000	25	FE	14.98	11.63	8.65	6.65	5.96
92F198	30000	25	FF	17.11	13.29	9.88	7.60	6.80
92F199	34000	25	FG	18.81	14.61	10.87	8.36	7.48
92F200	38000	25	FH	20.54	15.95	11.87	9.12	8.17
92F201	38000	25	GE	20.54	15.95	11.87	9.12	8.17
92F202	45000	25	GF	23.55	18.28	13.60	10.46	9.36
92F203	51000	25	GG	26.10	20.27	15.08	11.59	10.38
92F204	57000	25	GH	28.68	22.27	16.57	12.74	11.40
92F205	1700	30	BA	5.14	3.99	2.97	2.28	2.04
92F206	3400	30	BC	6.03	4.69	3.49	2.68	2.40
92F207	4300	30	EA	6.51	5.05	3.76	2.89	2.59
92F208	5000	30	BE	6.87	5.33	3.97	3.05	2.73
92F209	5900	30	BF	7.34	5.70	4.24	3.26	2.92
92F210	6700	30	BG	7.74	6.01	4.47	3.44	3.08
92F211	7600	30	BH	8.21	6.38	4.74	3.65	3.26
92F212	8700	30	EC	8.78	6.82	5.07	3.90	3.49
92F213	13000	30	EE	11.03	8.56	6.37	4.90	4.38
92F214	14000	30	FC	11.55	8.97	6.67	5.13	4.59
92F215	15000	30	EF	12.07	9.37	6.97	5.36	4.80
92F216	17000	30	EG	13.11	10.18	7.57	5.82	5.21
92F217	19000	30	EH	14.15	10.99	8.17	6.28	5.63
92F218	22000	30	FE	15.71	12.20	9.08	6.98	6.25
92F219	25000	30	FF	17.28	13.42	9.98	7.67	6.87
92F220	29000	30	FG	19.36	15.03	11.18	8.60	7.70
92F221	33000	30	FH	21.44	16.65	12.39	9.52	8.52
92F222	33000	30	GE	21.44	16.65	12.39	9.52	8.52
92F223	38000	30	GF	24.05	18.67	13.89	10.68	9.56
92F224	44000	30	GG	27.17	21.10	15.69	12.07	10.80
92F225	49000	30	GH	29.77	23.12	17.20	13.22	11.83
92F226	1100	40	BA	5.16	4.01	2.98	2.29	2.05
92F227	2100	40	BC	5.99	4.65	3.46	2.66	2.38
92F228	2800	40	EA	6.56	5.09	3.79	2.91	2.61
92F229	3200	40	BE	6.89	5.35	3.98	3.06	2.74
92F230	3800	40	BF	7.38	5.73	4.26	3.28	2.94
92F231	4300	40	BG	7.79	6.05	4.50	3.46	3.10
92F232	4900	40	BH	8.29	6.43	4.79	3.68	3.29
92F233	5600	40	EC	8.85	6.87	5.11	3.93	3.52
92F234	8400	40	EE	11.15	8.66	6.44	4.95	4.43
92F235	9500	40	FC	12.07	9.37	6.97	5.36	4.80
92F236	9800	40	EF	12.31	9.56	7.11	5.47	4.89
92F237	11000	40	EG	13.30	10.33	7.68	5.91	5.29
92F238	12000	40	EH	14.11	10.95	8.15	6.26	5.61
92F239	14000	40	FE	15.76	12.24	9.10	7.00	6.27
92F240	16000	40	FF	17.39	13.51	10.05	7.72	6.91
92F241	19000	40	FG	19.86	15.42	11.47	8.82	7.89
92F242	21000	40	FH	21.51	16.70	12.43	9.55	8.55
92F243	21000	40	GE	21.51	16.70	12.43	9.55	8.55
92F244	24000	40	GF	23.98	18.62	13.85	10.65	9.53
92F245	28000	40	GG	27.26	21.17	15.75	12.11	10.84
92F246	32000	40	GH	30.53	23.71	17.64	13.56	12.14
92F247	850	50	BA	5.11	3.97	2.95	2.27	2.03
92F248	1700	50	BC	5.99	4.65	3.46	2.66	2.38
92F249	2200	50	EA	6.49	5.04	3.75	2.88	2.58
92F250	2500	50	BE	6.79	5.27	3.92	3.02	2.70
92F251	2900	50	BF	7.19	5.59	4.16	3.19	2.86
92F252	3400	50	BG	7.69	5.97	4.44	3.42	3.06
92F253	3800	50	BH	8.10	6.29	4.68	3.60	3.22
92F254	4400	50	EC	8.71	6.76	5.03	3.87	3.46
92F255	6600	50	EE	10.94	8.49	6.32	4.86	4.35
92F256	7400	50	FC	11.74	9.12	6.78	5.21	4.67
92F257	7700	50	EF	12.05	9.35	6.96	5.35	4.79
92F258	8800	50	EG	13.16	10.22	7.60	5.84	5.23
92F259	9800	50	EH	14.15	10.99	8.17	6.28	5.63
92F260	11000	50	FE	15.39	11.95	8.89	6.83	6.12
92F261	13000	50	FF	17.39	13.51	10.05	7.72	6.91
92F262	14000	50	FG	18.41	14.30	10.64	8.18	7.32
92F263	16000	50	FH	20.42	15.86	11.80	9.07	8.12
92F264	16000	50	GE	20.42	15.86	11.80	9.07	8.12
92F265	19000	50	GE	23.45	18.21	13.55	10.42	9.32
92F266	22000	50	GG	26.48	20.56	15.30	11.76	10.53
92F267	25000	50	GH	29.54	22.93	17.06	13.12	11.74
92F268	540	75	BA	5.28	4.10	3.05	2.34	2.10
92F269	1000	75	BC	6.15	4.78	3.55	2.73	2.45
92F270	1400	75	EA	6.91	5.37	3.99	3.07	2.75
92F271	1600	75	BE	7.29	5.66	4.21	3.24	2.90
92F272	1900	75	BF	7.86	6.10	4.54	3.49	3.12
92F273	2100	75	BG	8.24	6.40	4.76	3.66	3.27
92F274	2400	75	BH	8.80	6.84	5.09	3.91	3.50
92F275	2800	75	EC	9.56	7.42	5.52	4.25	3.80
92F276	4200	75	EE	12.21	9.48	7.05	5.42	4.86
92F277	4900	75	EF	13.54	10.51	7.82	6.01	5.38
92F278	5600	75	EG	14.86	11.54	8.59	6.60	5.91
92F279	6300	75	EH	16.19	12.57	9.35	7.19	6.43
92F280	7000	75	FC	17.51	13.60	10.12	7.78	6.96
92F281	10000	75	FE	23.19	18.01	13.40	10.30	9.22
92F282	12000	75	FF	26.98	20.95	15.58	11.98	10.73
92F283	14000	75	FG	30.77	23.89	17.77	13.66	12.23
92F284	15000	75	FH	32.66	25.36	18.87	14.50	12.98
92F285	15000	75	GE	32.66	25.36	18.87	14.50	12.98
92F286	18000	75	GF	38.34	29.77	22.15	17.03	15.24
92F287	21000	75	GG	44.02	34.18	25.43	19.55	17.50
92F288	23000	75	GH	47.81	37.12	27.62	21.23	19.00

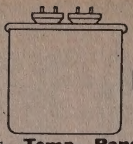
†Add suffix **AMA** to all GE numbers.

GENERAL ELECTRIC

ALUMINUM MINIATURE AND GENERAL PURPOSE CAPACITORS



A



B

ALUMINUM MINIATURE CAPACITORS (FIG. A)

Units feature pressure welded cathode tabs. **Temp. Range:** −20°C to 85°C. **Tol:** −10% to +75% for 25 WVDC or below; −10% to +50% all others. Closer tolerances on request.

GE No.	Cap., μF	WV DC	*	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
76F02BC1R0	1	3	C	$0.482	$0.327	$0.259	$0.198	$0.172
76F02BC2R0	2	3	C	.482	.327	.259	.198	.172
76F02BC3R0	3	3	C	.482	.327	.259	.198	.172
76F02BC4R0	4	3	C	.482	.327	.259	.198	.172
76F02BC5R0	5	3	C	.482	.327	.259	.198	.172
76F02BC6R0	6	3	C	.482	.327	.259	.198	.172
76F02BC8R0	8	3	C	.482	.327	.259	.198	.172
76F02BC100	10	3	C	.482	.327	.259	.198	.172
76F02BC150	15	3	C	.482	.327	.259	.198	.172
76F02BC200	20	3	C	.482	.327	.259	.198	.172
76F02BC250	25	3	C	.482	.327	.259	.198	.172
76F02BC300	30	3	C	.482	.327	.259	.198	.172
76F02BD500	50	3	D	.482	.327	.259	.198	.172
76F02BD650	65	3	D	.482	.327	.259	.198	.172
76F02BE101	100	3	E	.55	.373	.296	.227	.196
76F02BE131	130	3	E	.55	.373	.296	.227	.196
76F02BF151	150	3	F	.675	.458	.362	.278	.241
76F02BF201	200	3	F	.675	.458	.362	.278	.241
76F02BK251	250	3	K	.70	.475	.376	.288	.25
76F02BK291	290	3	K	.70	.475	.376	.288	.25
76F02BL391	390	3	L	.728	.494	.391	.30	.26
76F02BM501	500	3	M	.778	.528	.418	.32	.278
76F02BM591	590	3	M	.778	.528	.418	.32	.278
76F02BN791	790	3	N	.812	.551	.436	.334	.29
76F02CC1R0	1	6	C	.482	.327	.259	.198	.172
76F02CC2R0	2	6	C	.482	.327	.259	.198	.172
76F02CC3R0	3	6	C	.482	.327	.259	.198	.172
76F02CC4R0	4	6	C	.482	.327	.259	.198	.172
76F02CC5R0	5	6	C	.482	.327	.259	.198	.172
76F02CC6R0	6	6	C	.482	.327	.259	.198	.172
76F02CC8R0	8	6	C	.482	.327	.259	.198	.172
76F02CC100	10	6	C	.482	.327	.259	.198	.172
76F02CC150	15	6	C	.482	.327	.259	.198	.172
76F02CC200	20	6	C	.482	.327	.259	.198	.172
76F02CD250	25	6	D	.482	.327	.259	.198	.172
76F02CD350	35	6	D	.482	.327	.259	.198	.172
76F02CD400	40	6	D	.482	.327	.259	.198	.172
76F02CE750	75	6	E	.55	.373	.296	.227	.196
76F02CE900	90	6	E	.55	.373	.296	.227	.196
76F02CF101	100	6	F	.675	.458	.362	.278	.241
76F02CF141	140	6	F	.675	.458	.362	.278	.241
76F02CK151	150	6	K	.70	.475	.376	.288	.25
76F02CK201	200	6	K	.70	.475	.376	.288	.25
76F02CL251	250	6	L	.728	.494	.391	.30	.26
76F02CL281	280	6	L	.728	.494	.391	.30	.26
76F02CM301	300	6	M	.778	.528	.418	.32	.278
76F02CM401	400	6	M	.778	.528	.418	.32	.278
76F02CN561	560	6	N	.812	.551	.436	.334	.29
76F02EC1R0	1	12	C	.482	.327	.259	.198	.172
76F02EC2R0	2	12	C	.482	.327	.259	.198	.172
76F02EC3R0	3	12	C	.482	.327	.259	.198	.172
76F02EC4R0	4	12	C	.482	.327	.259	.198	.172
76F02EC5R0	5	12	C	.482	.327	.259	.198	.172
76F02EC6R0	6	12	C	.482	.327	.259	.198	.172
76F02EC8R0	8	12	C	.482	.327	.259	.198	.172
76F02EC100	10	12	C	.482	.327	.259	.198	.172
76F02EC150	15	12	C	.482	.327	.259	.198	.172
76F02ED200	20	12	D	.482	.327	.259	.198	.172
76F02ED250	25	12	D	.482	.327	.259	.198	.172
76F02ED300	30	12	D	.482	.327	.259	.198	.172
76F02EE500	50	12	E	.55	.373	.296	.227	.196
76F02EE600	60	12	E	.55	.373	.296	.227	.196
76F02EF750	75	12	F	.675	.458	.362	.278	.241
76F02EF900	90	12	F	.675	.458	.362	.278	.241
76F02EK101	100	12	K	.70	.475	.376	.288	.25
76F02EK141	140	12	K	.70	.475	.376	.288	.25
76F02EL151	150	12	L	.728	.494	.391	.30	.26
76F02EL191	190	12	L	.728	.494	.391	.30	.26
76F02EM201	200	12	M	.778	.528	.418	.32	.278
76F02EM251	250	12	M	.778	.528	.418	.32	.278
76F02EM291	290	12	M	.778	.528	.418	.32	.278
76F02EN391	390	12	N	.812	.551	.436	.334	.29
76F02FC1R0	1	15	C	.482	.327	.259	.198	.172
76F02FC2R0	2	15	C	.482	.327	.259	.198	.172
76F02FC3R0	3	15	C	.482	.327	.259	.198	.172
76F02FC4R0	4	15	C	.482	.327	.259	.198	.172
76F02FC5R0	5	15	C	.482	.327	.259	.198	.172
76F02FC6R0	6	15	C	.482	.327	.259	.198	.172
76F02FC8R0	8	15	C	.482	.327	.259	.198	.172
76F02FC100	10	15	C	.482	.327	.259	.198	.172
76F02FD150	15	15	D	.482	.327	.259	.198	.172
76F02FD200	20	15	D	.482	.327	.259	.198	.172
76F02FD250	25	15	D	.482	.327	.259	.198	.172
76F02FE300	30	15	E	.55	.373	.296	.227	.196
76F02FE350	35	15	E	.55	.373	.296	.227	.196
76F02FE500	50	15	E	.55	.373	.296	.227	.196
76F02FF750	75	15	F	.675	.458	.362	.278	.241
76F02FF850	85	15	F	.675	.458	.362	.278	.241
76F02FK101	100	15	K	.70	.475	.376	.288	.25
76F02FK131	130	15	K	.70	.475	.376	.288	.25
76F02FK900	90	15	K	.70	.475	.376	.288	.25
76F02FL151	150	15	L	.728	.494	.391	.30	.26
76F02FL171	170	15	L	.728	.494	.391	.30	.26
76F02FM201	200	15	M	.778	.528	.418	.32	.278
76F02FM261	260	15	M	$0.778	$0.528	$0.418	$0.32	$0.278
76F02FN351	350	15	N	.812	.551	.436	.334	.29
76F02KC1R0	1	25	C	.482	.327	.259	.198	.172
76F02KC2R0	2	25	C	.482	.327	.259	.198	.172
76F02KC3R0	3	25	C	.482	.327	.259	.198	.172
76F02KC4R0	4	25	C	.482	.327	.259	.198	.172
76F02KC5R0	5	25	C	.482	.327	.259	.198	.172
76F02KC6R0	6	25	C	.482	.327	.259	.198	.172
76F02KC8R0	8	25	C	.482	.327	.259	.198	.172
76F02KD100	10	25	D	.482	.327	.259	.198	.172
76F02KD150	15	25	D	.482	.327	.259	.198	.172
76F02KE250	25	25	E	.55	.373	.296	.227	.196
76F02KE300	30	25	E	.55	.373	.296	.227	.196
76F02KE350	35	25	E	.55	.373	.296	.227	.196
76F02KF500	50	25	F	.675	.458	.362	.278	.241
76F02KK750	75	25	K	.70	.475	.376	.288	.25
76F02KL101	100	25	L	.728	.494	.391	.30	.26
76F02KM151	150	25	M	.778	.528	.418	.32	.278
76F02KN201	200	25	N	.812	.551	.436	.334	.29
76F02LC1R0	1	50	C	.482	.327	.259	.198	.172
76F02LC2R0	2	50	C	.482	.327	.259	.198	.172
76F02LC3R0	3	50	C	.482	.327	.259	.198	.172
76F02LC4R0	4	50	C	.482	.327	.259	.198	.172
76F02LD5R0	5	50	D	.482	.327	.259	.198	.172
76F02LD6R0	6	50	D	.482	.327	.259	.198	.172
76F02LD8R0	8	50	D	.482	.327	.259	.198	.172
76F02LE100	10	50	E	.55	.373	.296	.227	.196
76F02LE150	15	50	E	.55	.373	.296	.227	.196
76F02LF200	20	50	F	.675	.458	.362	.278	.241
76F02LF250	25	50	F	.675	.458	.362	.278	.241
76F02LK350	35	50	K	.70	.475	.376	.288	.25
76F02LL500	50	50	L	.728	.494	.391	.30	.26
76F02LM750	75	50	M	.778	.528	.418	.32	.278
76F02LN101	100	50	N	.812	.551	.436	.334	.29
76F02MC1R0	1	100	C	.482	.327	.259	.198	.172
76F02MD2R0	2	100	D	.482	.327	.259	.198	.172
76F02ME3R0	3	100	E	.55	.373	.296	.227	.196
76F02ME4R0	4	100	E	.55	.373	.296	.227	.166
76F02MF5R0	5	100	F	.675	.458	.362	.278	.241
76F02MF6R0	6	100	F	.675	.458	.362	.278	.241
76F02MK8R0	8	100	K	.70	.475	.376	.288	.25
76F02MK100	10	100	K	.70	.475	.376	.288	.25
76F02ML150	15	100	L	.728	.494	.391	.30	.26
76F02MM200	20	100	M	.778	.528	.418	.32	.278
76F02MN250	25	100	N	.812	.551	.436	.334	.29
76F02MN300	30	100	N	.812	.551	.436	.334	.29
76F02NC1R0	1	150	C	.482	.327	.259	.198	.172
76F02ND2R0	2	150	D	.482	.327	.259	.198	.172
76F02NE3R0	3	150	E	.55	.373	.296	.227	.196
76F02NF4R0	4	150	F	.675	.458	.362	.278	.241
76F02NK5R0	5	150	K	.70	.475	.376	.288	.25
76F02NK6R0	6	150	K	.70	.475	.376	.288	.25
76F02NK7R0	7	150	K	.70	.475	.376	.288	.25
76F02NK8R0	8	150	K	.70	.475	.376	.288	.25
76F02NL100	10	150	L	.728	.494	.391	.30	.26
76F02NM150	15	150	M	.778	.528	.418	.32	.278
76F02NN200	20	150	N	.812	.551	.436	.334	.29

***Size:** With insulating sleeve—**C,** 9/32″ x 9/16″; **D,** 9/32″ x 3/4″; **E,** 11/32″ x 3/4″; **F,** 13/32″ x 3/4″; **K,** 13/32″ x 7/8″; **L,** 13/32″ x 1″; **M,** 13/32″ x 1 5/16″; **N,** 13/32″ x 1 9/16″.

GENERAL PURPOSE AC CAPACITORS (FIG. B)

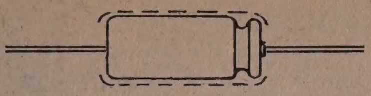
Feature Pyranol® II liquid impregnant that eliminates accelerated aging, increases reliability, and provides up to five times normal life expectancy. 660 VAC also available, write for complete information.

GE No.	Cap., μF	Nom. Volts AC	Oval Case Size, Inches W.	D.	Ht.	Net Each, Lots of 1-9	10-24	25-49	50-99
45F929	5	330	2.16	1.31	2.06	$ 3.36	$ 2.10	$ 1.51	$1.18
45F168	6	330	2.16	1.31	2.56	3.72	2.33	1.67	1.30
45F169	7.5	330	2.16	1.31	3.06	4.40	2.75	1.98	1.54
45F170	10	330	2.16	1.31	3.82	5.60	3.50	2.52	1.96
45F906	12.5	330	2.16	1.31	4.69	6.20	3.88	2.79	2.17
45F171	20	330	2.91	1.91	4.25	9.60	6.00	4.32	3.36
45F172	25	330	2.91	1.91	5.25	11.40	7.13	5.13	3.99
45F173	30	330	2.91	1.91	6.25	13.60	8.50	6.12	4.76
45F198	35	330	2.91	1.91	7.25	15.20	9.50	6.84	5.32
45F919	40	330	2.91	1.91	8.00	17.00	10.63	7.65	5.95
45F271	3	370	2.16	1.31	2.06	2.96	1.85	1.33	1.04
45F272	4	370	2.16	1.31	2.06	3.20	2.00	1.44	1.12
45F1450	5	370	2.16	1.31	2.31	3.60	2.25	1.62	1.26
45F275	7.5	370	2.16	1.31	3.44	4.60	2.88	2.07	1.61
45F276	10	370	2.16	1.31	4.18	5.80	3.63	2.61	2.03
45F277	12.5	370	2.91	1.91	2.88	7.00	4.38	3.15	2.45
45F278	15	370	2.91	1.91	3.50	7.60	4.75	3.42	2.66
45F513	20	370	2.91	1.91	4.50	10.00	6.25	4.50	3.50
45F863	30	370	2.91	1.91	6.75	14.00	8.75	6.30	4.90
45F1438	35	370	3.66	1.97	6.25	15.80	9.88	7.11	5.53
45F519	50	370	3.66	1.97	9.00	22.00	13.75	9.90	7.70
45F391	3	440	2.16	1.31	2.31	3.76	2.35	1.69	1.32
45F336	5	440	2.16	1.31	3.44	4.80	3.00	2.16	1.68
45F355	15	440	2.91	1.91	4.50	9.80	6.13	4.41	3.13
45F1191	20	440	2.91	1.91	5.75	12.00	7.50	5.40	4.20
45F358	25	440	2.91	1.91	7.25	14.20	8.88	6.39	4.97
45F1172	30	440	3.66	1.97	6.25	17.00	10.63	7.65	5.95
45F1165	35	440	3.66	1.97	7.25	19.80	12.38	8.91	6.93
45F1116	40	440	3.66	1.97	8.00	22.00	13.75	9.90	7.70
45F1118	45	440	3.66	1.97	9.00	24.60	15.38	11.07	8.61

LARGER QUANTITY PRICES ON REQUEST

GENERAL ELECTRIC

EXTENDED TEMPERATURE ALUMINUM MINIATURE TUBULAR CAPACITORS



PREMIUM INDUSTRIAL CAPACITORS

Compact aluminum-foil miniature capacitors offer long life (2000 hours) over wide temperature range of −40° to +105° C. Fully creened for low leakage current. Butyl-rubber seal with spun-over crimp; heat-shrunk polyester sleeving insulation; 2″ axial leads.

GE Type Number	Cap., µF†	WV DC	Case *
77F02BC1R0	1	3	C
77F02BC2R0	2	3	C
77F02BC3R0	3	3	C
77F02BC4R0	4	3	C
77F02BD5R0	5	3	D
77F02BD6R0	6	3	D
77F02BD8R0	8	3	D
77F02BD100	10	3	D
77F02BD150	15	3	D
77F02BD200	20	3	D
77F02BD250	25	3	D
77F02BD350	35	3	D
77F02BD400	40	3	D
77F02BE500	50	3	E
77F02BE750	75	3	E
77F02BF101	100	3	F
77F02BK151	150	3	K
77F02BK201	200	3	K
77F02BL251	250	3	L
77F02BL281	280	3	L
77F02BM301	300	3	M
77F02BM401	400	3	M
77F02BN561	560	3	N
77F02CC1R0	1	6	C
77F02CC2R0	2	6	C
77F02CC3R0	3	6	C
77F02CC4R0	4	6	C
77F02CD5R0	5	6	D
77F02CD6R0	6	6	D
77F02CD8R0	8	6	D
77F02CD100	10	6	D
77F02CD150	15	6	D
77F02CD200	20	6	D
77F02CD250	25	6	D
77F02CD300	30	6	D
77F02CE350	35	6	E
77F02CE500	50	6	E
77F02CF750	75	6	F
77F02CF900	90	6	F
77F02CK101	100	6	K
77F02CK141	140	6	K
77F02CL151	150	6	L
77F02CL171	170	6	L
77F02CL191	190	6	L
77F02CM201	200	6	M
77F02CM251	250	6	M
77F02CM291	290	6	M
77F02CN351	350	6	N
77F02CN391	390	6	N
77F02EC1R0	1	12	C
77F02EC2R0	2	12	C
77F02EC3R0	3	12	C
77F02EC4R0	4	12	C
77F02ED5R0	5	12	D
77F02ED6R0	6	12	D
77F02ED8R0	8	12	D
77F02ED100	10	12	D
77F02ED150	15	12	D
77F02ED200	20	12	D
77F02EE250	25	12	E
77F02EE350	35	12	E
77F02EF500	50	12	F
77F02EF750	75	12	F
77F02EK750	75	12	K
77F02EL101	100	12	L
77F02EL151	150	12	L
77F02EM201	200	12	M
77F02EN301	300	12	N
77F02FC1R0	1	15	C
77F02FC2R0	2	15	C
77F02FC3R0	3	15	C
77F02FC4R0	4	15	C
77F02FD5R0	5	15	D
77F02FD6R0	6	15	D
77F02FD8R0	8	15	D
77F02FD100	10	15	D
77F02FD150	15	15	D
77F02FE250	25	15	E
77F02FE350	35	15	E
77F02FF500	50	15	F
77F02FK750	75	15	K
77F02FL101	100	15	L
77F02FM151	150	15	M
77F02FN201	200	15	N
77F02FN251	250	15	N
77F02KC1R0	1	25	C
77F02KC2R0	2	25	C
77F02KC3R0	3	25	C
77F02KC4R0	4	25	C
77F02KD5R0	5	25	D
77F02KD6R0	6	25	D
77F02KD8R0	8	25	D
77F02KD100	10	25	D
77F02KE150	15	25	E
77F02KF200	20	25	F
77F02KF250	25	25	F
77F02KK350	35	25	K
77F02KL500	50	25	L
77F02KM750	75	25	M
77F02KN101	100	25	N
77F02LC1R0	1	50	C
77F02LD2R0	2	50	D
77F02LD3R0	3	50	D
77F02LD4R0	4	50	D
77F02LD5R0	5	50	D
77F02LE6R0	6	50	E
77F02LE8R0	8	50	E
77F02LF100	10	50	F
77F02LF150	15	50	F
77F02LK200	20	50	K
77F02LK250	25	50	K
77F02LL300	30	50	L
77F02LM500	50	50	M
77F02LN700	70	50	N
77F02TC1R0	1	75	C
77F02TD2R0	2	75	D
77F02TE3R0	3	75	E
77F02TE4R0	4	75	E
77F02TF5R0	5	75	F
77F02TF6R0	6	75	F
77F02TK8R0	8	75	K
77F02TK100	10	75	K
77F02TL150	15	75	L
77F02TM200	20	75	M
77F02TN250	25	75	N
77F02TN300	30	75	N
77F02MC1R0	1	100	C
77F02MD2R0	2	100	D
77F02ME3R0	3	100	E
77F02MF4R0	4	100	F
77F02MK5R0	5	100	K
77F02MK6R0	6	100	K
77F02MK8R0	8	100	K
77F02ML100	10	100	L
77F02MM150	15	100	M
77F02MN200	20	100	N
77F02NC1R0	1	150	C
77F02ND2R0	2	150	D
77F02NE3R0	3	150	E
77F02NF4R0	4	150	F
77F02NK5R0	5	150	K
77F02NK6R0	6	150	K
77F02NK8R0	8	150	K
77F02NL100	10	150	L
77F02NM150	15	150	M

At 25° C; tolerance −10% to +75% for 15 V and below, all thers −10% to +50%.

*PRICES AND CASE SIZES—SERIES 77F

Case Code *	Size, Inches Dia. x L.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
C	9/32 x 9/16	$0.628	$0.426	$0.337	$0.259	$0.224
D	9/32 x 3/4	.628	.426	.337	.259	.224
E	11/32 x 3/4	.715	.485	.384	.294	.255
F	13/32 x 3/4	.877	.595	.471	.361	.313
K	13/32 x 7/8	.911	.618	.489	.375	.325
L	13/32 x 1	.945	.641	.508	.389	.337
M	13/32 x 1 5/16	1.01	.688	.544	.417	.362
N	13/32 x 1 9/16	1.06	.717	.568	.435	.377

WIDE-RANGE MINIATURE CAPACITORS

Compact aluminum-foil capacitors, 2000-hour life over temperature range of −40° to +125° C. Butyl-rubber seal with spun-over crimp; heat-shrunk polyester sleeving insulation; 2″ axial leads.

GE Type Number	Cap., µF†	WV DC	Case *
78F02BC1R0	1	2	C
78F02BC2R0	2	2	C
78F02BC3R0	3	2	C
78F02BC4R0	4	2	C
78F02BC5R0	5	2	C
78F02BC6R0	6	2	C
78F02BC8R0	8	2	C
78F02BC100	10	2	C
78F02BC150	15	2	C
78F02BC200	20	2	C
78F02BC250	25	2	C
78F02BC300	30	2	C
78F02BD500	50	2	D
78F02BD650	65	2	D
78F02BE101	100	2	E
78F02BE131	130	2	E
78F02BF151	150	2	F
78F02BF201	200	2	F
78F02BK251	250	2	K
78F02BK291	290	2	K
78F02BL391	390	2	L
78F02BM501	500	2	M
78F02BM591	590	2	M
78F02BN791	790	2	N
78F02CC1R0	1	4	C
78F02CC2R0	2	4	C
78F02CC3R0	3	4	C
78F02CC4R0	4	4	C
78F02CC5R0	5	4	C
78F02CC6R0	6	4	C
78F02CC8R0	8	4	C
78F02CC100	10	4	C
78F02CC150	15	4	C
78F02CC200	20	4	C
78F02CD250	25	4	D
78F02CD350	35	4	D
78F02CD400	40	4	D
78F02CE750	75	4	E
78F02CE900	90	4	E
78F02CF101	100	4	F
78F02CF141	140	4	F
78F02CK151	150	4	K
78F02CK201	200	4	K
78F02CL251	250	4	L
78F02CL281	280	4	L
78F02CM301	300	4	M
78F02CM401	400	4	M
78F02CN561	560	4	N
78F02EC1R0	1	8	C
78F02EC2R0	2	8	C
78F02EC3R0	3	8	C
78F02EC4R0	4	8	C
78F02EC5R0	5	8	C
78F02EC6R0	6	8	C
78F02EC8R0	8	8	C
78F02EC100	10	8	C
78F02EC150	15	8	C
78F02ED200	20	8	D
78F02ED250	25	8	D
78F02ED300	30	8	D
78F02EE500	50	8	E
78F02EE600	60	8	E
78F02EF750	75	8	F
78F02EF900	90	8	F
78F02EK101	100	8	K
78F02EK141	140	8	K
78F02EL151	150	8	L
78F02EL191	190	8	L
78F02EM201	200	8	M
78F02EM251	250	8	M
78F02EM291	290	8	M
78F02EN391	390	8	N
78F02FC1R0	1	10	C
78F02FC2R0	2	10	C
78F02FC3R0	3	10	C
78F02FC4R0	4	10	C
78F02FC5R0	5	10	C
78F02FC6R0	6	10	C
78F02FC8R0	8	10	C
78F02FC100	10	10	C
78F02FD150	15	10	D
78F02FD200	20	10	D
78F02FD250	25	10	D
78F02FE300	30	10	E
78F02FE350	35	10	E
78F02FE500	50	10	E
78F02FF750	75	10	F
78F02FF850	85	10	F
78F02FK900	90	10	K
78F02FK101	100	10	K
78F02FK131	130	10	K
78F02FL151	150	10	L
78F02FL171	170	10	L
78F02FM201	200	10	M
78F02FM261	260	10	M
78F02FN351	350	10	N
78F02KC1R0	1	17	C
78F02KC2R0	2	17	C
78F02KC3R0	3	17	C
78F02KC4R0	4	17	C
78F02KC5R0	5	17	C
78F02KC6R0	6	17	C
78F02KC8R0	8	17	C
78F02KD100	10	17	D
78F02KD150	15	17	D
78F02KE250	25	17	E
78F02KE300	30	17	E
78F02KE350	35	17	E
78F02KF500	50	17	F
78F02KK750	75	17	K
78F02KL101	100	17	L
78F02KM151	150	17	M
78F02KN201	200	17	N
78F02LC1R0	1	35	C
78F02LC2R0	2	35	C
78F02LC3R0	3	35	C
78F02LC4R0	4	35	C
78F02LD5R0	5	35	D
78F02LD6R0	6	35	D
78F02LD8R0	8	35	D
78F02LE100	10	35	E
78F02LE150	15	35	E
78F02LF200	20	35	F
78F02LF250	25	35	F
78F02LK350	35	35	K
78F02LL500	50	35	L
78F02LM750	75	35	M
78F02LN101	100	35	N
78F02TC1R0	1	50	C
78F02TD2R0	2	50	D
78F02TD3R0	3	50	D
78F02TD4R0	4	50	D
78F02TD5R0	5	50	D
78F02TE6R0	6	50	E
78F02TE8R0	8	50	E
78F02TF100	10	50	F
78F02TF150	15	50	F
78F02TK200	20	50	K
78F02TK250	25	50	K
78F02TL300	30	50	L
78F02TM500	50	50	M
78F02TN700	70	50	N
78F02MC1R0	1	65	C
78F02MD2R0	2	65	D
78F02ME3R0	3	65	E
78F02ME4R0	4	65	E
78F02MF5R0	5	65	F
78F02MF6R0	6	65	F
78F02MK8R0	8	65	K
78F02MK100	10	65	K
78F02ML150	15	65	L
78F02MM200	20	65	M
78F02MN250	25	65	N
78F02MN300	30	65	N
78F02NC1R0	1	100	C
78F02ND2R0	2	100	D
78F02NE3R0	3	100	E
78F02NF4R0	4	100	F
78F02NK5R0	5	100	K
78F02NK6R0	6	100	K
78F02NK7R0	7	100	K
78F02NK8R0	8	100	K
78F02NL100	10	100	L
78F02NM150	15	100	M
78F02NN200	20	100	N

†At 25° C; tolerance −10% to +75% for 17 V and below, all others −10% to +50%.

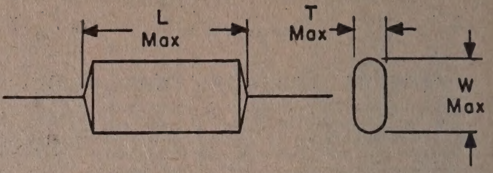
*PRICES AND CASE SIZES—SERIES 78F

Case Code *	Size, Inches Dia. x L.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
C	9/32 x 9/16	$0.753	$0.511	$0.404	$0.31	$0.269
D	9/32 x 3/4	.753	.511	.404	.31	.269
E	11/32 x 3/4	.858	.582	.461	.353	.306
F	13/32 x 3/4	1.05	.715	.566	.434	.376
K	13/32 x 7/8	1.09	.743	.588	.451	.391
L	13/32 x 1	1.14	.772	.611	.469	.406
M	13/32 x 1 5/16	1.22	.825	.653	.501	.434
N	13/32 x 1 9/16	1.27	.861	.681	.522	.453

GENERAL ELECTRIC METALLIZED POLYESTER AND POLYCARBONATE FILM TUBULAR CAPACITORS

METALLIZED POLYESTER FILM CAPACITORS

Oval, space-saving capacitors offer long, trouble-free life. Tape wrap, epoxy end-fill construction. Temperature range, −55° to +85° C at rated voltage; up to +125° C derated. Dissipation factor at 25° C will not exceed 1.0%. Withstands DC voltage test of 200% of rated voltage, applied for up to one minute at 25° C. Axial leads, 1⅝″ long. Ratings shown at 85° C. **Tolerance:** ±10% or ±5%.



100 VOLTS DC (±10% TOLERANCE)

GE No. BA-	Cap., µF	Size, Inches			Net Each, Lots of			
		L.	W.	Th.	1-24	25-49	50-99	100-499*
12A104A	.10	.656	.311	.187	$1.194	$0.876	$0.677	$0.517
12A154A	.15	.656	.358	.218	1.269	.931	.719	.55
13A224A	.22	.782	.311	.171	1.341	.983	.76	.581
13A334A	.33	.782	.358	.218	1.494	1.096	.847	.647
13A474A	.47	.782	.374	.249	1.644	1.206	.932	.712
13A684A	.68	.782	.421	.296	1.788	1.311	1.013	.775
14A105A	1.0	.906	.452	.280	1.941	1.423	1.10	.841
15A155A	1.5	1.031	.530	.327	2.241	1.643	1.27	.971
15A205A	2.0	1.031	.593	.374	2.427	1.78	1.375	1.052
17A305A	3.0	1.344	.624	.405	2.91	2.134	1.649	1.261
18A405A	4.0	1.594	.718	.374	3.804	2.79	2.156	1.648
18A505A	5.0	1.594	.765	.436	4.665	3.421	2.644	2.022
19A805A	8.0	1.844	.905	.483	5.898	4.325	3.342	2.556
19A106A	10.0	1.844	.983	.577	7.125	5.225	4.038	3.088

100 VOLTS DC (±5% TOLERANCE)

GE No. BA-	Cap., µF	Size, Inches			Net Each, Lots of			
		L.	W.	Th.	1-24	25-49	50-99	100-499*
12A104C	.10	.656	.311	.187	$1.614	$1.184	$0.915	$0.699
12A154C	.15	.656	.358	.218	1.713	1.256	.971	.742
13A224C	.22	.782	.311	.171	1.812	1.329	1.027	.785
13A334C	.33	.782	.358	.218	2.016	1.478	1.142	.874
13A474C	.47	.782	.374	.249	2.22	1.628	1.258	.962
13A684C	.68	.782	.421	.296	2.415	1.771	1.369	1.047
14A105C	1.0	.906	.452	.280	2.622	1.923	1.486	1.136
15A155C	1.5	1.031	.530	.327	3.024	2.218	1.714	1.31
15A205C	2.0	1.031	.593	.374	3.276	2.402	1.856	1.42
17A305C	3.0	1.344	.624	.405	3.927	2.88	2.225	1.702
18A405C	4.0	1.594	.718	.374	5.139	3.769	2.912	2.227
18A505C	5.0	1.594	.765	.436	6.297	4.618	3.568	2.729
19A805C	8.0	1.844	.905	.483	7.959	5.837	4.51	3.449
19A106C	10.0	1.844	.983	.577	9.621	7.055	5.452	4.169

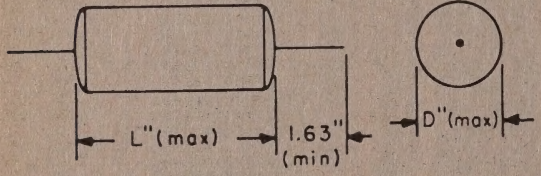
200 VOLTS DC (±10% TOLERANCE)

GE No. BA-	Cap., µF	Size, Inches			Net Each, Lots of			
		L.	W.	Th.	1-24	25-49	50-99	100-499*
12B104A	.10	.656	.374	.249	$0.765	$0.561	$0.434	$0.332
12B154A	.15	.656	.436	.311	.804	.59	.456	.348
13B224A	.22	.782	.421	.280	.879	.645	.498	.381
13B334A	.33	.782	.514	.327	.993	.728	.563	.43
13B474A	.47	.782	.577	.389	1.11	.814	.629	.481
15B684A	.68	1.032	.577	.374	1.302	.955	.738	.564
15B105A	1.0	1.032	.640	.436	1.377	1.01	.78	.597
17B155A	1.5	1.344	.640	.452	1.728	1.267	.979	.749
17B205A	2.0	1.344	.780	.452	1.974	1.448	1.119	.855
18B305A	3.0	1.594	.827	.499	2.328	1.707	1.319	1.009
18B405A	4.0	1.594	.952	.546	2.646	1.94	1.499	1.147
19B505A	5.0	1.844	.968	.577	3.00	2.20	1.70	1.30
21B805A	8.0	1.906	1.249	.749	4.179	3.065	2.368	1.811
21B106A	10.0	1.906	1.265	.812	5.364	3.934	3.04	2.324

200 VOLTS DC (±5% TOLERANCE)

GE No. BA-	Cap., µF	Size, Inches			Net Each, Lots of			
		L.	W.	Th.	1-24	25-49	50-99	100-499*
12B104C	.10	.656	.374	.249	$1.032	$0.757	$0.585	$0.447
12B154C	.15	.656	.436	.311	1.083	.794	.614	.469
13B224C	.22	.782	.421	.280	1.188	.871	.673	.515
13B334C	.33	.782	.514	.327	1.338	.981	.758	.58
13B474C	.47	.782	.577	.389	1.497	1.098	.848	.649
15B684C	.68	1.032	.577	.374	1.758	1.289	.996	.762
15B105C	1.0	1.032	.640	.436	1.86	1.364	1.054	.806
17B155C	1.5	1.344	.640	.452	2.334	1.712	1.323	1.011
17B205C	2.0	1.344	.780	.452	2.664	1.954	1.51	1.154
18B305C	3.0	1.594	.827	.499	3.144	2.306	1.782	1.362
18B405C	4.0	1.594	.952	.546	3.573	2.62	2.025	1.548
19B505C	5.0	1.844	.968	.577	4.047	2.968	2.293	1.754
21B805C	8.0	1.906	1.249	.749	5.643	4.138	3.198	2.445
21B106C	10.0	1.906	1.265	.812	7.245	5.313	4.106	3.14

POLYCARBONATE FILM TUBULAR CAPACITORS



Film and extended foil designed for high stability circuits. **Temp. Range:** −55° C to +125° C. **Dissipation Factor:** Max. .3% at 1000 Hz from 25° C to 125° C. Axial, tinned, copper-clad steel leads, 1⅝″ long. **Tolerance:** ±10%.

METALLIZED POLYCARBONATE FILM CAPACITORS

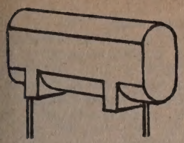
G.E. No.	Cap., µF	WV DC	Size, Inches Dia. x Lgth.	Net Each, Lots of		
				1-24	25-49	50-99*
74F01BA104	.10	200	.375 x .71	$1.188	$0.871	$0.673
74F01BA154	.15	200	.375 x .84	1.221	.895	.692
74F01BA224	.22	200	.431 x .84	1.287	.944	.729
74F01BA334	.33	200	.473 x .84	1.386	1.016	.785
74F01BA474	.47	200	.487 x 1.09	1.551	1.137	.879
74F01BA684	.68	200	.592 x 1.09	1.815	1.331	1.029
74F01BA105	1.0	200	.698 x 1.09	2.211	1.621	1.253
74F01BA155	1.5	200	.634 x 1.59	2.673	1.96	1.515
74F01BA205	2.0	200	.731 x 1.59	3.09	2.266	1.751
74F01BA305	3.0	200	.882 x 1.59	3.84	2.816	2.176
74F01BA405	4.0	200	.983 x 1.59	4.44	3.256	2.516
74F01BA505	5.0	200	1.000 x 1.84	5.01	3.674	2.839
74F01BA106	10.0	200	1.083 x 2.34	7.50	5.50	4.25

POLYCARBONATE FILM-FOIL CAPACITORS

G.E. No.	Cap., µF	WV DC	Size, Inches Dia. x Lgth.	Net Each, Lots of		
				1-24	25-49	50-99*
74F51AA103	.010	100	.281 x .45	$0.792	$0.581	$0.449
74F51AA153	.015	100	.312 x .45	.792	.581	.449
74F51AA223	.022	100	.266 x .75	.792	.581	.449
74F51AA333	.033	100	.297 x .75	.825	.605	.468
74F51AA473	.047	100	.328 x .75	.858	.629	.486
74F51AA683	.068	100	.391 x .75	.891	.653	.505
74F51AA104	.10	100	.406 x .88	.957	.702	.542
74F51AA154	.15	100	.468 x .88	1.056	.774	.598
74F51AA224	.22	100	.453 x 1.22	1.155	.847	.655
74F51AA334	.33	100	.516 x 1.22	1.287	.944	.729
74F51AA474	.47	100	.625 x 1.22	1.386	1.016	.785
74F51AA684	.68	100	.641 x 1.59	1.683	1.234	.954
74F51AA105	1.00	100	.719 x 1.59	1.95	1.43	1.105
74F51BA102	.0010	200	.231 x .45	.693	.508	.393
74F51BA152	.0015	200	.231 x .45	.693	.508	.393
74F51BA222	.0022	200	.231 x .45	.726	.532	.411
74F51BA332	.0033	200	.281 x .45	.726	.532	.411
74F51BA472	.0047	200	.281 x .45	.726	.532	.411
74F51BA682	.0068	200	.312 x .45	.759	.557	.43
74F51BA103	.010	200	.250 x .75	.825	.605	.468
74F51BA153	.015	200	.281 x .75	.825	.605	.468
74F51BA223	.022	200	.328 x .75	.858	.629	.486
74F51BA333	.033	200	.391 x .75	.924	.678	.524
74F51BA473	.047	200	.391 x .88	.957	.702	.542
74F51BA683	.068	200	.453 x .88	1.023	.75	.58
74F51BA104	.10	200	.438 x 1.22	1.089	.799	.617
74F51BA154	.15	200	.516 x 1.22	1.155	.847	.655
74F51BA224	.22	200	.625 x 1.22	1.287	.944	.729
74F51BA334	.33	200	.641 x 1.59	1.452	1.065	.823
74F51BA474	.47	200	.734 x 1.59	1.683	1.234	.954
74F51BA684	.68	200	.859 x 1.59	1.98	1.452	1.122
74F51BA105	1.00	200	.938 x 1.84	2.31	1.694	1.309

★LARGER QUANTITY PRICES ON REQUEST. ALSO WRITE FOR INFORMATION ON 20% TOL. METALLIZED POLYESTER FILM CAPACITORS; 5% TOL. POLYCARBONATE FILM-FOIL CAPACITORS AND 5% OR 20% TOL. METALLIZED POLYCARBONATE FILM CAPACITORS.

GENERAL ELECTRIC "BLACK HAWK" FILM CAPACITORS



Ideal for printed circuit board applications in test and measurement, control, communications and consumer products. Has rugged epoxy molded case with mounting feet and radial leads, 1½" long minimum. **Temperature Range:** −55° C to +125° C, with proper derating above 85° C. **Tolerance:** ±10%.

*CASE SIZES

Code *	Max. Size, Inches			Code *	Max. Size, Inches		
	Lgth.	Ht.	Thick.		Lgth.	Ht.	Thick.
A	.500	.471	.234	E	1.130	.569	.328
C	.800	.475	.244	F	1.130	.732	.480
D	.800	.531	.291				

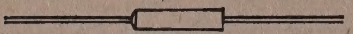
GE No.	Cap., μF	WV DC	Size *	Net Each, Lots of				
				1-24	25-49	50-99	100-499	500-999
75F1R5A102	.0010	50	A	$0.198	$0.145	$0.112	$0.086	$0.079
75F1R5A122	.0012	50	A	.198	.145	.112	.086	.079
75F1R5A152	.0015	50	A	.198	.145	.112	.086	.079
75F1R5A182	.0018	50	A	.198	.145	.112	.086	.079
75F1R5A222	.0022	50	A	.198	.145	.112	.086	.079
75F1R5A272	.0027	50	A	.198	.145	.112	.086	.079
75F1R5A332	.0033	50	A	.198	.145	.112	.086	.079
75F1R5A392	.0039	50	A	.198	.145	.112	.086	.079
75F1R5A472	.0047	50	A	.198	.145	.112	.086	.079
75F1R5A562	.0056	50	A	.198	.145	.112	.086	.079
75F1R5A682	.0068	50	A	.198	.145	.112	.086	.079
75F1R5A822	.0082	50	A	.198	.145	.112	.086	.079
75F1R5A103	.010	50	A	.198	.145	.112	.086	.079
75F1R5A123	.012	50	A	.198	.145	.112	.086	.079
75F1R5A153	.015	50	A	.198	.145	.112	.086	.079
75F1R5A183	.018	50	A	.198	.145	.112	.086	.079
75F1R5A223	.022	50	A	.198	.145	.112	.086	.079
75F1R5A273	.027	50	A	.198	.145	.112	.086	.079
75F1R5A333	.033	50	A	.21	.154	.119	.091	.084
75F1R5A393	.039	50	A	.21	.154	.119	.091	.084
75F1R5A473	.047	50	A	.213	.156	.121	.092	.085
75F1R5A563	.056	50	A	.213	.156	.121	.092	.085
75F3R5A683	.068	50	C	.234	.172	.133	.101	.094
75F3R5A823	.082	50	C	.252	.185	.143	.109	.101
75F3R5A104	.10	50	C	.264	.194	.15	.114	.106
75F3R5A124	.12	50	C	.336	.246	.19	.146	.134
75F3R5A154	.15	50	C	.351	.257	.199	.152	.14
75F3R5A184	.18	50	C	.378	.277	.214	.164	.151
75F4R5A224	.22	50	D	.399	.293	.226	.173	.16
75F4R5A274	.27	50	D	.513	.376	.291	.222	.205
75F4R5A334	.33	50	D	.531	.389	.301	.23	.212
75F6R5A394	.39	50	E	.60	.44	.34	.26	.24
75F6R5A474	.47	50	E	.624	.458	.354	.27	.25
75F6R5A564	.56	50	E	.81	.594	.459	.351	.324
75F6R5A684	.68	50	E	.861	.631	.488	.373	.344
75F7R5A824	.82	50	F	1.152	.845	.653	.499	.461
75F7R5A105	1.00	50	F	1.197	.878	.678	.519	.479
75F1R1A102	.0010	100	A	.198	.145	.112	.086	.079
75F1R1A122	.0012	100	A	.198	.145	.112	.086	.079
75F1R1A152	.0015	100	A	.198	.145	.112	.086	.079
75F1R1A182	.0018	100	A	.198	.145	.112	.086	.079
75F1R1A222	.0022	100	A	.198	.145	.112	.086	.079
75F1R1A272	.0027	100	A	.198	.145	.112	.086	.079
75F1R1A332	.0033	100	A	.198	.145	.112	.086	.079
75F1R1A392	.0039	100	A	.198	.145	.112	.086	.079
75F1R1A472	.0047	100	A	.198	.145	.112	.086	.079
75F1R1A562	.0056	100	A	.198	.145	.112	.086	.079
75F1R1A682	.0068	100	A	.198	.145	.112	.086	.079
75F1R1A822	.0082	100	A	.201	.147	.114	.087	.08
75F1R1A103	.010	100	A	.201	.147	.114	.087	.08
75F1R1A123	.012	100	A	.21	.154	.119	.091	.084
75F1R1A153	.015	100	A	.21	.154	.119	.091	.084
75F1R1A183	.018	100	A	.213	.156	.121	.092	.085
75F1R1A223	.022	100	A	.213	.156	.121	.092	.085
75F1R1A273	.027	100	A	.222	.163	.126	.096	.089
75F3R1A333	.033	100	C	.222	.163	.126	.096	.089
75F3R1A393	.039	100	C	.231	.169	.131	.10	.092
75F3R1A473	.047	100	C	.231	.169	.131	.10	.092
75F3R1A563	.056	100	C	.246	.18	.139	.107	.098
75F3R1A683	.068	100	C	.249	.183	.141	.108	.10
75F3R1A823	.082	100	C	.261	.191	.148	.113	.104
75F3R1A104	.10	100	C	.264	.194	.15	.114	.106
75F4R1A124	.12	100	D	.336	.246	.19	.146	.134
75F4R1A154	.15	100	D	.351	.257	.199	.152	.14
75F6R1A184	.18	100	E	.378	.277	.214	.164	.151
75F6R1A224	.22	100	E	.399	.293	.226	.173	.16
75F6R1A274	.27	100	E	.513	.376	.291	.222	.205
75F6R1A334	.33	100	E	.531	.389	.301	.23	.212
75F7R1A394	.39	100	F	.60	.44	.34	.26	.24
75F7R1A474	.47	100	F	.624	.458	.354	.27	.25
75F7R1A564	.56	100	F	.735	.539	.417	.319	.294
75F7R1A684	.68	100	F	.762	.559	.432	.33	.305
75F1R2A102	.0010	200	A	.198	.145	.112	.086	.079
75F1R2A122	.0012	200	A	.198	.145	.112	.086	.079
75F1R2A152	.0015	200	A	.198	.145	.112	.086	.079
75F1R2A182	.0018	200	A	.198	.145	.112	.086	.079
75F1R2A222	.0022	200	A	.198	.145	.112	.086	.079
75F1R2A272	.0027	200	A	.198	.145	.112	.086	.079
75F1R2A332	.0033	200	A	.198	.145	.112	.086	.079
75F1R2A392	.0039	200	A	.198	.145	.112	.086	.079
75F1R2A472	.0047	200	A	.198	.145	.112	.086	.079
75F1R2A562	.0056	200	A	$0.198	$0.145	$0.112	$0.086	$0.079
75F1R2A682	.0068	200	A	.198	.145	.112	.086	.079
75F1R2A822	.0082	200	A	.201	.147	.114	.087	.08
75F1R2A103	.010	200	A	.201	.147	.114	.087	.08
75F1R2A123	.012	200	A	.21	.154	.119	.091	.084
75F1R2A153	.015	200	A	.21	.154	.119	.091	.084
75F1R2A183	.018	200	A	.213	.156	.121	.092	.085
75F1R2A223	.022	200	A	.213	.156	.121	.092	.085
75F1R2A273	.027	200	A	.222	.163	.126	.096	.089
75F3R2A333	.033	200	C	.222	.163	.126	.096	.089
75F3R2A393	.039	200	C	.231	.169	.131	.10	.092
75F3R2A473	.047	200	C	.231	.169	.131	.10	.092
75F3R2A563	.056	200	C	.246	.18	.139	.107	.098
75F3R2A683	.068	200	C	.249	.183	.141	.108	.10
75F3R2A823	.082	200	C	.261	.191	.148	.113	.104
75F3R2A104	.10	200	C	.264	.194	.15	.114	.106
75F4R2A124	.12	200	D	.336	.246	.19	.146	.134
75F4R2A154	.15	200	D	.351	.257	.199	.152	.14
75F6R2A184	.18	200	E	.378	.277	.214	.164	.151
75F6R2A224	.22	200	E	.399	.293	.226	.173	.16
75F6R2A274	.27	200	E	.513	.376	.291	.222	.205
75F6R2A334	.33	200	E	.531	.389	.301	.23	.212
75F7R2A394	.39	200	F	.60	.44	.34	.26	.24
75F7R2A474	.47	200	F	.624	.458	.354	.27	.25
75F7R2A564	.56	200	F	.735	.539	.417	.319	.294
75F7R2A684	.68	200	F	.762	.559	.432	.33	.305
75F1R4A102	.0010	400	A	.198	.145	.112	.086	.079
75F1R4A122	.0012	400	A	.198	.145	.112	.086	.079
75F1R4A152	.0015	400	A	.198	.145	.112	.086	.079
75F1R4A182	.0018	400	A	.198	.145	.112	.086	.079
75F1R4A222	.0022	400	A	.198	.145	.112	.086	.079
75F1R4A272	.0027	400	A	.201	.147	.114	.087	.08
75F1R4A332	.0033	400	A	.201	.147	.114	.087	.08
75F1R4A392	.0039	400	A	.21	.154	.119	.091	.084
75F1R4A472	.0047	400	A	.21	.154	.119	.091	.084
75F1R4A562	.0056	400	A	.213	.156	.121	.092	.085
75F1R4A682	.0068	400	A	.213	.156	.121	.092	.085
75F1R4A822	.0082	400	A	.222	.163	.126	.096	.089
75F3R4A103	.010	400	C	.222	.163	.126	.096	.089
75F3R4A123	.012	400	C	.231	.169	.131	.10	.092
75F3R4A153	.015	400	C	.231	.169	.131	.10	.092
75F3R4A183	.018	400	C	.246	.18	.139	.107	.098
75F3R4A223	.022	400	C	.249	.183	.141	.108	.10
75F3R4A273	.027	400	C	.261	.191	.148	.113	.104
75F4R4A333	.033	400	D	.288	.211	.163	.125	.115
75F4R4A393	.039	400	D	.336	.246	.19	.146	.134
75F4R4A473	.047	400	D	.351	.257	.199	.152	.14
75F6R4A563	.056	400	E	.378	.277	.214	.164	.151
75F6R4A683	.068	400	E	.402	.295	.228	.174	.161
75F6R4A823	.082	400	E	.507	.372	.287	.22	.203
75F6R4A104	.10	400	E	.543	.398	.308	.235	.217
75F7R4A124	.12	400	F	.60	.44	.34	.26	.24
75F7R4A154	.15	400	F	.636	.466	.36	.276	.254
75F7R4A184	.18	400	F	.732	.537	.415	.317	.293
75F7R4A224	.22	400	F	.768	.563	.435	.333	.307
75F1R6A102	.0010	600	A	.198	.145	.112	.086	.079
75F1R6A122	.0012	600	A	.201	.147	.114	.087	.08
75F1R6A152	.0015	600	A	.201	.147	.114	.087	.08
75F1R6A182	.0018	600	A	.21	.154	.119	.091	.084
75F1R6A222	.0022	600	A	.21	.154	.119	.091	.084
75F1R6A272	.0027	600	A	.213	.156	.121	.092	.085
75F1R6A332	.0033	600	A	.213	.156	.121	.092	.085
75F1R6A392	.0039	600	A	.222	.163	.126	.096	.089
75F3R6A472	.0047	600	C	.222	.163	.126	.096	.089
75F3R6A562	.0056	600	C	.231	.169	.131	.10	.092
75F3R6A682	.0068	600	C	.231	.169	.131	.10	.092
75F3R6A822	.0082	600	C	.246	.18	.139	.107	.098
75F3R6A103	.010	600	C	.249	.183	.141	.108	.10
75F3R6A123	.012	600	C	.261	.191	.148	.113	.104
75F4R6A153	.015	600	D	.288	.211	.163	.125	.115
75F4R6A183	.018	600	D	.336	.246	.19	.146	.134
75F4R6A223	.022	600	D	.351	.257	.199	.152	.14
75F6R6A273	.027	600	E	.378	.277	.214	.164	.151
75F6R6A333	.033	600	E	.402	.295	.228	.174	.161
75F6R6A393	.039	600	E	.525	.385	.298	.228	.21
75F6R6A473	.047	600	E	.543	.398	.308	.235	.217
75F7R6A563	.056	600	F	.60	.44	.34	.26	.24
75F7R6A683	.068	600	F	.636	.466	.36	.276	.254
75F7R6A823	.082	600	F	.732	.537	.415	.317	.293
75F7R6A104	.10	600	F	.768	.563	.435	.333	.307

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

"BLACK HAWK" FILM CAPACITORS ARE ALSO AVAILABLE WITH TOLERANCE OF ±20% OR ±5%. WRITE FOR COMPLETE PRICE INFORMATION

GENERAL ELECTRIC Film Type Capacitors

LECTROFILM®-B TUBULAR CAPACITORS



Very small size, high reliability, wide temperature range (−55 to +125° C). Extended foil construction with excellent resistance to humidity, vibration and shock. Wound with high-purity foil and closely controlled capacitor-grade polyester film dielectric; these compact rolls are wrapped with tape and ends sealed with epoxy resin. Lightweight, non-metallic case; welded lead construction (1⅝″ long minimum) for strong, positive-contact terminals. Withstand voltage of 250% of rated DC voltage applied for 1 second without momentary or intermittent arcing, breakdown, etc. **Tolerance:** ±10%; ±5% available on request.

80 VOLTS DC AT 85° C (40 V AT 125° C)

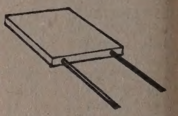
GE No.	Cap., µF	Size, Inches Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
AE12R102K	.0010	.153 x .406	$0.288	$0.211	$0.163	$0.125	$0.115
AE12R122K	.0012	.153 x .406	.288	.211	.163	.125	.115
AE12R152K	.0015	.153 x .406	.288	.211	.163	.125	.115
AE12R182K	.0018	.153 x .406	.414	.304	.235	.179	.166
AE12R222K	.0022	.153 x .406	.414	.304	.235	.179	.166
AE12R272K	.0027	.153 x .406	.414	.304	.235	.179	.166
AE12R332K	.0033	.153 x .406	.414	.304	.235	.179	.166
AE12R392K	.0039	.153 x .406	.414	.304	.235	.179	.166
AE12R472K	.0047	.153 x .406	.414	.304	.235	.179	.166
AE13R562K	.0056	.185 x .450	.414	.304	.235	.179	.166
AE13R682K	.0068	.185 x .450	.414	.304	.235	.179	.166
AE13R822K	.0082	.185 x .450	.414	.304	.235	.179	.166
AE13R103K	.010	.185 x .450	.39	.286	.221	.169	.156
AE15R123K	.012	.185 x .530	.417	.306	.236	.181	.167
AE15R153K	.015	.185 x .530	.447	.328	.253	.194	.179
AE15R183K	.018	.185 x .530	.453	.332	.257	.196	.181
AE15R223K	.022	.185 x .530	.459	.337	.26	.199	.184
AE15R273K	.027	.229 x .530	.465	.341	.264	.202	.186
AE15R333K	.033	.229 x .530	.474	.348	.269	.205	.19
AE17R393K	.039	.229 x .594	.483	.354	.274	.209	.193
AE17R473K	.047	.229 x .594	.495	.363	.281	.215	.198
AE17R563K	.056	.250 x .594	.513	.376	.291	.222	.205
AE17R683K	.068	.250 x .594	.537	.394	.304	.233	.215
AE17R823K	.082	.315 x .594	.558	.409	.316	.242	.223
AE17R104K	.10	.315 x .594	.573	.42	.325	.248	.229
AE22R124K	.12	.315 x .719	.678	.497	.384	.294	.271
AE22R154K	.15	.315 x .719	.723	.53	41	.313	.289
AE22R184K	.18	.343 x .719	.801	.587	.454	.347	.32
AE22R224K	.22	.343 x .719	.879	.645	.498	.381	.352
AE28R274K	.27	.343 x .969	.939	.689	.532	.407	.376
AE29R334K	.33	.343 x .969	.993	.728	.563	.43	.397
AE36R394K	.39	.343 x 1.22	1.053	.772	.597	.456	.421
AE36R474K	.47	.343 x 1.22	1.107	.812	.627	.48	.443

200 VOLTS DC AT 85° C (100 V AT 125° C)

GE No.	Cap., µF	Size, Inches Dia. x L.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
AE12C102K	.0010	.153 x .406	$0.288	$0.211	$0.163	$0.125	$0.115
AE12C122K	.0012	.153 x .406	.288	.211	.163	.125	.115
AE12C152K	.0015	.153 x .406	.288	.211	.163	.125	.115
AE12C182K	.0018	.185 x .406	.288	.211	.163	.125	.115
AE12C222K	.0022	.185 x .406	.288	.211	.163	.125	.115
AE12C272K	.0027	.185 x .406	.288	.211	.163	.125	.115
AE12C332K	.0033	.185 x .406	.288	.211	.163	.125	.115
AE13C392K	.0039	.185 x .450	.291	.213	.165	.126	.116
AE13C472K	.0047	.185 x .450	.294	.216	.167	.127	.118
AE13C562K	.0056	.185 x .450	.297	.218	.168	.129	.119
AE13C682K	.0068	.185 x .450	.30	.22	.17	.13	.12
AE13C822K	.0082	.185 x .450	.315	.231	.179	.137	.126
AE13C103K	.010	.185 x .450	.321	.235	.182	.139	.128
AE14C123K	.012	.229 x .530	.327	.24	.185	.142	.131
AE14C153K	.015	.229 x .530	.33	.242	.187	.143	.132
AE17C183K	.018	.229 x .594	.336	.246	.19	.146	.134
AE17C223K	.022	.229 x .594	.345	.253	.196	.15	.138
AE17C273K	.027	.250 x .594	.363	.266	.206	.157	.145
AE17C333K	.033	.250 x .594	.384	.282	.218	.166	.154
AE17C393K	.039	.315 x .594	.399	.293	.226	.173	.16
AE17C473K	.047	.315 x .594	.42	.308	.238	.182	.168
AE22C563K	.056	.315 x .719	.444	.326	.252	.192	.178
AE22C683K	.068	.315 x .719	.465	.341	.264	.202	.186
AE22C823K	.082	.328 x .719	.489	.359	.277	.212	.196
AE22C104K	.10	.328 x .719	.513	.376	.291	.222	.205
AE28C124K	.12	.343 x .969	.537	.394	.304	.233	.215
AE28C154K	.15	.343 x .969	.612	.449	.347	.265	.245
AE36C184K	.18	.343 x 1.22	.648	.475	.367	.281	.259
AE36C224K	.22	.343 x 1.22	.687	.504	.389	.298	.275

WRITE FOR PRICES ON ±5% TOLERANCE LECTROFILM®-B TUBULAR CAPACITORS

MICRO-FLAT LECTROFILM®-B CAPACITORS

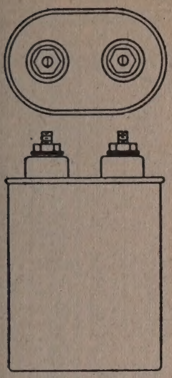


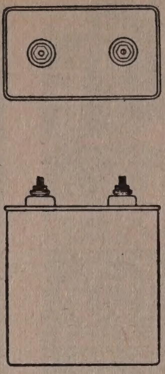
Lectrofilm®-B capacitors ideal for transistorized printed circuit board applications where high density packaging is required. Made of high-purity aluminum foil with capacitor-grade polyester film dielectric, housed in preformed epoxy case with welded radial leads precisely spaced in 0.100″ increments. Extensively used in instrumentation, communications, computers and other applications where small size is needed. Temperature range, −55° to +125° C. Rated 50 volts DC at 85° C; 25 volts DC at 125° C. Insulation resistance, 10,000 megohm-microfarads at 25° C, not to exceed 100,000 megohms; 1000 megohm-microfarads at 85° C, not to exceed 10,000 megohms. **Tolerance:** ±10% or ±5%. Also available with tolerance of ±20% or ±3%; write for complete pricing information.

Cap., µF	Size, Inches W. x H. x D.	Tolerance ±10% GE Type Number	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999	Tolerance ±5% GE Type Number	Net Each, Lots of 1-24	25-49	50-99	100-499	500-999
.0010	.375 x .265 x .105	65F10AA102	$0.675	$0.495	$0.383	$0.293	$0.27	65F10AC102	$0.909	$0.667	$0.515	$0.394	$0.364
.0012	.375 x .265 x .105	65F10AA122	.69	.506	.391	.299	.276	65F10AC122	.933	.684	.529	.404	.373
.0015	.375 x .265 x .105	65F10AA152	.69	.506	.391	.299	.276	65F10AC152	.933	.684	.529	.404	.373
.0018	.375 x .265 x .105	65F10AA182	.708	.519	.401	.307	.283	65F10AC182	.957	.702	.542	.415	.383
.0022	.375 x .265 x .105	65F10AA222	.708	.519	.401	.307	.283	65F10AC222	.957	.702	.542	.415	.383
.0027	.375 x .265 x .105	65F10AA272	.72	.528	.408	.312	.288	65F10AC272	.972	.713	.551	.421	.389
.0033	.375 x .265 x .105	65F10AA332	.72	.528	.408	.312	.288	65F10AC332	.972	.713	.551	.421	.389
.0039	.375 x .265 x .105	65F10AA392	.744	.546	.422	.322	.298	65F10AC392	1.008	.739	.571	.437	.403
.0047	.375 x .265 x .105	65F10AA472	.744	.546	.422	.322	.298	65F10AC472	1.008	.739	.571	.437	.403
.0056	.375 x .265 x .105	65F10AA562	.756	.554	.428	.328	.302	65F10AC562	1.02	.748	.578	.442	.408
.0068	.375 x .265 x .105	65F10AA682	.756	.554	.428	.328	.302	65F10AC682	1.02	.748	.578	.442	.408
.0082	.375 x .265 x .105	65F10AA822	.777	.57	.44	.337	.311	65F10AC822	1.047	.768	.593	.454	.419
.010	.375 x .265 x .105	65F10AA103	.777	.57	.44	.337	.311	65F10AC103	1.047	.768	.593	.454	.419
.012	.375 x .350 x .135	65F11AA123	.789	.579	.447	.342	.316	65F11AC123	1.065	.781	.604	.462	.426
.015	.375 x .350 x .135	65F11AA153	.789	.579	.447	.342	.316	65F11AC153	1.065	.781	.604	.462	.426
.018	.375 x .350 x .135	65F11AA183	.81	.594	.459	.351	.324	65F11AC183	1.092	.801	.619	.473	.437
.022	.375 x .350 x .135	65F11AA223	.81	.594	.459	.351	.324	65F11AC223	1.092	.801	.619	.473	.437
.027	.375 x .350 x .135	65F11AA273	.822	.603	.466	.356	.329	65F11AC273	1.113	.816	.631	.482	.445
.033	.375 x .350 x .135	65F11AA333	.822	.603	.466	.356	.329	65F11AC333	1.113	.816	.631	.482	.445
.039	.475 x .375 x .175	65F12AA393	.843	.618	.478	.365	.337	65F12AC393	1.14	.836	.646	.494	.456
.047	.475 x .375 x .175	65F12AA473	.843	.618	.478	.365	.337	65F12AC473	1.14	.836	.646	.494	.456
.056	.475 x .375 x .175	65F12AA563	.873	.64	.495	.378	.349	65F12AC563	1.179	.865	.668	.511	.472
.068	.475 x .375 x .175	65F12AA683	.873	.64	.495	.378	.349	65F12AC683	1.179	.865	.668	.511	.472
.082	.475 x .465 x .175	65F13AA823	.909	.667	.515	.394	.364	65F13AC823	1.224	.898	.694	.53	.49
.10	.475 x .465 x .175	65F13AA104	.909	.667	.515	.394	.364	65F13AC104	1.224	.898	.694	.53	.49
.12	.585 x .610 x .205	65F15AA124	1.011	.741	.573	.438	.404	65F15AC124	1.365	1.001	.774	.592	.546
.15	.585 x .610 x .205	65F15AA154	1.011	.741	.573	.438	.404	65F15AC154	1.365	1.001	.774	.592	.546
.18	.585 x .610 x .205	65F15AA184	1.011	.741	.573	.438	.404	65F15AC184	1.365	1.001	.774	.592	.546
.22	.585 x .610 x .205	65F15AA224	1.011	.741	.573	.438	.404	65F15AC224	1.365	1.001	.774	.592	.546
.27	.685 x .670 x .205	65F16AA274	1.116	.818	.632	.484	.446	65F16AC274	1.506	1.104	.853	.653	.602
.33	.685 x .670 x .205	65F16AA334	1.116	.818	.632	.484	.446	65F16AC334	1.506	1.104	.853	.653	.602
.39	.885 x .705 x .205	65F17AA394	1.245	.913	.706	.54	.498	65F17AC394	1.68	1.232	.952	.728	.672
.47	.885 x .705 x .205	65F17AA474	1.245	.913	.706	.54	.498	65F17AC474	1.68	1.232	.952	.728	.672
.56	.885 x .725 x .260	65F18AA564	1.449	1.063	.821	.628	.58	65F18AC564	1.956	1.434	1.108	.848	.782
.68	.885 x .725 x .260	65F18AA684	1.449	1.063	.821	.628	.58	65F18AC684	1.956	1.434	1.108	.848	.782
.82	.985 x .890 x .260	65F19AA824	1.821	1.335	1.032	.789	.728	65F19AC824	2.457	1.802	1.392	1.065	.983
1.0	.985 x .890 x .260	65F19AA105	1.821	1.335	1.032	.789	.728	65F19AC105	2.457	1.802	1.392	1.065	.983
1.2	1.785 x .875 x .305	65F20AA125	2.529	1.855	1.433	1.096	1.012	65F20AC125	3.399	2.493	1.926	1.473	1.36
1.5	1.785 x .875 x .305	65F20AA155	2.529	1.855	1.433	1.096	1.012	65F20AC155	3.399	2.493	1.926	1.473	1.36

LARGER QUANTITY PRICES AVAILABLE ON REQUEST

GENERAL ELECTRIC SCR COMMUTATION CAPACITORS


Oval Case


Rectangular Case

High energy capacitors for commutating (turning off) silicon controlled rectifiers in chopper or inverter circuits, where high repetition rates and large peak currents are present. Feature heavy-duty internal connections to carry high currents, extended foil construction for low inductance and minimum equivalent series resistance. Exposed foil design assures lower losses and superior performance in applications where high power and frequency are encountered. Seamless cases of deep-drawn terneplate (lead-coated) steel, or impact extruded aluminum. Cases are finished with high-corrosion-resistant gray paint for increased case emissivity and decreased dielectric temperature rise. Porcelain insulated pillar bushings with 12-24 threaded studs, nuts, washers and lock washers for easy, secure connections. Bushing and terminal assembly is welded for better connection, and to prevent radio interference. Braided cable leads carry currents up to 50 amps. Broad undercover insulation gives ample internal electrical creep distance, minimizing possibility of grounding. Available in choice of three dielectrics: paper with 1436 Pyranol® impregnant for low cost; metallized paper with castor oil impregnant for highest density; polycarbonate film dielectric with mineral oil impregnant for lowest loss.

Selection of Proper Value: The correct capacitor for any application can be selected if capacitance, voltage, discharge time and ambient temperatures are known. First, calculate current peak for each current pulse using the discharge time and maximum voltage swing. Convert these peak values to I_{rms}. Select the correct capacitor in terms of μF and voltage needed. Determine maximum I_{rms} of this capacitor with a 50 μsec pulse width at known ambient temperature (never over 50 amps). If max. I_{rms} is less than needed, select a capacitor with higher voltage rating.

PAPER DIELECTRIC

GE Number	Cap., μF	Peak Volts*	Max. rms VAC†	Max. rms Amps at Ambient Temp.‡			Case	Size, Inches W. x D. x H.§	Term. Spacing	Net Each, Lots of				
				60° C	70° C	80° C				1-9	10-24	25-49	50-99	100-999
28F5101FC	3	200	200	8.9	6.6	3.8	Oval	2.16 x 1.31 x 2.06	0.81″	$ 8.71	$ 5.48	$ 3.98	$ 3.12	$ 2.69
28F5102FC	5	200	200	12.8	9.5	5.5	Oval	2.16 x 1.31 x 2.56	0.81″	9.55	6.01	4.36	3.41	2.94
28F5103FC	10	200	200	22.1	16.3	9.4	Oval	2.16 x 1.31 x 3.81	0.81″	11.27	7.08	5.13	4.02	3.46
28F5104FC	15	200	200	30.1	22.1	12.8	Oval	2.16 x 1.31 x 4.69	0.81″	13.19	8.28	6.00	4.69	4.03
28F5105FC	20	200	200	37.7	27.8	16.1	Oval	2.69 x 1.56 x 4.50	0.81″	14.95	9.38	6.79	5.30	4.56
28F5106FC	30	200	200	50.0	38.9	22.4	Oval	2.91 x 1.91 x 5.25	1.38″	20.47	12.83	9.27	7.24	6.22
28F5107FC	40	200	200	50.0	50.0	29.4	Oval	2.91 x 1.91 x 6.75	1.38″	24.11	15.11	10.91	8.51	7.31
28F5108FC	50	200	200	50.0	50.0	34.6	Oval	3.66 x 1.97 x 6.25	1.38″	27.19	17.04	12.30	9.59	8.23
28F5110FC	2	400	300	7.3	5.4	3.1	Oval	2.16 x 1.31 x 2.06	0.81″	8.63	5.43	3.94	3.09	2.67
28F5111FC	3	400	300	9.4	7.0	4.0	Oval	2.16 x 1.31 x 2.31	0.81″	9.27	5.83	4.23	3.32	2.86
28F5112FC	5	400	300	14.0	10.3	6.0	Oval	2.16 x 1.31 x 3.06	0.81″	10.71	6.73	4.88	3.82	3.29
28F5113FC	10	400	300	26.6	19.7	11.4	Oval	2.69 x 1.56 x 4.50	0.81″	14.55	9.13	6.61	5.16	4.44
28F5114FC	15	400	300	35.4	26.2	15.1	Oval	2.91 x 1.91 x 4.75	1.38″	17.79	11.16	8.07	6.30	5.41
28F5115FC	20	400	300	46.9	34.6	20.0	Oval	2.91 x 1.91 x 6.25	1.38″	20.39	12.78	9.24	7.21	6.19
28F5116FC	30	400	300	50.0	48.2	27.8	Oval	3.66 x 1.97 x 6.75	1.38″	27.19	17.04	12.30	9.59	8.23
28F5117FC	40	400	300	50.0	50.0	35.0	Oval	3.66 x 1.97 x 8.00	1.38″	33.99	21.28	15.36	11.97	10.27
28F5118FC	50	400	300	50.0	50.0	38.1	Rect.	4.56 x 2.84 x 5.88	2.00″	45.76	28.60	20.59	16.02	13.73
28F5120FC	2	600	400	7.7	5.7	3.3	Oval	2.16 x 1.31 x 2.31	0.81″	9.03	5.68	4.12	3.23	2.79
28F5121FC	3	600	400	10.4	7.7	4.4	Oval	2.16 x 1.31 x 2.81	0.81″	9.59	6.03	4.38	3.43	2.95
28F5122FC	5	600	400	15.6	11.5	6.7	Oval	2.16 x 1.31 x 3.81	0.81″	11.35	7.13	5.17	4.04	3.48
28F5123FC	10	600	400	27.3	20.2	11.7	Oval	2.91 x 1.91 x 4.25	1.38″	15.47	9.71	7.02	5.49	4.72
28F5124FC	15	600	400	39.0	28.8	16.6	Oval	2.91 x 1.91 x 5.75	1.38″	18.67	11.71	8.46	6.61	5.68
28F5125FC	20	600	400	49.2	36.3	21.0	Oval	2.91 x 1.91 x 5.75	1.38″	22.63	14.18	10.24	7.99	6.87
28F5126FC	25	600	400	50.0	44.0	25.4	Oval	3.66 x 1.97 x 6.75	1.38″	26.71	16.74	12.08	9.42	8.09
28F5127FC	30	600	400	50.0	50.0	30.3	Oval	3.66 x 1.97 x 8.00	1.38″	30.79	19.28	13.92	10.85	9.31
28F5128FC	40	600	400	50.0	50.0	33.7	Rect.	4.56 x 2.84 x 5.88	2.00″	44.32	27.70	19.94	15.51	13.30
28F5129FC	50	600	400	50.0	50.0	40.8	Rect.	4.56 x 2.84 x 6.75	2.00″	50.64	31.65	22.79	17.72	15.19
28F5131FC	1	1000	500	5.1	3.8	2.2	Oval	2.16 x 1.31 x 2.06	0.81″	7.99	5.03	3.66	2.87	2.47
28F5132FC	2	1000	500	8.9	6.5	3.8	Oval	2.16 x 1.31 x 3.06	0.81″	9.27	5.83	4.23	3.32	2.86
28F5133FC	3	1000	500	12.1	8.9	5.2	Oval	2.16 x 1.31 x 3.81	0.81″	9.91	6.23	4.52	3.54	3.05
28F5134FC	5	1000	500	18.3	13.5	7.8	Oval	2.69 x 1.56 x 4.25	0.81″	12.47	7.83	5.67	4.44	3.82
28F5135FC	10	1000	500	33.2	24.5	14.1	Oval	2.91 x 1.91 x 6.25	1.38″	17.19	10.79	7.80	6.09	5.23
28F5136FC	15	1000	500	45.0	33.0	19.0	Oval	3.66 x 1.97 x 6.75	1.38″	20.15	12.63	9.13	7.12	6.12
28F5137FC	20	1000	500	50.0	39.0	22.5	Rect.	4.56 x 2.84 x 5.18	2.00″	32.39	20.28	14.64	11.41	9.79
28F5141FC	0.5	1500	700	3.6	2.7	1.5	Oval	2.16 x 1.31 x 2.06	0.81″	7.87	4.96	3.60	2.83	2.44
28F5142FC	1	1500	700	6.3	4.6	2.7	Oval	2.16 x 1.31 x 3.06	0.81″	9.35	5.88	4.27	3.34	2.88
28F5143FC	2	1500	700	11.0	8.2	4.7	Oval	2.69 x 1.56 x 3.88	0.81″	11.15	7.01	5.08	3.97	3.42
28F5144FC	3	1500	700	15.0	11.1	6.4	Oval	2.91 x 1.91 x 4.25	1.38″	13.11	8.23	5.96	4.66	4.01
28F5145FC	5	1500	700	23.5	17.3	10.0	Oval	2.91 x 1.91 x 6.25	1.38″	15.95	10.01	7.24	5.65	4.86
28F5146FC	10	1500	700	37.3	27.6	15.9	Rect.	4.56 x 2.84 x 5.18	2.00″	30.75	19.26	13.90	10.83	9.30
28F5151FC	0.25	2000	800	2.6	1.9	1.1	Oval	2.16 x 1.31 x 2.06	0.81″	7.75	4.88	3.55	2.78	2.40
28F5152FC	0.50	2000	800	4.0	3.0	1.7	Oval	2.16 x 1.31 x 2.56	0.81″	8.15	5.13	3.73	2.92	2.52
28F5153FC	1	2000	800	6.6	4.9	2.8	Oval	2.16 x 1.31 x 3.44	0.81″	9.47	5.96	4.32	3.39	2.92
28F5154FC	2	2000	800	11.9	8.8	5.1	Oval	2.69 x 1.56 x 4.50	0.81″	11.59	7.28	5.28	4.13	3.55
28F5155FC	3	2000	800	15.8	11.7	6.8	Oval	2.91 x 1.91 x 4.75	1.38″	14.19	8.91	6.45	5.04	4.33
28F5156FC	5	2000	800	25.6	18.9	10.9	Oval	3.66 x 1.97 x 6.25	1.38″	17.87	11.21	8.10	6.33	5.44
28F5158FC	10	2000	800	41.2	30.4	17.6	Rect.	4.56 x 2.84 x 6.25	2.00″	33.51	20.98	15.14	11.80	10.13

POLYCARBONATE DIELECTRIC

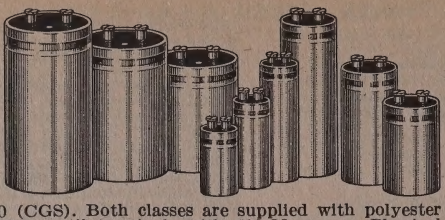
28F1245FC	1	600	330	21.0	15.5	9.0	Oval	2.16 x 1.31 x 2.06	0.81″	$11.23	$ 7.06	$ 5.11	$ 4.00	$ 3.45
28F1246FC	2	600	330	34.0	25.3	14.6	Oval	2.16 x 1.31 x 2.81	0.81″	13.63	8.56	6.19	4.84	4.17
28F1247FC	3	600	330	45.6	33.8	19.5	Oval	2.16 x 1.31 x 3.44	0.81″	16.35	10.26	7.42	5.79	4.98
28F1248FC	5	600	330	50.0	50.0	30.6	Oval	2.69 x 1.56 x 3.88	0.81″	21.95	13.76	9.94	7.75	6.66
28F1249FC	10	600	330	50.0	50.0	50.0	Oval	2.91 x 1.91 x 5.25	1.38″	35.47	22.21	16.02	12.49	10.72
28F1202FC	20	600	330	50.0	50.0	50.0	Oval	3.66 x 1.97 x 6.00	1.38″	60.24	37.65	27.11	21.08	18.07

METALLIZED PAPER DIELECTRIC

28F1101FC	25	200	120	12.0	9.7	4.7	Oval	2.69 x 1.56 x 2.12	0.81″	$21.71	$13.61	$ 9.83	$ 7.67	$ 6.59
28F1102FC	50	200	120	12.0	12.0	7.7	Oval	2.69 x 1.56 x 2.88	0.81″	27.87	17.46	12.60	9.83	8.44
28F1103FC	100	200	120	20.0	20.0	13.0	Oval	3.66 x 1.97 x 3.12	1.38″	45.40	28.38	20.43	15.89	13.62
28F1104FC	125	200	120	20.0	20.0	16.3	Oval	3.66 x 1.97 x 3.88	1.38″	55.36	34.60	24.91	19.38	16.61
28F1117FC	150	200	120	20.0	20.0	20.0	Oval	3.66 x 1.97 x 4.25	1.38″	63.16	39.48	28.42	22.11	18.95

*Max. voltage swing. †At 60 Hz. ‡Based on 50 μsec pulse width. §Plus terminals, 0.84″ high max. (rectangular case, 0.726″ high max.).

MALLORY Computer Grade Capacitors



Two classes of Computer Grade Capacitors are available: CGS for 65° C operation and CG for 85° C operation. Operating life of both types should exceed 10 years when used within stated parameters. Derating voltage and/or lowering operating temperature will extend life by a large factor. **Temp. Range:** −20° C to +65° (CGS), +85° (CG). **Tolerance:** 0–150 WVDC, −10 +75% (U); 151 WVDC up, −10 +50% (T). For complete specifications, ask for Form 4-64 (CG), 4-80 (CGS). Both classes are supplied with polyester film insulating sleeves and have "High-post" terminals with #10-32 screws. Physical mounting of these capacitors is usually done with Mallory VR clamps. The clamps, however, are not included with the capacitors. Order separately.

85° C COMPUTER GRADE

Mallory No. CG-	Cap., μF	WV DC	Size *	Net Each
1052U3B1	10,500	3	B	$ 2.53
1752U3H1	17,500	3	H	3.33
263U003R3C•	26,000	3	R3C	2.32
363U3D1	36,000	3	D	4.76
573U003V3C•	57,000	3	V3C	3.42
753U3F1	75,000	3	F	7.62
1153U3G1	115,000	3	G	9.32
852U5B1	8,500	5	B	2.92
1252U5C1	12,500	5	C	3.54
143U5H1	14,000	5	H	4.01
1852U5K1	18,500	5	K	4.33
453U5E1	45,000	5	E	6.53
15U5G1	100,000	5	G	10.14
322U10A1	3,200	10	A	1.89
63U10B1	6,000	10	B	2.55
752U010R2C•	7,500	10	R2C	1.90
822U10C1	8,200	10	C	3.06
14U10H1	10,000	10	H	3.40
1352U10K1	13,500	10	K	4.01
143U10J1	14,000	10	J	4.16
143U010R3C•	14,000	10	R3C	2.32
183U10D1	18,000	10	D	4.95
213U010R4C•	21,000	10	R4C	2.72
243U010U3C•	24,000	10	U3C	2.71
34U10E1	30,000	10	E	7.13
313U010V3C•	31,000	10	V3C	3.42
4352U10F1	43,500	10	F	8.91
463U010V4C•	46,000	10	V4C	4.25
683U10G1	68,000	10	G	10.43
743U010W4C•	74,000	10	W4C	5.96
114U010X4C•	110,000	10	X4C	7.03
164U010X5L•	160,000	10	X5L	9.36
252U15A1	2,500	15	A	2.12
452U15B1	4,500	15	B	2.80
642U15C1	6,400	15	C	2.90
652U015R2C•	6,500	15	R2C	1.90
83U15H1	8,000	15	H	3.31
1052U15K1	10,500	15	K	3.65
113U15J1	11,000	15	J	3.78
123U015R3C•	12,000	15	R3C	2.32
143U15D1	14,000	15	D	4.82
183U015R4C	18,000	15	R4C	2.72
213U015U3C•	21,000	15	U3C	2.71
273U015V3C•	27,000	15	V3C	3.42
343U15F1	34,000	15	F	7.67
403U015V4C•	40.000	15	V4C	4.25
533U15G1	53,000	15	G	10.04
953U015X4C•	95,000	15	X4C	7.03
144U015X5L•	140,000	15	X5L	9.36
152U25A1	1,500	25	A	1.85
282U25B1	2,800	25	B	2.28
332U025R2C•	3,300	25	R2C	1.90
382U25C1	3,800	25	C	2.80
452U25H1	4,500	25	H	2.99
63U25K1	6,000	25	K	3.48
632U025R3C•	6,300	25	R3C	2.32
852U25D1	8,500	25	D	4.21
922U025R4C•	9,200	25	R4C	2.72
103U025U3C•	10,000	25	U3C	2.71
133U025V3C•	13,000	25	V3C	3.42
1352U25E1	13,500	25	E	6.46
24U25F1	20,000	25	F	7.07
203U025V4C•	20,000	25	V4C	4.25
3152U25G1	31,500	25	G	9.48
323U025W4C•	32,000	25	W4C	5.96
483U025X4C•	48,000	25	X4C	7.03
713U025X5L•	71,000	25	X5L	9.36
112U35A1	1,100	35	A	2.04
212U35B1	2,100	35	B	2.33
232U035R2C•	2,300	35	R2C	1.90
312U35C1	3,100	35	C	3.28
362U35H1	3,600	35	H	3.46
432U035R3C•	4,300	35	R3C	2.32
472U35K1	4,700	35	K	3.73
532U35J1	5,300	35	J	3.92
632U035R4C•	6,300	35	R4C	2.72
692U35D1	6,900	35	D	5.15
952U035V3C•	9,500	35	V3C	3.42
113U35E1	11,000	35	E	6.93
113U035U4C•	11,000	35	U4C	3.53
143U035V4C•	14,000	35	V4C	4.25
1652U35F1	16,500	35	F	7.73
223U035W4C•	22,000	35	W4C	5.96
243U35G1	24,000	35	G	8.37
333U035X4C•	33,000	35	X4C	$ 7.03
493U035X5L•	49,000	35	X5L	9.36
82U50A1	800	50	A	1.87
152U50B1	1,500	50	B	2.21
152U050R2C•	1,500	50	R2C	1.90
23U50C1	2,000	50	C	2.47
252U50H1	2,500	50	H	2.72
292U050R3C•	2,900	50	R3C	2.32
332U50K1	3,300	50	K	3.51
352U50J1	3,500	50	J	3.55
432U050R4C•	4,300	50	R4C	2.72
452U50D1	4,500	50	D	3.74
502U050U3C•	5,000	50	U3C	2.71
652U050V3C•	6,500	50	V3C	3.42
732U50E1	7,300	50	E	5.75
742U050U4C•	7,400	50	U4C	3.53
952U050V4C•	9,500	50	V4C	4.25
14U50F1	10,000	50	F	7.23
153U050W4C•	15,000	50	W4C	5.96
1652U50G1	16,500	50	G	9.93
223U050X4C•	22,000	50	X4C	7.03
333U050X5L•	33,000	50	X5L	9.36
62U75A1	600	75	A	2.17
801U075R2C•	800	75	R2C	1.90
13U75B1	1,000	75	B	2.53
152U75C1	1,500	75	C	3.06
152U075R3C•	1,500	75	R3C	2.32
23U75H1	2,000	75	H	3.33
222U075R4C•	2,200	75	R4C	2.72
252U75K1	2,500	75	K	3.99
262U75J1	2,600	75	J	4.05
262U075U3C•	2,600	75	U3C	2.71
332U075V3C•	3,300	75	V3C	3.35
3451U75D1	3,450	75	D	4.35
382U075U4C•	3,800	75	U4C	3.53
492U075V4C•	4,900	75	V4C	4.25
552U75E1	5,500	75	E	6.91
792U075W4C•	7,900	75	W4C	5.96
822U75F1	8,200	75	F	7.83
113U075X4C•	11,000	75	X4C	7.03
1252U75G1	12,500	75	G	10.20
173U075X5L•	17,000	75	X5L	9.36
42U100A1	400	100	A	2.17
751U100B1	750	100	B	2.57
771U100R3C•	770	100	R3C	2.32
13U100C1	1,000	100	C	2.94
112U100R4C•	1,100	100	R4C	2.72
132U100H1	1,300	100	H	3.22
172U100J1	1,700	100	J	3.57
172U100V3C•	1,700	100	V3C	3.42
192U100U4C•	1,900	100	U4C	3.53
2251U100D1	2,250	100	D	4.44
252U100V4C•	2,500	100	V4C	4.25
362U100E1	3,600	100	E	6.51
402U100W4C•	4,000	100	W4C	5.96
532U100F1	5,300	100	F	7.27
592U100X4C•	5,900	100	X4C	7.03
832U100G1	8,300	100	G	10.45
872U100X5L•	8,700	100	X5L	9.36
2750U150A1	275	150	A	1.76
52U150B1	500	150	B	2.21
72U150C1	700	150	C	2.59
8750U150H1	875	150	H	2.92
112U150K1	1,100	150	K	3.38
1151U150J1	1,150	150	J	3.42
1551U150D1	1,550	150	D	4.33
252U150E1	2,500	150	E	6.39
362U150F1	3,600	150	F	7.64
562U150G1	5,600	150	G	10.65
181T200A1	180	200	A	2.18
341T200B1	340	200	B	2.61
451T200C1	450	200	C	2.78
551T200H1	550	200	H	3.08
751T200K1	750	200	K	3.56
82T200J1	800	200	J	3.71
13T200D1	1,000	200	D	4.87
1651T200E1	1,650	200	E	5.78
2451T200F1	2,450	200	F	7.37
382T200G1	3,800	200	G	13.24
141T250A1	140	250	A	2.60
2750T250B1	275	250	B	2.97
3750T250C1	375	250	C	3.22
451T250H1	450	250	H	3.49

•New item features higher capacitance, smaller case size. *Case sizes on following page.

85°C COMPUTER GRADE (CONT.)

Mallory No. CG-	Cap., μF	WV DC	Size *	Net Each
62T250K1	600	250	K	$ 3.94
82T250D1	800	250	D	5.09
132T250E1	1,300	250	E	6.80
192T250F1	1,900	250	F	8.20
33T250G1	3,000	250	G	10.97
2250T300B1	225	300	B	2.87
3250T300C1	325	300	C	3.07
5250T300K1	525	300	K	3.53
72T300D1	700	300	D	5.11
1651T300F1	1,650	300	F	9.13
262T300G1	2,600	300	G	11.48
12T350A1	100	350	A	2.62
181T350B1	180	350	B	2.94
251T350C1	250	350	C	3.19
32T350H1	300	350	H	3.40
42T350K1	400	350	K	3.85
4250T350J1	425	350	J	4.10
551T350D1	550	350	D	5.50
92T350E1	900	350	E	6.97
132T350F1	1,300	350	F	9.27
23T350G1	2,000	350	G	11.48
550T400A1	55	400	A	2.64
151T400C1	150	400	C	3.19
241T400K1	240	400	K	3.71
3250T400D1	325	400	D	4.10
531T400E1	530	400	E	5.44
41T450A1	40	450	A	1.94
111T450C1	110	450	C	2.94
141T450H1	140	450	H	3.24
181T450K1	180	450	K	3.33
241T450D1	240	450	D	3.69

65° C COMPUTER GRADE

Mallory No. CGS-	Cap., μF	WV DC	Size *	Net Each
722U010BB1	7,200	10	BB	$ 2.60
123U010R2C•	12,000	10	R2C	2.50
133U010BD1	13,000	10	BD	3.07
203U010BF1	20,000	10	BF	3.69
223U01R3C•	22,000	10	R3C	3.02
303U010DD1	30,000	10	DD	4.77
333U010R4C•	33,000	10	R4C	3.65
443U010DF1	44,000	10	DF	5.83
663U010DI1	66,000	10	DI	7.97
763U010V4C•	76,000	10	V4C	5.88
104U010FF1	100,000	10	FF	11.14
134U010FH1	130,000	10	FH	13.06
164U010FJ1	160,000	10	FJ	14.96
284U010X5R•	280,000	10	X5R	15.70
552U015BB1	5,500	15	BB	2.44
892U015R2C•	8,900	15	R2C	2.50
103U015BD1	10,000	15	BD	3.12
153U015BF1	15,000	15	BF	3.78
173U015R3C•	17,000	15	R3C	3.02
233U015DD1	23,000	15	DD	4.87
253U015R4C•	25,000	15	R4C	3.65
343U015DF1	34,000	15	DF	6.03
383U015V3C•	38,000	15	V3C	4.06
503U015DI1	50,000	15	DI	7.97
563U015V4C•	56,000	15	V4C	5.88
803U015FF1	80,000	15	FF	10.69
833U015V5L•	83,000	15	V5L	7.81
104U015FH1	100,000	15	FH	13.81
124U015FJ1	120,000	15	FJ	15.28
134U015X4C•	130,000	15	X4C	11.07
174U015X5C•	170,000	15	X5C	12.78
214U015X5R•	210,000	15	X5R	15.70
302U025BB1	3,000	25	BB	2.55
472U025R2C•	4,700	25	R2C	2.50
562U025BD1	5,600	25	BD	3.03
822U025BF1	8,200	25	BF	3.49
892U025R3C•	8,900	25	R3C	3.02
123U025DD1	12,000	25	DD	4.33
133U025R4C•	13,000	25	R4C	3.65
183U025DF1	18,000	25	DF	5.61
203U025V3C•	20,000	25	V3C	4.06
273U025DI1	27,000	25	DI	7.43
293U025V4C•	29,000	25	V4C	5.88
433U025FF1	43,000	25	FF	10.10
433U025V5L•	43,000	25	V5L	7.81
573U025FH1	57,000	25	FH	13.08
673U025FJ1	67,000	25	FJ	14.54
703U025X4C•	70,000	25	X4C	11.07
923U025X5C•	92,000	25	X5C	12.78
114U025X5R•	110,000	25	X5R	15.70
222U040BB1	2,200	40	BB	2.70
272U040R2C•	2,700	40	R2C	2.50
422U040BD1	4,200	40	BD	3.09
512U040R3C•	5,100	40	R3C	3.02
622U040BF1	6,200	40	BF	3.89
752U040R4C•	7,500	40	R4C	3.65
932U040DD1	9,300	40	DD	4.97
113U040V3C•	11,000	40	V3C	4.06
133U040DF1	13,000	40	DF	6.06
173U040V4C	17,000	40	V4C	5.88
203U040DI1	20,000	40	DI	8.05
323U040FF1	32,000	40	FF	11.58
403U040X4C•	40,000	40	X4C	11.07
433U040FH1	43,000	40	FH	14.48

65° C capacitors cont'd on following page.

MALLORY Computer Grade Capacitors

55°C COMPUTER GRADE (CONT.)

Mallory No. CGS-	Cap., μF	WV DC	Size *	Net Each
503U040FJ1	50,000	40	FJ	$16.34
533U040X5C•	53,000	40	X5C	12.78
633U040X5R•	63,000	40	X5R	15.70
162U050BB1	1,600	50	BB	2.60
222U050R2C•	2,200	50	R2C	2.50
292U050BD1	2,900	50	BD	3.19
412U050R3C•	4,100	50	R3C	3.02
432U050BF1	4,300	50	BF	3.78
612U050R4C•	6,100	50	R4C	3.65
652U050DD1	6,500	50	DD	4.86
962U050DF1	9,600	50	DF	6.03
133U050V4C•	13,000	50	4VC	5.88
143U050DI1	14,000	50	DI	7.99
203U050V5L•	20,000	50	V5L	7.81
223U050FF1	22,000	50	FF	10.88
303U050FH1	30,000	50	FH	13.88
333U050X4C•	33,000	50	X4C	11.07
353U050FJ1	35,000	50	FJ	15.58
433U050X5C•	43,000	50	X5C	12.78
513U050X5R•	51,000	50	X5R	15.70
821U075BB1	820	75	BB	2.55
112U075R2C•	1,100	75	R2C	2.50
152U075BD1	1,500	75	BD	2.95
212U075R3C•	2,100	75	R3C	3.02
232U075BF1	2,300	75	BF	3.45
312U075R4C•	3,100	75	R4C	3.65
342U075DD1	3,400	75	DD	4.39
482U075V3C•	4,800	75	V3C	4.06
502U075DF1	5,000	75	DF	5.34
712U075V4C•	7,100	75	V4C	5.88
752U075DI1	7,500	75	DI	9.15
123U075FF1	12,000	75	FF	10.03
173U075X4C•	17,000	75	X4C	11.07
193U075FJ1	19,000	75	FJ	13.88
263U075X5R•	26,000	75	X5R	15.70
122U100BD1	1,200	100	BD	3.40
182U100BF1	1,800	100	BF	4.17
272U100DD1	2,700	100	DD	5.31
402U100DF1	4,000	100	DF	6.89
592U100DI1	5,900	100	DI	9.19
932U100FF1	9,300	100	FF	13.42
123U100FH1	12,000	100	FH	16.48
153U100FJ1	15,000	100	FJ	20.18
401U150BB1	400	150	BB	2.72
721U150BD1	720	150	BD	3.19
112U150BF1	1,100	150	BF	3.95
162U150DD1	1,600	150	DD	4.95
252U150DF1	2,500	150	DF	6.39
352U150DI1	3,500	150	DI	8.29
552U150FF1	5,500	150	FF	11.58
742U150FH1	7,400	150	FH	14.74
872U150FJ1	8,700	150	FJ	16.88
201T250BB1	200	250	BB	2.49
381T250BD1	380	250	BD	3.00
551T250BF1	550	250	BF	3.49
851T250DD1	850	250	DD	4.39
122T250DF1	1,200	250	DF	5.51
192T250DI1	1,900	250	DI	7.75
292T250FF1	2,900	250	FF	10.74
392T250FH1	3,900	250	FH	13.58
131T350BB1	130	350	BB	2.65
251T350BD1	250	350	BD	3.38
371T350BF1	370	350	BF	3.99
551T350DD1	550	350	DD	4.97
801T350DF1	800	350	DF	6.35
122T350DI1	1,200	350	DI	8.51
302T350FJ1	3,000	350	FJ	17.18
750T450BB1	75	450	BB	2.75
141T450BD1	140	450	BD	3.35
211T450BF1	210	450	BF	4.21
321T450DD1	320	450	DD	5.29
481T450DF1	480	450	DF	7.12
701T450DI1	700	450	DI	9.59
112T450FF1	1,100	450	FF	13.96
152T450FH1	1,500	450	FH	17.58
182T450FJ1	1,800	450	FJ	18.94

•New item features higher capacitance and smaller case size.

*COMPUTER GRADE CASE SIZES

Size includes plastic insulating sleeve.

CG or CGS Case Sizes			Dia. x L., Inches	Mtg. Clamp
A	BB	R2C	1 25/64 x 2 11/64	VR3†
B	BD	R3C	1 25/64 x 3 11/64	VR3†
C	BF	R4C	1 25/64 x 4 11/64	VR3†
H	......	U3C	1 49/64 x 3 11/64	VR6‡
J	......	U4C	1 49/64 x 4 11/64	VR6‡
K	DD	V3C	2 1/64 x 3 11/64	VR8§
D	DF	V4C	2 1/64 x 4 11/64	VR8§
...	DI	V5L	2 1/64 x 5 43/64	VR8§
E	......	W4C	2 33/64 x 4 11/16	VR10#
F	FF	X4C	3 1/64 x 4 11/16	VR12▴
...	FH	X5C	3 1/64 x 5 11/16	VR12▴
G	......	X5L	3 1/64 x 5 43/64	VR12▴
...	FJ	X5R	3 1/64 x 5 59/64	VR12▴

Net Each: †$0.25; ‡$0.29; §$0.32; #$0.34; ▴$0.39.

AXIAL LEAD COMPUTER GRADE CAPACITORS

Series TCG axial lead, computer grade capacitor is a small tubular version of the Mallory type CG electrolytic capacitor listed at left and on previous page. All models are vented except 5/16″ and 7/16″ diameter cases. Long life, all welded construction. Has standard PVC insulating sleeve, optional Mylar* sleeve. **Temperature Range:** −40° C to +85° C. **Tolerance:** 3–75 WVDC, −10% +75% (U); 76–450 WVDC, −10% +50% (T).

*Registered DuPont Corp. trademark.

Mallory No. TCG-	Cap., μF	WV DC	Size Code	Net Each
132U003D1G	1,300	3	D1G	$1.67
202U003J1C	2,000	3	J1C	1.83
212U003D2A	2,100	3	D2A	1.83
302U003J1G	3,000	3	J1G	1.89
572U003L1L	5,700	3	L1L	2.01
602U003J2C	6,000	3	J2C	2.37
103U003N2C	10,000	3	N2C	2.52
113U003L2L	11,000	3	L2L	2.52
183U003N3C	18,000	3	N3C	3.15
800U006B0L	80	6	B0L	1.59
221U006D0L	220	6	D0L	1.59
601U006D1A	600	6	D1A	1.62
671U006D1A	670	6	D1A	1.62
102U006G1C	1,000	6	G1C	1.74
112U006G1C	1,100	6	G1C	1.74
202U006D2E	2,000	6	D2E	1.89
212U006D2E	2,100	6	D2E	1.89
402U006G2L	4,000	6	G2L	2.01
442U006G2L	4,400	6	G2L	2.37
602U006N1L	6,000	6	N1L	2.40
612U006N1L	6,100	6	N1L	2.40
103U006N2L	10,000	6	N2L	2.91
123U006N2L	12,000	6	N2L	3.15
501U010D1A	500	10	D1A	1.62
601U010D1A	600	10	D1A	1.62
102U010D1G	1,000	10	D1G	1.71
162U010D2A	1,600	10	D2A	1.83
252U010N1C	2,500	10	N1C	1.95
272U010N1C	2,700	10	N1C	1.95
502U010N1L	5,000	10	N1L	2.40
552U010N1L	5,500	10	N1L	2.55
103U010L3C	1,000	10	L3C	3.15
700U015B0L	70	15	B0L	1.59
181U015C0P	180	15	C0P	1.59
601U015C1L	600	15	C1L	1.67
122U015D2A	1,200	15	D2A	1.83
252U015G2L	2,500	15	G2L	2.01
292U015G2L	2,900	15	G2L	2.37
402U015N1L	4,000	15	N1L	2.55
412U015N1L	4,100	15	N1L	2.55
632U015L2L	6,300	15	L2L	2.91
802U015N2L	8,000	15	N2L	3.15
822U015N2L	8,200	15	N2L	3.15
103U015N3C	10,000	15	N3C	3.15
300U025B0L	30	25	B0L	1.59
121U025D0N	120	25	D0N	1.59
201U025D1A	200	25	D1A	1.62
231U025D1A	230	25	D1A	1.62
501U025D1N	500	25	D1N	1.83
521U025D1N	520	25	D1N	1.83
102U025N1C	1,000	25	N1C	1.95
112U025J1L	1,100	25	J1L	1.95
222U025J2L	2,200	25	J2L	2.40
232U025J2L	2,300	25	J2L	2.55
402U025L3C	4,000	25	L3C	2.91
412U025L3C	4,100	25	L3C	2.91
250U030B0L	25	30	B0L	1.59
650U030C0P	65	30	C0P	1.59
750U030D0N	75	30	D0N	1.59
950U030D0N	95	30	D0N	1.59
151U030D1A	150	30	D1A	1.62
171U030D1A	170	30	D1A	1.62
251U030D1G	250	30	D1G	1.67
281U030D1G	280	30	D1G	1.67
501U030D2E	500	30	D2E	1.83
531U030D2E	530	30	D2E	1.83
112U030G2L	1,100	30	G2L	2.01
212U030L2L	2,100	30	L2L	2.52
242U030L2L	2,400	30	L2L	2.58
302U030L3C	3,000	30	L3C	2.91
180U050B0L	18	50	B0L	1.59
400U050D0N	40	50	D0N	1.59
500U050D0N	50	50	D0N	1.59
101U050E1G	100	50	E1G	1.62
151U050D1G	150	50	D1G	1.67
251U050D2E	250	50	D2E	1.83
291U050D2E	290	50	D2E	1.83
501U050G2L	500	50	G2L	1.95
601U050G2L	600	50	G2L	2.01
112U050N2C	1,100	50	N2C	2.40
122U050N2C	1,200	50	N2C	2.52
232U050N3C	2,300	50	N3C	3.15
252U050N3L	2,500	50	N3L	3.15
100U075B0N	10	75	B0N	1.59
250U075D0N	25	75	D0N	1.59
400U075D0R	40	75	D0R	1.59
150T100C0P	15	100	C0P	1.59
1R0T150B0L	1	150	B0L	1.59
5R0T150B0N	5	150	B0N	1.59
7R0T150B0H	7	150	B0N	1.59
100T150C0P	10	150	C0P	1.59
250T150E1G	25	150	E1G	1.62
500T150D1N	50	150	D1N	1.71
101T150J1L	100	150	J1L	1.95
111T150J1L	110	150	J1L	1.95
251T150L2C	250	150	L2C	2.40
261T150L2C	260	150	L2C	2.55
531T150N3C	530	150	N3C	$3.15
561T150N3C	560	150	N3C	3.15
200T250E2C	20	250	E2C	1.67
500T250L1G	50	250	L1G	1.89
101T250L2C	100	250	L2C	2.37
201T250N3C	200	250	N3C	2.58
211T250N3C	210	250	N3C	2.58
200T350G1L	20	350	G1L	1.83
300T350G2C	30	350	G2C	1.95
400T350G2L	40	350	G2L	1.95
500T350N1L	50	350	N1L	2.01
600T350N1L	60	350	N1L	2.37
101T350N2L	100	350	N2L	2.52
121T350N2L	120	350	N2L	2.58
161T350N3L	160	350	N3L	3.15
181T350N3L	180	350	N3L	3.15
111T400H3L	110	400	N3L	3.15
5R0T450E1L	5	450	E1L	1.67
100T450G1L	10	450	G1L	1.83
120T450G1L	12	450	G1L	1.83
200T450G2L	20	450	G2L	1.95
500T450N2C	50	450	N2C	2.58
750T450N3C	75	450	N3C	3.15
850T450N3C	85	450	N3C	3.15

.328″ TO .453″ DIAMETER CASES

Cases have clear PVC insulating sleeve. Rubber end seal. Vent on .390″ diameter model only. Bare tinned copper leads #20 AWG, .032″ diameter, 2″ long. Cases listed are insulated. For case measurement, uninsulated, deduct .015″ from diameter and length.

Case Code	Insulated Size, Inches	
	Diameter	Length
B0L	.328	.640
B0N	.328	.765
C0P	.390	.828
C1L	.390	1.640
D0L	.453	.640
D0N	.453	.765
D0R	.453	.890
D1A	.453	1.015
D1G	.453	1.390
D1N	.453	1.765
D2A	.453	2.015
D2E	.453	2.265

.515″ TO 1.015″ DIAMETER CASES

Cases have clear PVC insulating sleeve. Molded plastic cover. All models vented. Bare tinned copper leads #20 AWG, .032″ diameter, 2½″ long, on .515″ and .640″ diameter cases; #18 AWG, .040″ diameter, 2½″ long on all others. Cases listed are insulated. For case measurement, uninsulated, deduct .015″ from diameter and length.

Case Code	Insulated Size, Inches	
	Diameter	Length
E1G	.515	1.390
E1L	.515	1.640
E2C	.515	2.140
G1C	.640	1.140
G1L	.640	1.640
G2C	.640	2.140
G2L	.640	2.640
J1C	.765	1.140
J1G	.765	1.390
J1L	.765	1.640
J2C	.765	2.140
J2L	.765	2.640
L1G	.890	1.390
L1L	.890	1.640
L2C	.890	2.140
L2L	.890	2.640
L3C	.890	3.140
N1C	1.015	1.140
N1L	1.015	1.640
N2C	1.015	2.140
N2L	1.015	2.640
N3C	1.015	3.140
N3L	1.015	3.640

MALLORY AC Motor Capacitors

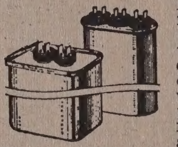
PSU MOTOR START CAPACITORS

PSU capacitors are dry electrolytic non-polarized types for intermittent duty in AC motor starting circuits. Capacitors are rated at minimum to maximum microfarads. Round cases are of moisture and oil resistant molded plastic. Equipped with two quick disconnect terminals. May be mounted by means of PL plastic end cap and HB metal snap-in bracket or VR clamp-bracket. (Order separately).

Mallory No.	Cap., µF	V AC	Size, In. Dia. x L.	Net* Each
PSU7510	75–90	110	1 7/16 x 3 3/8	$1.12
PSU8610	86–103	110	1 7/16 x 3 3/8	1.15
PSU9710	97–116	110	1 7/16 x 3 3/8	1.23
PSU23310A	233–280	110	1 7/16 x 3 3/8	1.89
PSU23310B	233–280	110	2 1/16 x 2 3/8	1.89
PSU27010B	270–324	110	2 1/16 x 2 3/8	1.93
PSU28210	282–338	110	1 13/16 x 3 3/8	2.18
PSU40010	400–480	110	1 13/16 x 4 3/8	2.45
PSU43010	430–516	110	1 13/16 x 4 3/8	2.90
PSU46010	460–552	110	2 1/16 x 3 3/8	3.05
PSU48510	485–582	110	1 13/16 x 4 3/8	3.63
PSU54010A	540–648	110	2 1/16 x 3 3/8	3.95
PSU54010	540–648	110	1 13/16 x 4 3/8	3.95
PSU59010	590–708	110	1 13/16 x 4 3/8	4.17
PSU2115	21–25	*	1 7/16 x 2 3/4	.95
PSU2515	25–30	*	1 7/16 x 2 3/4	.97
PSU3015	30–36	*	1 7/16 x 2 3/4	.98
PSU3615	36–43	*	1 7/16 x 2 3/4	1.01
PSU3815	38–46	*	1 7/16 x 2 3/4	1.03
PSU4315	43–53	*	1 7/16 x 2 3/4	1.04
PSU5315	53–64	*	1 7/16 x 2 3/4	1.05
PSU6415	64–77	*	1 7/16 x 2 3/4	1.08
PSU7215	72–88	*	1 7/16 x 2 3/4	1.09
PSU8815	88–108	*	1 7/16 x 2 3/4	1.15
PSU10815	108–130	*	1 7/16 x 2 3/4	1.17
PSU12415	124–149	*	1 7/16 x 2 3/4	1.18
PSU13015	130–156	*	1 7/16 x 2 3/4	1.25
PSU14515	145–175	*	1 7/16 x 2 3/4	1.29
PSU16115	161–193	*	1 7/16 x 2 3/4	1.32
PSU18915	189–227	*	1 7/16 x 3 3/8	1.53
PSU20015	200–240	*	1 7/16 x 3 3/8	1.57
PSU21615	216–259	*	1 7/16 x 3 3/8	1.63
PSU23315	233–280	*	1 7/16 x 4 3/8	1.89
PSU24315	243–292	*	1 13/16 x 3 3/8	1.92
PSU27015	270–324	*	1 13/16 x 3 3/8	1.93
PSU30015	300–360	*	1 13/16 x 3 3/8	2.14
PSU32415	324–388	*	1 13/16 x 3 3/8	2.20
PSU34015	340–408	*	1 13/16 x 3 3/8	2.24
PSU37815	378–440	*	1 13/16 x 3 3/8	2.34
PSU40015	400–480	*	1 13/16 x 3 3/8	2.47
PSU43015	430–516	*	2 1/16 x 4 3/8	2.90
PSU46015	460–552	*	2 1/16 x 4 3/8	3.05
PSU54015	540–648	*	2 1/16 x 4 3/8	3.95
PSU59015	590–708	*	2 1/16 x 4 3/8	4.19
PSU70515	705–845	*	2 1/16 x 4 3/8	4.29
PSU82915	829–995	*	2 9/16 x 4 3/8	5.20
PSU100015	1K–1.2K	*	2 9/16 x 4 3/4	5.58
PSU3825	38–46	125	1 7/16 x 2 3/4	1.12
PSU7225	72–86	125	1 7/16 x 3 3/8	1.14
PSU8625	86–103	125	1 7/16 x 2 3/4	1.26
PSU10825	108–130	125	1 7/16 x 3 3/8	1.29
PSU12425	124–149	125	1 7/16 x 3 3/8	1.30
PSU13025	130–156	125	1 7/16 x 3 3/8	1.40
PSU14525	145–174	125	1 7/16 x 3 3/8	1.47
PSU16125	161–193	125	1 7/16 x 4 3/8	1.68
PSU16125A	161–193	125	1 7/16 x 3 3/8	1.68
PSU18925	189–229	125	1 13/16 x 3 3/8	1.72
PSU19225	192–230	125	1 7/16 x 4 3/8	1.78
PSU21625	216–259	125	1 13/16 x 3 3/8	1.89
PSU24325	243–292	125	1 13/16 x 3 3/8	2.09
PSU27325	273–328	125	1 13/16 x 4 3/8	2.17
PSU32425	324–389	125	1 13/16 x 4 3/8	2.86
PSU34125	341–409	125	1 13/16 x 4 3/8	3.14
PSU40025	400–480	125	2 1/16 x 4 3/8	3.28
PSU48525	485–543	125	2 1/16 x 4 3/8	3.45
PSU18965	189–227	165	1 13/16 x 4 3/8	3.11
PSU21665	216–259	165	1 13/16 x 4 3/8	3.20
PSU24365	243–292	165	2 1/16 x 3 3/8	3.67
PSU3220	32–38	220	1 7/16 x 2 3/4	1.98
PSU3820	38–46	220	1 7/16 x 3 3/8	2.13
PSU5320	53–64	220	1 13/16 x 3 3/8	2.34
PSU6420	64–77	220	1 13/16 x 3 3/8	2.73
PSU7020	70–84	220	1 13/16 x 3 3/8	2.82
PSU8620	86–103	220	1 13/16 x 4 3/8	3.07
PSU14120R	141–169†	220	2 1/16 x 4 3/8	4.12
PSU14520	145–174	220	2 1/16 x 4 3/8	4.11
PSU21620	216–259	220	2 9/16 x 4 3/8	5.41
PSU23320	233–280	220	2 9/16 x 4 3/8	5.81
PSU2535	25–30	‡	1 7/16 x 2 3/4	1.92
PSU4335	43–53	‡	1 13/16 x 3 3/8	2.27
PSU5035	50–60	‡	1 13/16 x 3 3/8	2.31
PSU7535	75–90	‡	1 13/16 x 3 3/8	2.97
PSU8835	88–108	‡	1 13/16 x 3 3/8	2.95
PSU10835	108–130	‡	1 13/16 x 4 3/8	3.46
PSU12135	121–145	‡	2 1/16 x 4 3/8	3.66
PSU13535	135–162	‡	2 1/16 x 4 3/8	3.82
PSU14135R	141–169†	‡	2 1/16 x 4 3/8	4.12
PSU16135	161–193	‡	2 9/16 x 4 3/8	4.75
PSU18935R	189–227†	‡	2 9/16 x 4 3/8	5.03
PSU21635	216–259	‡	2 1/16 x 4 3/8	5.05
PSU23335	233–280	‡	2 9/16 x 4 3/8	$5.48
PSU27035	270–324	‡	2 9/16 x 4 3/8	5.91
PSU1850R	18–22†	250	1 7/16 x 2 3/4	1.93
PSU2150	21–25	250	1 7/16 x 2 3/4	1.96
PSU2550	25–30	250	1 7/16 x 2 3/4	2.01
PSU3650	36–43	250	1 13/16 x 3 3/8	2.47
PSU4350	43–53	250	1 13/16 x 3 3/8	2.50
PSU5050	50–60	250	1 13/16 x 3 3/8	2.59
PSU5950	59–71	250	1 13/16 x 4 3/8	2.94
PSU7550	75–90	250	1 13/16 x 4 3/8	3.08
PSU8150	81–97	250	1 13/16 x 4 3/8	3.35
PSU8850	88-108	250	1 13/16 x 4 3/8	3.38
PSU10850	108–130	250	2 1/16 x 4 3/8	3.69
PSU12150	121–145	250	2 1/16 x 4 3/8	4.05
PSU13550	135–162	250	2 1/16 x 4 3/8	4.24
PSU13550R	135-162†	250	2 1/16 x 4 3/8	4.41
PSU14150	141–169	250	2 1/16 x 4 3/8	4.92
PSU16150R	161–193†	250	2 9/16 x 4 3/8	5.94
PSU18950	189–227	250	2 9/16 x 4 3/8	6.18
PSU2730	27–32	330	1 13/16 x 3 3/8	2.06
PSU3430	34–41	330	1 13/16 x 3 3/8	2.21
PSU5330	53–64	330	1 13/16 x 4 3/8	3.00
PSU7230	72–86	330	2 1/16 x 4 3/8	3.30
PSU8130	81–90	330	2 9/16 x 4 3/8	4.27
PSU8830	88-108	330	2 1/16 x 4 3/8	4.29
PSU9730	97–116	330	2 9/16 x 4 3/8	4.79
PSU10830	108–130	330	2 9/16 x 4 3/8	5.03
PSU10830R	108–130†	330	2 9/16 x 4 3/8	5.20
PSU12430	124–149	330	2 9/16 x 4 3/8	5.59
PSU12730	127–152	330	2 9/16 x 4 3/8	5.67
PSU13530	135–162	330	2 9/16 x 4 3/8	5.73
PSU13530R	135–162†	330	2 9/16 x 4 3/8	5.90
PSU14530	145–175	330	2 9/16 x 4 3/8	6.22
PSU16130	161–193	330	2 9/16 x 4 3/8	6.68
PSU18930	189–227	330	2 9/16 x 4 3/8	6.30
PSU21630	216–259	330	2 9/16 x 4 3/8	6.69

*110–125 VAC. †With resistors across terminals. ‡220–250 VAC.

MOTOR RUN CAPACITORS



For motor run and fluorescent ballast applications. All types have metal cases and quick-disconnect terminals with flash guards. Impregnating oil is non-flammable. Tolerance: ±10%. Temp. Range: −30° to +70° C. Always connect AC line to red terminal and windings to black.

TYPE OP (OVAL)

Mallory No.	Cap., µF	V AC	Size, Inches	Net* Each
OP1065	10	165	1 5/16 x2 5/32 x2 7/8	$3.92
OP336	3	236	1 5/16 x2 5/32 x2 1/16	2.01
OP436	4	236	1 5/16 x2 5/32 x2 1/16	2.08
OP536	5	236	1 5/16 x2 5/32 x2 5/16	2.14
OP7x36	7.5	236	1 5/16 x2 5/32 x3 3/8	3.98
OP1036	10	236	2 5/32 x2 27/32x2 1/4	4.41
OP1536A	15	236	2 5/32 x2 27/32x3 1/32	4.98
OP2036	20	236	2 5/32 x2 27/32x3 25/32	7.27
OP17525	17.5	250	2 5/32 x2 27/32x3 13/32	6.76
OP1033A	10	330	2 5/32 x2 27/32x2 3/4	4.50
OP14533	14.5	330	2 5/32 x2 27/32x4 5/32	4.98
OP170	1	370	1 5/16 x2 5/32 x1 11/16	2.00
OP270	2	370	1 5/16 x2 5/32 x1 11/16	2.20
OP370	3	370	1 5/16 x2 5/32 x2 1/16	2,23
OP470	4	370	1 5/16 x2 5/32 x2 9/16	2.60
OP570	5	370	1 5/16 x2 5/32 x2 7/8	3.45
OP670	6	370	1 5/16 x2 5/32 x3 1/8	3.88
OP7x570	7.5	370	2 5/32 x2 27/32x2 1/2	5.15
OP7x570A	7.5	370	1 5/16 x2 5/32 x3 13/32	5.15
OP1070	10	370	2 5/32 x2 27/32x3 1/32	5.51
OP1070A	10	370	1 5/16 x2 5/32 x4 3/4	5.51
OP12x70	12.5	370	1 29/32x2 29/32x3 1/2	6.50
OP1570B	15	370	1 29/32x2 29/32x3 7/8	6.50
OP1570	15	370	2 5/32 x2 27/32x4 5/32	6.50
OP17570B	17.5	370	1 29/32x2 29/32x4 3/4	7.05
OP17570	17.5	370	2 5/32 x2 27/32x4 7/8	7.05
OP2070B	20	370	1 29/32x2 29/32x5 1/4	8.69
OP2070	20	370	2 5/32 x2 27/32x4 21/32	8.69
OP2570B	25	370	1 29/32x2 29/32x6 1/4	10.67
OP2570C	25	370	1 31/32x3 21/32x4 3/4	10.67
OP2570	25	370	2 5/32 x2 27/32x5 3/16	10.67
OP27570	27.5	370	1 31/32x3 21/32x5 3/4	11.15
OP3070	30	370	1 31/32x3 21/32x5 3/4	11.77
OP3570	35	370	1 31/32x3 21/32x6 1/4	12.24
OP4070	40	370	1 31/32x3 21/32x7 1/4	12.61
OP4570	45	370	1 31/32x3 21/32x8	16.27
OP5070	50	370	1 31/32x3 21/32x9	21.22
OP15D-1070	15–10	370	1 29/32x2 29/32x6 1/4	11.24
OP17D570	17.5, 5	370	1 29/32x2 29/32x6 1/4	10.80
OP20D570	20, 5	370	1 31/32x3 21/32x5 3/4	11.40
OP20D-1570R	20–15	370	1 31/32x3 21/32x6 3/4	15.33
OP25D370	25–3	370	1 31/32x3 21/32x5 1/4	12.17
OP25D570	25, 5	370	1 31/32x3 21/32x6 3/4	14.06

TYPE OP (OVAL) (Continued)

Mallory No.	Cap., µF	V AC	Size, Inches	Net* Each
OP30D570	30, 5	370	1 31/32x3 21/32x8	15.32
OP35D370	35, 3	370	1 31/32x3 21/32x7 1/4	14.85
OP35D470	35–4	370	1 31/32x3 21/32x7 1/4	12.38
OP35D-570A	35, 5	370	1 31/32x3 21/32x7 1/4	15.83
OP240	2	440	1 5/16 x2 5/32 x2 1/16	2.82
OP340	3	440	1 5/16 x2 5/32 x2 7/8	3.01
OP440	4	440	1 5/16 x2 5/32 x3 1/16	4.02
OP540	5	440	1 5/16 x2 5/32 x3 3/4	4.15
OP640	6	440	1 5/16 x2 5/32 x4 3/16	4.87
OP7x40	7.5	440	2 5/32 x2 27/32x3 13/32	5.28
OP1040	10	440	1 29/32x2 29/32x3 7/8	5.81
OP1044	10	440	2 5/32 x2 27/32x4 5/32	5.81
OP12x40	12.5	440	1 29/32x2 29/32x4 3/4	6.87
OP1540	15	440	2 5/32 x2 27/32x5 5/8	7.99
OP17x40	17.5	440	1 29/32x2 29/32x6 1/4	10.07
OP2040	20	440	1 29/32x2 29/32x6 3/4	10.07
OP2040B	20	440	1 31/32x3 21/32x5 1/4	10.07
OP2540	25	440	1 31/32x3 21/32x6 1/4	14.61
OP3040	30	440	1 31/32x3 21/32x8	16.14
OP3540	35	440	1 31/32x3 21/32x9	18.66
OP4040	40	440	1 31/32x3 21/32x9 1/2	20.44
OP4540	45	440	1 31/32x3 21/32x9 1/2	21.87
OP10D340	10, 3	440	2 1/4 x2 15/16x5 3/16	8.82
OP10D440	10, 4	440	1 29/32x2 29/32x5 1/4	9.93
OP10D540	10, 5	440	1 3/4 x2 29/32x5 1/4	8.26
OP15D440	15, 4	440	1 31/32x3 21/32x6 1/4	12.18
OP17D740	17.5, 7.5	440	1 31/32x3 21/32x6 1/4	11.37
OP17D-1740F	17.5–17–5†	440	1 31/32x3 21/32x9	20.14
OP20D-1540	20, 15	440	1 31/32x3 21/32x9	15.53
OP20D-1540R	20–15*	440	1 31/32x3 21/32x9	17.71
OP20D-2040R	20–20*	440	1 31/32x3 21/32x9 1/2	19.00
OP25D440	25–4	440	1 31/32x2 21/32x8	16.26
OP25D-1040R	25–10*	440	1 31/32x3 21/32x9	17.73
OP25D-1540R	25–15*	440	1 31/32x3 21/32x9 1/2	18.82
OP25D-2040R	25–20*	440	1 31/32x3 21/32x9 1/2	19.53
OP27D440	27.5,4	440	1 31/32x3 21/32x9	18.70
OP35D340	35, 3	440	1 31/32x3 31/32x9 1/2	21.89
OP35D540	35–5	440	1 31/32x3 21/32x9 1/2	22.61
OP40D540	40, 5	440	1 31/32x3 21/32x9 1/2	22.96

*With resistors across terminals. †With internal fuse.

TYPE OPR (RECTANGULAR)

Mallory No.	Cap., µF	V AC	Size, Inches	Net* Each
OPR2070	20	370	2 5/32 x2 27/32x5 3/16	$11.91
OPR2570	25	370	2 5/32 x2 27/32x5 5/8	12.51
OPR2570B	25	370	2 27/32x4 9/16 x3 3/4	12.51
OPR3070	30	370	2 5/32 x2 27/32x6 1/4	11.79
OPR3570	35	370	2 27/32x4 9/16 x4 5/8	12.42
OPR4070	40	370	2 27/32x4 9/16 x5 3/16	19.20
OPR4570	45	370	2 27/32x4 9/16 x6 1/4	20.30
OPR2040	20	440	2 5/32 x2 27/32x6 3/4	11.40
OPR2040B	20	440	2 27/32x4 9/16 x4 3/16	11.40
OPR2540	25	440	2 27/32x4 9/16 x4 3/16	14.73
OPR3040	30	440	2 27/32x4 9/16 x5 3/16	16.92
OPR3540	35	440	2 27/32x4 9/16 x5 3/16	18.73
OPR4040	40	440	2 27/32x4 9/16 x6 1/4	20.37
OPR4540	45	440	2 27/32x4 9/16 x6 1/4	22.93
OPR5040B	50	440	2 27/32x4 9/16 x6 3/4	23.83
OPR5040	50	440	3 3/4 x4 9/16 x5 7/8	23.83
OPR5540	55	440	2 27/32x4 9/16 x7 1/2	25.41
OPR6040	60	440	3 3/4 x4 9/16 x7	26.93
OPR6540F	65†	440	2 27/32x4 9/16 x8	28.50
OPR30D-2540R	30–25*	440	2 27/32x4 9/16 x7 1/4	27.85
OPR40D-540	40, 5	440	2 27/32x4 9/16 x6 3/4	22.96

*With resistors across terminals. †With internal fuse.

TYPE RP (ROUND)

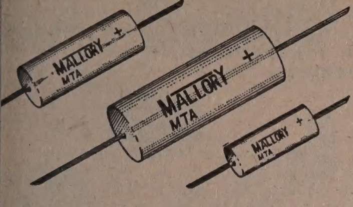
Mallory No.	Cap., µF	V AC	Size, Inches Dia. x Lgth.	Net* Each
RP3303	3	330	2 x 1 3/4	$2.66
RP3304	4	330	2 x 2 3/16	2.66
RP3305	5	330	2 x 2 11/16	2.90
RP3306	6	330	2 x 2 7/8	3.20
RP3307	7	330	2 x 3 5/16	3.39
RP3308	8	330	2 x 3 13/16	4.26
RP3310	10	330	2 1/2 x 3 1/8	4.61
RP3312	12	330	2 1/2 x 3 1/2	5.48
RP3315	15	330	2 1/2 x 4 1/8	5.90

★QUANTITY DISCOUNTS

1–9 Net; 10–24, 25 Up prices on request.

MALLORY Tubular Electrolytics

MTA MOLDED TUBULAR ALUMINUM ELECTROLYTIC CAPACITORS



igh quality electrolytics, precision olded by an exclusive new technique. recision molding assures case uniformity d quality unattainable by conventional be-and-fill methods. Polypropylene case aterial provides extreme humidity proection; actually excludes water molecules hile allowing for molecular venting of e electrolyte if necessary. All-welded nstruction. **Temperature Range:** −20° to +65° C. **Tolerance:** −10%, +100%. **rite for complete specifications.**

†MTA CASE SIZES

Case Code	Size, Inches	
	Dia. x L.	Leads
D	5⁄16 x ¾	2
E	⅜ x 1	2
F	½ x 1⅜	2
G	¾ x 1¾	2

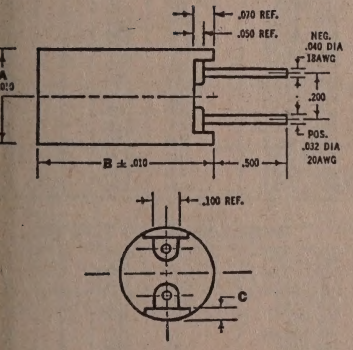
Mallory No.	Cap., μF	Max. WVDC	Surge VDC	Size †	Net Each
ITA1000F1	1000	1	2	F	$0.55
ITA60D3	60	3	4	D	.35
ITA175E3	175	3	4	E	.44
ITA600F3	600	3	4	F	.44
ITA750F3	750	3	4	F	.55
ITA50D6	50	6	8	D	.35
ITA125E6	125	6	8	E	.38

MTA STOCK VALUES

Mallory No.	Cap., μF	Max. WVDC	Surge VDC	Size †	Net Each
MTA150E6	150	6	8	E	$0.38
MTA450F6	450	6	8	F	.49
MTA500F6	500	6	8	F	.49
MTA3000G6	3000	6	8	G	.78
MTA40D10	40	10	12	D	.35
MTA75E10	75	10	12	E	.38
MTA100E10	100	10	12	E	.38
MTA200E10	200	10	12	E	.44
MTA400F10	400	10	12	F	.52
MTA2500-G10	2500	10	12	G	.78
MTA30D15	30	15	18	D	.35
MTA35D15	35	15	18	D	.35
MTA50E15	50	15	18	E	.38
MTA80E15	80	15	18	E	.38
MTA90E15	90	15	18	E	.38
MTA100E15	100	15	18	E	.38
MTA250F15	250	15	18	F	.49
MTA300F15	300	15	18	F	.55
MTA350F15	350	15	18	F	.55
MTA2000-G15	2000	15	18	G	.78
MTA25D20	25	20	25	D	.35
MTA60E20	60	20	25	E	.38
MTA70E20	70	20	25	E	.38
MTA250F20	250	20	25	F	.55
MTA50E25	50	25	30	E	.38
MTA175F25	175	25	30	F	.52
MTA200F25	200	25	30	F	.55
MTA500G25	500	25	30	G	.78
MTA1000-G25	1000	25	30	G	.78
MTA20D30	20	30	35	D	.35
MTA40E30	40	30	35	E	.38
MTA9D35	9	35	40	D	.35
MTA10D35	10	35	40	D	.35
MTA15D35	15	35	40	D	.35
MTA25D35	25	35	40	D	.38
MTA30E35	30	35	40	E	.38
MTA35E35	35	35	40	E	.38
MTA90F35	90	35	40	F	.49
MTA100F35	100	35	40	F	.49
MTA125F35	125	35	40	F	.52
MTA150F35	150	35	40	F	.55
MTA1D50	1	50	60	D	.35

Mallory No.	Cap., μF	Max. WVDC	Surge VDC	Size †	Net Each
MTA2D50	2	50	60	D	$0.35
MTA3D50	3	50	60	D	.35
MTA4D50	4	50	60	D	.35
MTA5D50	5	50	60	D	.35
MTA6D50	6	50	60	D	.35
MTA7D50	7	50	60	D	.35
MTA8D50	8	50	60	D	.35
MTA9D50	9	50	60	D	.38
MTA10D50	10	50	60	D	.38
MTA15D50	15	50	60	D	.38
MTA20E50	20	50	60	E	.38
MTA25E50	25	50	60	E	.44
MTA30E50	30	50	60	E	.44
MTA35E50	35	50	60	E	.44
MTA40E50	40	50	60	E	.44
MTA50E50	50	50	60	E	.44
MTA60F50	60	50	60	F	.49
MTA70F50	70	50	60	F	.49
MTA80F50	80	50	60	F	.52
MTA200G50	200	50	60	G	.78
MTA300G50	300	50	60	G	.78
MTA400G50	400	50	60	G	.78
MTA500G50	500	50	60	G	.78
MTA5D75	5	75	100	D	.44
MTA15E75	15	75	100	E	.44
MTA50F75	50	75	100	F	.49
MTA100G75	100	75	100	G	.78
MTA250G75	250	75	100	G	.78
MTA1D100	1	100	120	D	.44
MTA2D100	2	100	120	D	.44
MTA3D100	3	100	120	D	.44
MTA4D100	4	100	120	D	.44
MTA5D100	5	100	120	D	.44
MTA6E100	6	100	120	E	.44
MTA8E100	8	100	120	E	.44
MTA10E100	10	100	120	E	.44
MTA15E100	15	100	120	E	.44
MTA20F100	20	100	120	F	.44
MTA25F100	25	100	120	F	.49
MTA30F100	30	100	120	F	.49
MTA35F100	35	100	120	F	.49
MTA40F100	40	100	120	F	.49
MTA50G100	50	100	120	G	.78
MTA100-G100	100	100	120	G	.78
MTA150-G100	150	100	120	G	.78

MTV MOLDED CASE VERTICAL-MOUNT ELECTROLYTICS



†MTV CASE SIZES

Case Code	Size, Inches		
	A	B	C
CB	.375	.812	.040
CD	.375	.937	.040
CF	.375	1.062	.040
CK	.375	1.312	.040
DB	.500	.812	.050
DE	.500	1.000	.050
DJ	.500	1.250	.050
DN	.500	1.500	.050

Mallory o. MTV-	Cap., μF	Max. WVDC	Surge VDC	Size †	Net Each
0CD3	150	3	4	CD	$0.40
0CD3	200	3	4	CD	.46
0CF3	300	3	4	CF	.46
0DE3	700	3	4	DE	.54

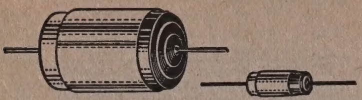
MTV STOCK VALUES

Mallory No. MTV-	Cap., μF	Max. WVDC	Surge VDC	Size †	Net Each
1000DJ3	1000	3	4	DJ	$0.58
100CB6	100	6	8	CB	.40
150CD6	150	6	8	CD	.40
250CK6	250	6	8	CK	.46
300CK6	300	6	8	CK	.46
400DE6	400	6	8	DE	.46
500DE6	500	6	8	DE	.52
750DJ6	750	6	8	DJ	58
800DN6	800	6	8	DN	.58
70CB10	70	10	12	CB	.40
100CB10	100	10	12	CB	.40
200DB10	200	10	12	DB	.46
250DB10	250	10	12	DB	.46
300DE10	300	10	12	DE	.52
400DE10	400	10	12	DE	.54
600DJ10	600	10	12	DJ	.58
50CB15	50	15	18	CB	.40
60CB15	60	15	18	CB	.40
75CD15	75	15	18	CD	.40
90CD15	90	15	18	CD	.40
100CD15	100	15	18	CD	.40
120CF15	120	15	18	CF	.46
150DB15	150	15	18	DB	.46
150CK15	150	15	18	CK	.46
200DE15	200	15	18	DE	.52
250DE15	250	15	18	DE	.52
400DJ15	400	15	18	DJ	.58
500DN15	500	15	18	DN	.58
30CB25	30	25	30	CB	.38
35CB25	35	25	30	CB	.40
50CD25	50	25	30	CD	.40
50DB25	50	25	30	DB	.46
60CD25	60	25	30	CD	.46
75CF25	75	25	30	CF	.46
100DB25	100	25	30	DB	.46
140DE25	140	25	30	DE	.52
200DE25	200	25	30	DE	.58
250DJ25	250	25	30	DJ	.58
25CB35	25	35	45	CB	.40
50CD35	50	35	45	CD	.46
70DB35	70	35	45	DB	.46
100DB35	100	35	45	DB	.52

Mallory No. MTV-	Cap., μF	Max. WVDC	Surge VDC	Size †	Net Each
150DE35	150	35	45	DE	$0.58
200DJ35	200	35	45	DJ	.58
1CB50	1	50	60	CB	.38
2CB50	2	50	60	CB	.38
3CB50	3	50	60	CB	.38
4CB50	4	50	60	CB	.38
5CB50	5	50	60	CB	.38
6CB50	6	50	60	CB	.38
8CB50	8	50	60	CB	.38
10CB50	10	50	60	CB	.40
15CB50	15	50	60	CB	.40
20CB50	20	50	60	CB	.40
25CB50	25	50	60	CB	.46
35CD50	35	50	60	CD	.46
35DB50	35	50	60	DB	.54
50DB50	50	50	60	DB	.46
70DE50	70	50	60	DE	.52
100DE50	100	50	60	DE	.58
8CB75	8	75	100	CB	.46
15CF75	15	75	100	CF	.46
20DB75	20	75	100	DB	.46
25CF75	25	75	100	CF	.52
30DB75	30	75	100	DB	.52
35DB75	35	75	100	DB	.52
40DB75	40	75	100	DB	.52
50DE75	50	75	100	DE	.52
70DJ75	70	75	100	DJ	.58
1CB100	1	100	120	CB	.38
2CB100	2	100	120	CB	.38
3CB100	3	100	120	CB	.38
4CB100	4	100	120	CB	.38
5CB100	5	100	120	CB	.46
6CB100	6	100	120	CB	.46
8CB100	8	100	120	CB	.46
10CD100	10	100	120	CD	.46
15CF100	15	100	120	CF	.46
20DB100	20	100	120	DB	.46
25DB100	25	100	120	DB	.52
30DE100	30	100	120	DE	.52
35DE100	35	100	120	DE	.52
40DJ100	40	100	120	DJ	.52
50DJ100	50	100	120	DJ	.52

MALLORY Capacitors

POLYSTYRENE CAPACITORS



Manufactured from a unique form of stretched and fused polystyrene to provide the ultimate in temperature stability and humidity protection. Can replace mica, film, paper, ceramic types in most uses. **Insulation Resistance:** Greater than 100,000 megohms. **Power Factor:** Less than 0.05%. **Temperature Coefficient:** −150 ppm/° C, ±60 ppm/° C. **Temperature Range:** −40° C to +85° C; for best operating stability, −10° C to +70° C. Sizes shown are ±.010″ dia. x ±.032″ lg. **Ask for Bulletin 9-370 for complete specifications.**

63 WVDC

Tolerance, ±2.5%.

Mallory No.	Cap., pF	Size, In. Dia. x L.	Net Each
SXL111	11,000	.320 x .790	$0.21
SXL112	12,000	.320 x .790	.21
SXL113	13,000	.320 x .790	.21
SXL115	15,000	.320 x .790	.21
SXL116	16,000	.320 x .790	.25
SXL118	18,000	.320 x .790	.25
SXL120	20,000	.320 x .790	.25
SXL122	22,000	.370 x .790	.25
SXL124	24,000	.370 x .790	.30
SXL127	27,000	.370 x .790	.30
SXL130	30,000	.370 x .790	.30
SXL133	33,000	.440 x .790	.37
SXL136	36,000	.440 x .790	.37
SXL139	39,000	.440 x .790	.37
SXL143	43,000	.380 x 1.180	.39
SXL147	47,000	.380 x 1.180	.39
SXL150	50,000	.380 x 1.180	.39
SXL151	51,000	.410 x 1.180	.43
SXL156	56,000	.410 x 1.180	.43
SXL162	62,000	.430 x 1.180	.43
SXL168	68,000	.430 x 1.180	.43
SXL175	75,000	.470 x 1.180	.50
SXL182	82,000	.480 x 1.180	.55
SXL191	91,000	.500 x 1.180	.60
SXL010	100,000	.500 x 1.180	.60
SXL015	150,000	.433 x 1.574	.75
SXL022	220,000	.531 x 1.574	1.19
SXL033	330,000	.630 x 1.574	1.78
SXL047	470,000	.787 x 1.574	2.03

160 WVDC

Tolerance, ±2.5%.

Mallory No.	Cap., pF	Size, In. Dia. x L.	Net Each
SXM330	300	.143 x .473	$0.15
SXM333	330	.147 x .473	.15
SXM336	360	.150 x .473	.15
SXM339	390	.169 x .473	.15
SXM343	430	.172 x .473	.15
SXM347	470	.173 x .473	.15
SXM350	500	.173 x .473	.15
SXM351	510	.173 x .473	.15
SXM356	560	.173 x .473	.14
SXM362	620	.173 x .473	.14
SXM368	680	.173 x .473	.14
SXM375	750	.176 x .473	.14
SXM382	820	.181 x .473	.14
SXM391	910	.186 x .473	.14
SXM210	1,000	.228 x .473	.14
SXM211	1,100	.241 x .473	.14
SXM212	1,200	.251 x .473	.14
SXM213	1,300	.253 x .473	.14
SXM215	1,500	.257 x .473	.14
SXM216	1,600	.262 x .473	.14
SXM218	1,800	.271 x .473	.14
SXM220	2,000	.275 x .473	.14
SXM222	2,200	.280 x .473	.14
SXM224	2,400	.230 x .710	.14
SXM227	2,700	.241 x .710	.14
SXM230	3,000	.252 x .710	.14
SXM233	3,300	.260 x .710	.14
SXM236	3,600	.266 x .710	.14
SXM239	3,900	.271 x .710	.13
SXM243	4,300	.273 x .710	.13
SXM247	4,700	.275 x .710	.13
SXM250	5,000	.293 x .710	.13
SXM251	5,100	.297 x .710	.13
SXM256	5,600	.308 x .710	.13
SXM262	6,200	.320 x .710	.12
SXM268	6,800	.331 x .710	.12
SXM275	7,500	.338 x .710	.12
SXM282	8,200	.309 x .886	.12
SXM291	9,100	.318 x .886	.12
SXM110	10,000	.329 x .886	.12
SXM111	11,000	.309 x .787	.22
SXM112	12,000	.319 x .787	.22
SXM113	13,000	.323 x .787	.22
SXM115	15,000	.347 x .787	.22
SXM116	16,000	.352 x .787	.25
SXM118	18,000	.394 x .787	.25
SXM120	20,000	.404 x .787	.25
SXM122	22,000	.419 x .787	.25
SXM124	24,000	.429 x .787	.31
SXM127	27,000	.463 x .787	.31
SXM130	30,000	.500 x .787	.31
SXM133	33,000	.488 x .787	$0.38
SXM136	36,000	.404 x 1.182	.38
SXM139	39,000	.423 x 1.182	.38
SXM143	43,000	.447 x 1.182	.41
SXM147	47,000	.463 x 1.182	.41
SXM150	50,000	.478 x 1.182	.41
SXM151	51,000	.480 x 1.182	.49
SXM156	56,000	.490 x 1.182	.49
SXM162	62,000	.518 x 1.182	.49
SXM168	68,000	.543 x 1.182	.49
SXM175	75,000	.577 x 1.182	.64
SXM182	82,000	.581 x 1.182	.75
SXM191	91,000	.604 x 1.182	.83
SXM010	100,000	.614 x 1.182	.83
SXM015	150,000	.728 x 1.574	1.25
SXM022	220,000	.866 x 1.574	1.54
SXM033	330,000	1.024 x 1.574	2.14

600 WVDC

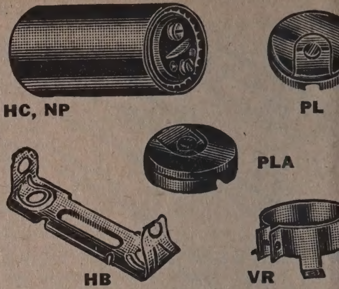
Tolerance, ±1 pF for values 5–18 pF; ±5%, all others.

Mallory No.	Cap., pF	Size, In. Dia. x L.	Net Each
SX550	5	.165 x .395	$0.13
SX568	6.8	.166 x .395	.13
SX410	10	.167 x .395	.13
SX412	12	.167 x .395	.13
SX415	15	.168 x .395	.13
SX418	18	.169 x .395	.13
SX420	20	.170 x .395	.13
SX422	22	.170 x .395	.13
SX424	24	.171 x .395	.13
SX427	27	.172 x .395	.13
SX430	30	.173 x .395	.13
SX433	33	.173 x .395	.13
SX436	36	.174 x .395	.13
SX439	39	.175 x .395	.13
SX443	43	.177 x .395	.13
SX447	47	.178 x .395	.13
SX456	56	.180 x .395	.13
SX462	62	.182 x .395	.13
SX468	68	.184 x .395	.13
SX475	75	.188 x .395	.13
SX482	82	.189 x .395	.13
SX491	91	.192 x .395	.13
SX310	100	.195 x .395	.13
SX311	110	.198 x .395	.13
SX312	120	.201 x .395	.13
SX313	130	.204 x .395	.13
SX315	150	.210 x .395	.13
SX316	160	.213 x .395	.13
SX318	180	.221 x .395	.13
SX320	200	.227 x .395	.13
SX322	220	.233 x .395	.13
SX324	240	.239 x .395	.13
SX327	270	.248 x .395	.13
SX330	300	.255 x .395	.13
SX333	330	.194 x .590	.13
SX336	360	.195 x .590	.13
SX339	390	.197 x .590	.13
SX343	430	.200 x .590	.13
SX347	470	.202 x .590	.13
SX351	510	.204 x .590	.13
SX356	560	.207 x .590	.13
SX362	620	.211 x .590	.13
SX368	680	.215 x .590	.13
SX375	750	.219 x .590	.13
SX382	820	.223 x .590	.13
SX391	910	.228 x .590	.13
SX210	1,000	.233 x .590	.13
SX211	1,100	.238 x .590	.16
SX212	1,200	.245 x .590	.16
SX213	1,300	.250 x .590	.16
SX215	1,500	.262 x .590	.16
SX216	1,600	.267 x .590	.16
SX218	1,800	.279 x .590	.16
SX220	2,000	.291 x .590	.16
SX222	2,200	.300 x .590	.16
SX224	2,400	.314 x .590	.16
SX225	2,500	.320 x .590	.16
SX227	2,700	.331 x .590	.16
SX230	3,000	.348 x .590	.16
SX233	3,300	.366 x .590	.19
SX236	3,600	.383 x .590	.19
SX239	3,900	.402 x .590	.19
SX243	4,300	.425 x .590	.19
SX247	4,700	.448 x .590	.19
SX250	5,000	.466 x .590	.19
SX251	5,100	.470 x .590	.23
SX256	5,600	.465 x .790	.23
SX262	6,200	.480 x .790	.23
SX268	6,800	.500 x .790	.23
SX275	7,500	.520 x .790	.23
SX282	8,200	.540 x .790	.23
SX291	9,100	.565 x .790	.23
SX110	10,000	.590 x .790	.23

HC AND NP HARDWARE

Mal. No.	Description	Net
PL3	1 7/16″ end cap—In	$0.16
PLA3	1 7/16″ end cap—Out	.16
PL6	1 13/16″ end cap—In	.19
PLA6	1 13/16″ end cap—Out	.19
PL8	2 1/16″ end cap—In	.22
PLA8	2 1/16″ end cap—Out	.22
HB2	3 1/64″ horiz. bracket	.22
HB4	3 21/32″ horiz. bracket	.22
HB8	4 21/32″ horiz. bracket	.25

HIGH CAPACITY DRY ELECTROLYTICS



HC and NP capacitors are furnished heavy-duty molded phenolic cases w integral safety vent. HC types are pol ized; NP types are non-polarized. **Ten Range:** −20° C to +85° C. **Toleran** Type HC—0–50 WVDC, −10%, +150 51–350 WVDC, −10%, +100%; WVDC up, −10%, +50%. Type NI ±25%, all units.

POLARIZED TYPE HC

Mallory No.	Cap., µF	WV DC	* Size	N Ea
HC1020A	2,000	10	1	$ 3
HC1040A	4,000	10	2	
HC1060A	6,000§	10‡	8	
HC10100	10,000	10†	7	
HC1520A	2,000	15	1	
HC1540A	4,000	15	3	
HC1560A	6,000	15	4	
HC15100	10,000	15	7	
HC2050-50	2x5,000§	20	7	
HC2060	6,000	20	7	
HC2060A	6,000	20†	5	
HC2510A	1,000	25	1	
HC2520A	2,000	25	2	
HC2530	3,000	25	4	
HC2540A	4,000	25	4	
HC2550	5,000	25	7	
HC4040	4,000	40	7	
HC4040A	4,000	40	5	
HC5005	500	50	2	
HC5005A	500	50	1	
HC5010A	1,000	50	2	
HC5020A	2,000	50	4	
HC5030	3,000	50	7	
HC5040	4,000	50	7	
HC8005	500	80	2	
HC8010	1,000	80	4	
HC8020	2,000	80	7	
HC10005	500	100	2	
HC10015	1,500	100	7	
HC15005	500	150	4	
HC15010	1,000	150	7	
HC15010A	1,000	150	5	
HC20002	200	200	4	
HC20005	500	200	7	
HC20005A	500	200	4	
HC25002	200	250	4	
HC45001	100	450	4	
HC45002	200	450	7	
HC45003	300	450	7	

NON-POLARIZED TYPE NP

NP1225A	200	125	2	$
NP1235A	300	125	4	
NP1255A	500	125	5	
NP2514	100	250	5	
NP2520	150	250	5	
NP3003A	15	300	1	
NP3006	30	300	2	
NP3008	50	300	2	
NP3014A	100	300	4	
NP3020	150	300	7	
NP3025	200	300	7	
NP4505	50	450	4	
NP4510	100	450	7	

‡Semi-polarized. †Aluminum can, post minals. §Temp. Range to +65° C ma

*HC AND NP CASE SIZES

Code	Size, In. Dia. x Lg.	Use Hardware No.		
		Cap	Brkt.	Cl
1	1 7/16 x 2 3/4	PL3, PLA3	HB2	V
2	1 7/16 x 3 3/8	PL3, PLA3	HB4	V
3	1 7/16 x 4 3/8	PL3, PLA3	HB8	V
4	1 13/16 x 3 3/8	PL6, PLA6	HB4	V
5	1 13/16 x 4 3/8	PL6, PLA6	HB8	V
6	2 1/16 x 3 3/8	PL8, PLA8	HB4	V
7	2 1/16 x 4 3/8	PL8, PLA8	HB8	V
8	1 1/2 x 4 1/8	....	.....	V

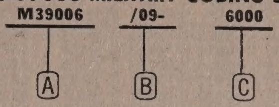
MIL-C-39006/9C STYLE CLR65 CAPACITORS

tyle CLR65 tantalum capacitors designed to meet the require-
ients of MIL-C-39006. Glass-to-tantalum type capacitors are
ermetically sealed. Include axial leads and tubular case. Available
ı capacitance range of 1.7 μF to 1200 μF. Voltage range varies
om 6 volts to 125 volts. See capacitor characteristics below for
ther specifications.

otes:

1. All dimensions in inches.
2. Milliammeters are in parentheses.
4. Metric equivalents (to the nearest 0.01 mm) are given for general information and are based upon 1 inch = 25,4 mm.
4. The weld shall not be enclosed in the end seal.

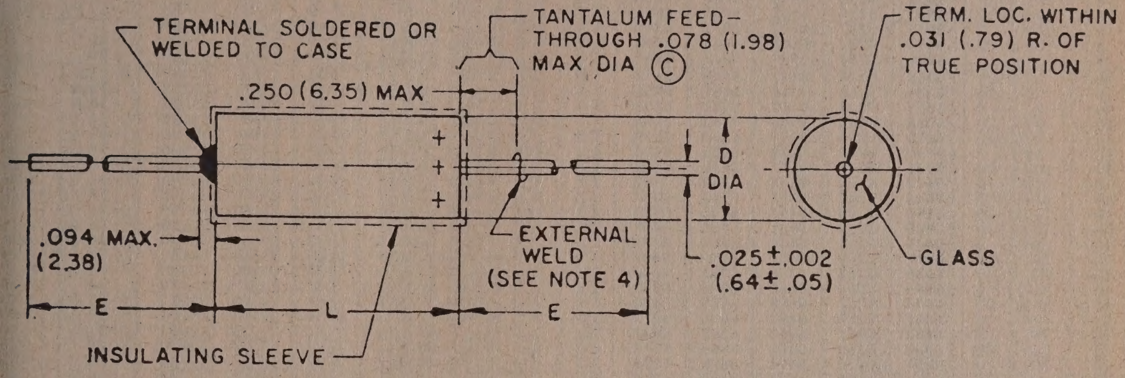
MIL-C-39006 MILITARY CODING SYSTEM

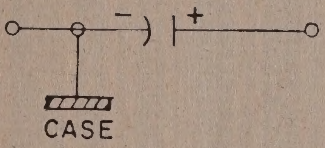


Ⓐ Abbreviated form of MIL-C-39006.

Ⓑ Detail sheet for applicable style; /09 is CLR65.

Ⓒ Dash number from characteristic table below. For specific value of capacitance, capacitance tolerance, voltage, fuse size, and failure rate level the table must be consulted.


TERMINAL SOLDERED OR WELDED TO CASE
TANTALUM FEED-THROUGH .078 (1.98) MAX DIA Ⓒ
TERM. LOC. WITHIN .031 (.79) R. OF TRUE POSITION
.250 (6.35) MAX
+
+
+
D DIA
.094 MAX. (2.38)
EXTERNAL WELD (SEE NOTE 4)
.025±.002 (.64±.05)
GLASS
E
L
E
INSULATING SLEEVE



CIRCUIT DIAGRAM

*CASE SIZE

© Case Size Code	Dimensions, Inches (mm)			
	Basic Case		Insulated Case	
	L† +.031 (.79) −.016 (.41)	D ±.016 (.41)	D Max.	E ±.250 (6.35)
T1	.453 (11.51)	.188 (4.78)	.219 (5.56)	1.500 (38.10)
T2	.641 (16.28)	.281 (7.14)	.312 (7.92)	2.250 (57.15)
T3	.766 (19.46)	.375 (9.53)	.406 (10.31)	2.250 (57.15)
T4	1.062 (26.97)	.375 (9.53)	.406 (10.31)	2.250 (57.15)

ength of basic case; sleeving as specified in MIL-C-39006.

CAPACITOR CHARACTERISTICS

ated DC†	Cap., μF	Tol., ±%	MIL Number M39006/09- Failure Rate Level (%/1000 hrs.) L (2)	M (1)	P (.1)	R (.01)	S (.001)	Case Size*	Max. DC Leakage μA‡	Max. DC Leakage μA#	Max. Dissipation Factor %	De-rated VDC§	Surge VDC†	Max. Ohms	Capacitance Change at −55° C %	+85° C %	+125° C %
6	30	20	**6001**	**6206**	**6411**	**6616**	**6821**	T1	1	2	9.1	4	6.9	100	−40	+10.5	+12
6	30	10	**6002**	**6207**	**6412**	**6617**	**6822**	T1	1	2	9.1	4	6.9	100	−40	+10.5	+12
6	30	5	**6003**	**6208**	**6413**	**6618**	**6823**	T1	1	2	9.1	4	6.9	100	−40	+10.5	+12
6	68	20	**6004**	**6209**	**6414**	**6619**	**6824**	T1	1	2	20.4	4	6.9	60	−40	+14	+16
6	68	10	**6005**	**6210**	**6415**	**6620**	**6825**	T1	1	2	20.4	4	6.9	60	−40	+14	+16
6	68	5	**6006**	**6211**	**6416**	**6621**	**6826**	T1	1	2	20.4	4	6.9	60	−40	+14	+16
6	140	20	**6007**	**6212**	**6417**	**6622**	**6827**	T2	1	3	21.3	4	6.9	40	−40	+14	+16
6	140	10	**6008**	**6213**	**6418**	**6623**	**6828**	T2	1	3	21.3	4	6.9	40	−40	+14	+16
6	140	5	**6009**	**6214**	**6419**	**6624**	**6829**	T2	1	3	21.3	4	6.9	40	−40	+14	+16
6	270	20	**6010**	**6215**	**6420**	**6625**	**6830**	T2	1	6.5	81.8	4	6.9	25	−44	+17.5	+20
6	270	10	**6011**	**6216**	**6421**	**6626**	**6831**	T2	1	6.5	81.8	4	6.9	25	−44	+17.5	+20
6	270	5	**6012**	**6217**	**6422**	**6627**	**6832**	T2	1	6.5	81.8	4	6.9	25	−44	+17.5	+20

t +85° C. ‡At +25° C. §At +125° C. #At +85° C and +125° C.

STYLE CLR65 CAPACITORS CONTINUED ON NEXT PAGE

MIL-C-39006/9C STYLE CLR65 CAPACITORS (CONT'D)

Rated VDC†	Cap., µF	Tol. ± %	MIL Number M39006/09- Failure Rate Level (%/1000 hr.)					Case Size*	Max. DC Leakage		Max. Dissipation Factor %	Derated VDC§	Surge VDC†	Max. Ohms	Capacitance Change at		
			L (2)	M (1)	P (.1)	R (.01)	S (.001)		µA‡	µA#					−55° C %	+85° C %	+125° C %
6	330	20	6013	6218	6423	6628	6833	T3	2	7.9	49.6	4	6.9	20	−44	+14	+16
6	330	10	6014	6219	6424	6629	6834	T3	2	7.9	49.6	4	6.9	20	−44	+14	+16
6	330	5	6015	6220	6425	6630	6835	T3	2	7.9	49.6	4	6.9	20	−44	+14	+16
6	560	20	6016	6221	6426	6631	6836	T3	2	13	128.0	4	6.9	25	−64	+17.5	+20
6	560	10	6017	6222	6427	6632	6837	T3	2	13	128.0	4	6.9	25	−64	+17.5	+20
6	560	5	6018	6223	6428	6633	6838	T3	2	13	128.0	4	6.9	25	−64	+17.5	+20
6	1200	20	6019	6224	6429	6634	6839	T4	3	14	144.4	4	6.9	20	−80	+25	+25
6	1200	10	6020	6225	6430	6635	6840	T4	3	14	144.4	4	6.9	20	−80	+25	+25
8	25	20	6021	6226	6431	6636	6841	T1	1	2	7.6	5	9.2	100	−40	+10.5	+12
8	25	10	6022	6227	6432	6637	6842	T1	1	2	7.6	5	9.2	100	−40	+10.5	+12
8	25	5	6023	6228	6433	6638	6843	T1	1	2	7.6	5	9.2	100	−40	+10.5	+12
8	56	20	6024	6229	6434	6639	6844	T1	1	2	17.0	5	9.2	59	−40	+14	+16
8	56	10	6025	6230	6435	6640	6845	T1	1	2	17.0	5	9.2	59	−40	+14	+16
8	56	5	6026	6231	6436	6641	6846	T1	1	2	17.0	5	9.2	59	−40	+14	+16
8	220	20	6027	6232	6437	6642	6847	T2	1	7	66.4	5	9.2	30	−44	+17.5	+20
8	220	10	6028	6233	6438	6643	6848	T2	1	7	66.4	5	9.2	30	−44	+17.5	+20
8	220	5	6029	6234	6439	6644	6849	T2	1	7	66.4	5	9.2	30	−44	+17.5	+20
8	430	20	6030	6235	6440	6645	6850	T3	2	14	91.5	5	9.2	25	−64	+17.5	+20
8	430	10	6031	6236	6441	6646	6851	T3	2	14	91.5	5	9.2	25	−64	+17.5	+20
8	430	5	6032	6237	6442	6647	6852	T3	2	14	91.5	5	9.2	25	−64	+17.5	+20
8	850	20	6033	6238	6443	6648	6853	T4	4	16	65.8	5	9.2	22	−80	+25	+25
8	850	10	6034	6239	6444	6649	6854	T4	4	16	65.8	5	9.2	22	−80	+25	+25
10	20	20	6035	6240	6445	6650	6855	T1	1	2	6.1	7	11.5	175	−32	+10.5	+12
10	20	10	6036	6241	6446	6651	6856	T1	1	2	6.1	7	11.5	175	−32	+10.5	+12
10	20	5	6037	6242	6447	6652	6857	T1	1	2	6.1	7	11.5	175	−32	+10.5	+12
10	47	20	6038	6243	6448	6653	6858	T1	1	2	18.1	7	11.5	100	−36	+14	+16
10	47	10	6039	6244	6449	6654	6859	T1	1	2	18.1	7	11.5	100	−36	+14	+16
10	47	5	6040	6245	6450	6655	6860	T1	1	2	18.1	7	11.5	100	−36	+14	+16
10	100	20	6041	6246	6451	6656	6861	T2	1	4	15.2	7	11.5	60	−36	+14	+16
10	100	10	6042	6247	6452	6657	6862	T2	1	4	15.2	7	11.5	60	−36	+14	+16
10	100	5	6043	6248	6453	6658	6863	T2	1	4	15.2	7	11.5	60	−36	+14	+16
10	180	20	6044	6249	6454	6659	6864	T2	1	7	54.4	7	11.5	40	−36	+14	+16
10	180	10	6045	6250	6455	6660	6865	T2	1	7	54.4	7	11.5	40	−36	+14	+16
10	180	5	6046	6251	6456	6661	6866	T2	1	7	54.4	7	11.5	40	−36	+14	+16
10	250	20	6047	6252	6457	6662	6867	T3	2	10	37.8	7	11.5	30	−40	+14	+16
10	250	10	6048	6253	6458	6663	6868	T3	2	10	37.8	7	11.5	30	−40	+14	+16
10	250	5	6049	6254	6459	6664	6869	T3	2	10	37.8	7	11.5	30	−40	+14	+16
10	390	20	6050	6255	6460	6665	6870	T3	2	16	87.6	7	11.5	25	−64	+17.5	+20
10	390	10	6051	6256	6461	6666	6871	T3	2	16	87.6	7	11.5	25	−64	+17.5	+20
10	390	5	6052	6257	6462	6667	6872	T3	2	16	87.6	7	11.5	25	−64	+17.5	+20
10	750	20	6053	6258	6463	6668	6873	T4	4	16	56.5	7	11.5	23	−80	+25	+25
10	750	10	6054	6259	6464	6669	6874	T4	4	16	56.5	7	11.5	23	−80	+25	+25
15	15	20	6055	6260	6465	6670	6875	T1	1	2	5.7	10	17.2	155	−24	+10.5	+12
15	15	10	6056	6261	6466	6671	6876	T1	1	2	5.7	10	17.2	155	−24	+10.5	+12
15	15	5	6057	6262	6467	6672	6877	T1	1	2	5.7	10	17.2	155	−24	+10.5	+12
15	33	20	6058	6263	6468	6673	6878	T1	1	2	12.5	10	17.2	90	−28	+14	+16
15	33	10	6059	6264	6469	6674	6879	T1	1	2	12.5	10	17.2	90	−28	+14	+16
15	33	5	6060	6265	6470	6675	6880	T1	1	2	12.5	10	17.2	90	−28	+14	+16
15	70	20	6061	6266	6471	6676	6881	T2	1	4	13.1	10	17.2	75	−28	+14	+16
15	70	10	6062	6267	6472	6677	6882	T2	1	4	13.1	10	17.2	75	−28	+14	+16
15	70	5	6063	6268	6473	6678	6883	T2	1	4	13.1	10	17.2	75	−28	+14	+16
15	120	20	6064	6269	6474	6679	6884	T2	1	7	36.8	10	17.2	50	−28	+17.5	+20
15	120	10	6065	6270	6475	6680	6885	T2	1	7	36.8	10	17.2	50	−28	+17.5	+20
15	120	5	6066	6271	6476	6681	6886	T2	1	7	36.8	10	17.2	50	−28	+17.5	+20
15	170	20	6067	6272	6477	6682	6887	T3	2	10	25.4	10	17.2	35	−32	+14	+16
15	170	10	6068	6273	6478	6683	6888	T3	2	10	25.4	10	17.2	35	−32	+14	+16
15	170	5	6069	6274	6479	6684	6889	T3	2	10	25.4	10	17.2	35	−32	+14	+16
15	270	20	6070	6275	6480	6685	6890	T3	2	16	60.9	10	17.2	30	−56	+17.5	+20
15	270	10	6071	6276	6481	6686	6891	T3	2	16	60.9	10	17.2	30	−56	+17.5	+20
15	270	5	6072	6277	6482	6687	6892	T3	2	16	60.9	10	17.2	30	−56	+17.5	+20
15	540	20	6073	6278	6483	6688	6893	T4	6	24	49.0	10	17.2	23	−80	+25	+25
15	540	10	6074	6279	6484	6689	6894	T4	6	24	49.0	10	17.2	23	−80	+25	+25
25	10	20	6075	6280	6485	6690	6895	T1	1	2	4.6	15	28.8	220	−16	+8	+9
25	10	10	6076	6281	6486	6691	6896	T1	1	2	4.6	15	28.8	220	−16	+8	+9
25	10	5	6077	6282	6487	6692	6897	T1	1	2	4.6	15	28.8	220	−16	+8	+9
25	22	20	6078	6283	6488	6693	6898	T1	1	2	8.3	15	28.8	140	−20	+10.5	+12
25	22	10	6079	6284	6489	6694	6899	T1	1	2	8.3	15	28.8	140	−20	+10.5	+12
25	22	5	6080	6285	6490	6695	6900	T1	1	2	8.3	15	28.8	140	−20	+10.5	+12
25	100	20	6081	6286	6491	6696	6901	T2	1	10	31.4	15	28.8	50	−28	+13	+15
25	100	10	6082	6287	6492	6697	6902	T2	1	10	31.4	15	28.8	50	−28	+13	+15
25	100	5	6083	6288	6493	6698	6903	T2	1	10	31.4	15	28.8	50	−28	+13	+15
25	180	20	6084	6289	6494	6699	6904	T3	2	18	54.3	15	28.8	32	−48	+13	+15
25	180	10	6085	6290	6495	6700	6905	T3	2	18	54.3	15	28.8	32	−48	+13	+15
25	180	5	6086	6291	6496	6701	6906	T3	2	18	54.3	15	28.8	32	−48	+13	+15
25	350	20	6087	6292	6497	6702	6907	T4	7	28	35.0	15	28.8	24	−70	+25	+25
25	350	10	6088	6293	6498	6703	6908	T4	7	28	35.0	15	28.8	24	−70	+25	+25
30	8	20	6089	6294	6499	6704	6909	T1	1	2	4.5	20	34.5	275	−16	+8	+12
30	8	10	6090	6295	6500	6705	6910	T1	1	2	4.5	20	34.5	275	−16	+8	+12
30	8	5	6091	6296	6501	6706	6911	T1	1	2	4.5	20	34.5	275	−16	+8	+12
30	15	20	6092	6297	6502	6707	6912	T1	1	2	9.1	20	34.5	175	−20	+10.5	+12
30	15	10	6093	6298	6503	6708	6913	T1	1	2	9.1	20	34.5	175	−20	+10.5	+12
30	15	5	6094	6299	6504	6709	6914	T1	1	2	9.1	20	34.5	175	−20	+10.5	+12
30	40	20	6095	6300	6505	6710	6915	T2	1	5	12.2	20	34.5	65	−24	+10.5	+12
30	40	10	6096	6301	6506	6711	6916	T2	1	5	12.2	20	34.5	65	−24	+10.5	+12
30	40	5	6097	6302	6507	6712	6917	T2	1	5	12.2	20	34.5	65	−24	+10.5	+12
30	68	20	6098	6303	6508	6713	6918	T2	1	8	31.0	20	34.5	60	−24	+13	+15
30	68	10	6099	6304	6509	6714	6919	T2	1	8	31.0	20	34.5	60	−24	+13	+15
30	68	5	6100	6305	6510	6715	6920	T2	1	8	31.0	20	34.5	60	−24	+13	+15
30	100	20	6101	6306	6511	6716	6921	T3	2	12	19.0	20	34.5	40	−28	+10.5	+12
30	100	10	6102	6307	6512	6717	6922	T3	2	12	19.0	20	34.5	40	−28	+10.5	+12
30	100	5	6103	6308	6513	6718	6923	T3	2	12	19.0	20	34.5	40	−28	+10.5	+12
30	150	20	6104	6309	6514	6719	6924	T3	2	18	46.0	20	34.5	35	−48	+13	+15
30	150	10	6105	6310	6515	6720	6925	T3	2	18	46.0	20	34.5	35	−48	+13	+15
30	150	5	6106	6311	6516	6721	6926	T3	2	18	46.0	20	34.5	35	−48	+13	+15
30	300	20	6107	6312	6517	6722	6927	T4	8	32	35.0	20	34.5	25	−60	+25	+25
30	300	10	6108	6313	6518	6723	6928	T4	8	32	35.0	20	34.5	25	−60	+25	+25
50	5	20	6109	6314	6519	6724	6929	T1	1	2	3.4	30	57.5	400	−16	+5	+6
50	5	10	6110	6315	6520	6725	6930	T1	1	2	3.4	30	57.5	400	−16	+5	+6

†At +85° C. ‡At +25° C. §At +125° C. #At +85° C and +125° C.

***SEE PREVIOUS PAGE FOR CLR65 CASE SIZES**

STYLE CLR65 CAPACITORS CONTINUED ON NEXT PAGE

MILITARY STYLE TANTALUM CAPACITORS

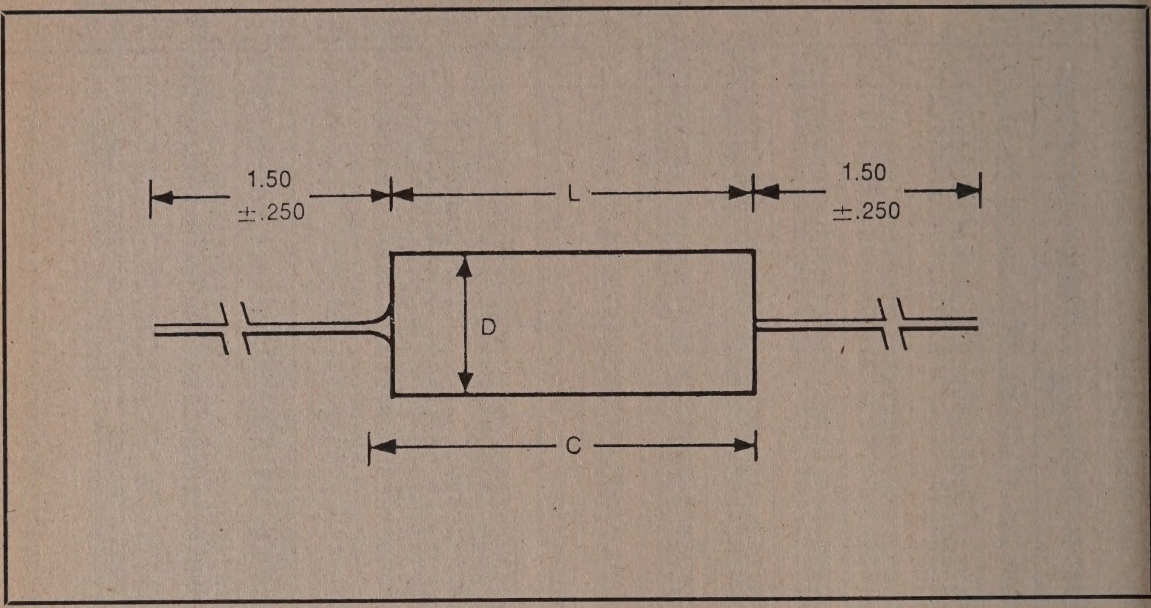
MIL-C-39006/9C STYLE CLR65 CAPACITORS (CONT'D)

ated /DC†	Cap., μF	Tol. ±%	MIL Number M39006/09-					Case Size*	Max. DC Leakage		Max. Dissipation Factor %	De-rated VDC§	Surge VDC†	Max. Ohms	Capacitance Change at		
			Failure Rate Level (%/1000 hr.)														
			L (2)	M (1)	P (.1)	R (.01)	S (.001)		μA‡	μA#					−55° C %	+85° C %	+125° C %
50	5	5	6111	6316	6521	6726	6931	T1	1	2	3.4	30	57.5	400	−16	+5	+6
50	10	20	6112	6317	6522	6727	6932	T1	1	2	6.0	30	57.5	250	−24	+8	+9
50	10	10	6113	6318	6523	6728	6933	T1	1	2	6.0	30	57.5	250	−24	+8	+9
50	10	5	6114	6319	6524	6729	6934	T1	1	2	6.0	30	57.5	250	−24	+8	+9
50	25	20	6115	6320	6525	6730	6935	T2	1	5	11.2	30	57.5	95	−20	+10.5	+12
50	25	10	6116	6321	6526	6731	6936	T2	1	5	11.2	30	57.5	95	−20	+10.5	+12
50	25	5	6117	6322	6527	6732	6937	T2	1	5	11.2	30	57.5	95	−20	+10.5	+12
50	47	20	6118	6323	6528	6733	6938	T2	1	9	21.4	30	57.5	70	−28	+13	+15
50	47	10	6119	6324	6529	6734	6939	T2	1	9	21.4	30	57.5	70	−28	+13	+15
50	47	5	6120	6325	6530	6735	6940	T2	1	9	21.4	30	57.5	70	−28	+13	+15
50	60	20	6121	6326	6531	6736	6941	T3	2	12	13.6	30	57.5	45	−16	+10.5	+12
50	60	10	6122	6327	6532	6737	6942	T3	2	12	13.6	30	57.5	45	−16	+10.5	+12
50	60	5	6123	6328	6533	6738	6943	T3	2	12	13.6	30	57.5	45	−16	+10.5	+12
50	82	20	6124	6329	6534	6739	6944	T3	2	16	24.9	30	57.5	45	−32	+13	+15
50	82	10	6125	6330	6535	6740	6945	T3	2	16	24.9	30	57.5	45	−32	+13	+15
50	82	5	6126	6331	6536	6741	6946	T3	2	16	24.9	30	57.5	45	−32	+13	+15
50	160	20	6127	6332	6537	6742	6947	T4	8	32	25.7	30	57.5	27	−50	+25	+25
50	160	10	6128	6333	6538	6743	6948	T4	8	32	25.7	30	57.5	27	−50	+25	+25
60	4	20	6129	6334	6539	6744	6949	T1	1	2	3.0	40	69.0	550	−16	+5	+6
60	4	10	6130	6335	6540	6745	6950	T1	1	2	3.0	40	69.0	550	−16	+5	+6
60	4	5	6131	6336	6541	6746	6951	T1	1	2	3.0	40	69.0	550	−16	+5	+6
60	8.2	20	6132	6337	6542	6747	6952	T1	1	2	5.0	40	69.0	275	−24	+8	+9
60	8.2	10	6133	6338	6543	6748	6953	T1	1	2	5.0	40	69.0	275	−24	+8	+9
60	8.2	5	6134	6339	6544	6749	6954	T1	1	2	5.0	40	69.0	275	−24	+8	+9
60	20	20	6135	6340	6545	6750	6955	T2	1	5	7.6	40	69.0	105	−16	+10.5	+12
60	20	10	6136	6341	6546	6751	6956	T2	1	5	7.6	40	69.0	105	−16	+10.5	+12
60	20	5	6137	6342	6547	6752	6957	T2	1	5	7.6	40	69.0	105	−16	+10.5	+12
60	39	20	6138	6343	6548	6753	6958	T2	1	9	20.7	40	69.0	90	−28	+10.5	+12
60	39	10	6139	6344	6549	6754	6959	T2	1	9	20.7	40	69.0	90	−28	+10.5	+12
60	39	5	6140	6345	6550	6755	6960	T2	1	9	20.7	40	69.0	90	−28	+10.5	+12
60	50	20	6141	6346	6551	6756	6961	T3	2	12	15.3	40	69.0	50	−16	+10.5	+12
60	50	10	6142	6347	6552	6757	6962	T3	2	12	15.3	40	69.0	50	−16	+10.5	+12
60	50	5	6143	6348	6553	6758	6963	T3	2	12	15.3	40	69.0	50	−16	+10.5	+12
60	68	20	6144	6349	6554	6759	6964	T3	2	16	30.7	40	69.0	50	−32	+10.5	+12
60	68	10	6145	6350	6555	6760	6965	T3	2	16	30.7	40	69.0	50	−32	+10.5	+12
60	68	5	6146	6351	6556	6761	6966	T3	2	16	30.7	40	69.0	50	−32	+10.5	+12
60	140	20	6147	6352	6557	6762	6967	T4	8	32	25.7	40	69.0	28	−40	+20	+20
60	140	10	6148	6353	6558	6763	6968	T4	8	32	25.7	40	69.0	28	−40	+20	+20
75	3.5	20	6149	6354	6559	6764	6969	T1	1	2	2.5	50	86.2	650	−16	+5	+6
75	3.5	10	6150	6355	6560	6765	6970	T1	1	2	2.5	50	86.2	650	−16	+5	+6
75	3.5	5	6151	6356	6561	6766	6971	T1	1	2	2.5	50	86.2	650	−16	+5	+6
75	6.8	20	6152	6357	6562	6767	6972	T1	1	2	4.1	50	86.2	300	−20	+8	+9
75	6.8	10	6153	6358	6563	6768	6973	T1	1	2	4.1	50	86.2	300	−20	+8	+9
75	6.8	5	6154	6359	6564	6769	6974	T1	1	2	4.1	50	86.2	300	−20	+8	+9
75	15	20	6155	6360	6565	6770	6975	T2	1	5	7.5	50	86.2	150	−16	+8	+9
75	15	10	6156	6361	6566	6771	6976	T2	1	5	7.5	50	86.2	150	−16	+8	+9
75	15	5	6157	6362	6567	6772	6977	T2	1	5	7.5	50	86.2	150	−16	+8	+9
75	33	20	6158	6363	6568	6773	6978	T2	1	10	17.5	50	86.2	90	−24	+10.5	+15
75	33	10	6159	6364	6569	6774	6979	T2	1	10	17.5	50	86.2	90	−24	+10.5	+15
75	33	5	6160	6365	6570	6775	6980	T2	1	10	17.5	50	86.2	90	−24	+10.5	+15
75	40	20	6161	6366	6571	6776	6981	T3	2	12	15.2	50	86.2	60	−16	+10.5	+12
75	40	10	6162	6367	6572	6777	6982	T3	2	12	15.2	50	86.2	60	−16	+10.5	+12
75	40	5	6163	6368	6573	6778	6983	T3	2	12	15.2	50	86.2	60	−16	+10.5	+12
75	56	20	6164	6369	6574	6779	6984	T3	2	17	26.0	50	86.2	60	−28	+10.5	+15
75	56	10	6165	6370	6575	6780	6985	T3	2	17	26.0	50	86.2	60	−28	+10.5	+15
75	56	5	6166	6371	6576	6781	6986	T3	2	17	26.0	50	86.2	60	−28	+10.5	+15
75	110	20	6167	6372	6577	6782	6987	T4	9	36	25.7	50	86.2	29	−35	+20	+20
75	110	10	6168	6373	6578	6783	6988	T4	9	36	25.7	50	86.2	29	−35	+20	+20
100	2.5	20	6169	6374	6579	6784	6989	T1	1	2	5.0	65	115	950	−16	+7	+8
100	2.5	10	6170	6375	6580	6785	6990	T1	1	2	5.0	65	115	950	−16	+7	+8
100	2.5	5	6171	6376	6581	6786	6991	T1	1	2	5.0	65	115	950	−16	+7	+8
100	4.7	20	6172	6377	6582	6787	6992	T1	1	2	3.6	65	115	500	−16	+7	+8
100	4.7	10	6173	6378	6583	6788	6993	T1	1	2	3.6	65	115	500	−16	+7	+8
100	4.7	5	6174	6379	6584	6789	6994	T1	1	2	3.6	65	115	500	−16	+7	+8
100	11	20	6175	6380	6585	6790	6995	T2	1	4	5.0	65	115	200	−16	+7	+8
100	11	10	6176	6381	6586	6791	6996	T2	1	4	5.0	65	115	200	−16	+7	+8
100	11	5	6177	6382	6587	6792	6997	T2	1	4	5.0	65	115	200	−16	+7	+8
100	22	20	6178	6383	6588	6793	6998	T2	1	9	11.8	65	115	100	−16	+7	+8
100	22	10	6179	6384	6589	6794	6999	T2	1	9	11.8	65	115	100	−16	+7	+8
100	22	5	6180	6385	6590	6795	7000	T2	1	9	11.8	65	115	100	−16	+7	+8
100	30	20	6181	6386	6591	6796	7001	T3	2	12	9.1	65	115	80	−16	+7	+8
100	30	10	6182	6387	6592	6797	7002	T3	2	12	9.1	65	115	80	−16	+7	+8
100	30	5	6183	6388	6593	6798	7003	T3	2	12	9.1	65	115	80	−16	+7	+8
100	43	20	6184	6389	6594	6799	7004	T3	2	17	19.7	65	115	70	−20	+7	+8
100	43	10	6185	6390	6595	6800	7005	T3	2	17	19.7	65	115	70	−20	+7	+8
100	43	5	6186	6391	6596	6801	7006	T3	2	17	19.7	65	115	70	−20	+7	+8
100	86	20	6187	6392	6597	6802	7007	T4	9	36	20.7	65	115	30	−25	+15	+15
100	86	10	6188	6393	6598	6803	7008	T4	9	36	20.7	65	115	30	−25	+15	+15
125	1.7	20	6189	6394	6599	6804	7009	T1	1	2	7.0	85	144	1250	−16	+7	+8
125	1.7	10	6190	6395	6600	6805	7010	T1	1	2	7.0	85	144	1250	−16	+7	+8
125	1.7	5	6191	6396	6601	6806	7011	T1	1	2	7.0	85	144	1250	−16	+7	+8
125	3.6	20	6192	6397	6602	6807	7012	T1	1	2	4.1	85	144	600	−16	+7	+8
125	3.6	10	6193	6398	6603	6808	7013	T1	1	2	4.1	85	144	600	−16	+7	+8
125	3.6	5	6194	6399	6604	6809	7014	T1	1	2	4.1	85	144	600	−16	+7	+8
125	9	20	6195	6400	6605	6810	7015	T2	1	5	10.2	85	144	240	−16	+7	+8
125	9	10	6196	6401	6606	6811	7016	T2	1	5	10.2	85	144	240	−16	+7	+8
125	9	5	6197	6402	6607	6812	7017	T2	1	5	10.2	85	144	240	−16	+7	+8
125	14	20	6198	6403	6608	6813	7018	T2	1	7	12.7	85	144	167	−16	+7	+8
125	14	10	6199	6404	6609	6814	7019	T2	1	7	12.7	85	144	167	−16	+7	+8
125	14	5	6200	6405	6610	6815	7020	T2	1	7	12.7	85	144	167	−16	+7	+8
125	18	20	6201	6406	6611	6816	7021	T3	2	9	15.0	85	144	129	−16	+7	+8
125	18	10	6202	6407	6612	6817	7022	T3	2	9	15.0	85	144	129	−16	+7	+8
125	18	5	6203	6408	6613	6818	7023	T3	2	9	15.0	85	144	129	−16	+7	+8
125	25	20	6204	6409	6614	6819	7024	T3	2	13	19.0	85	144	93	−16	+7	+8
125	25	10	6205	6410	6615	6820	7025	T3	2	13	19.0	85	144	93	−16	+7	+8
125	25	5	7026	7029	7032	7035	7038	T3	2	13	19.0	85	144	93	−16	+7	+8
125	56	20	7027	7030	7033	7036	7039	T4	10	40	17.5	85	144	32	−25	+15	+15
125	56	10	7028	7035	7034	7037	7040	T4	10	40	17.5	85	144	32	−25	+15	+15

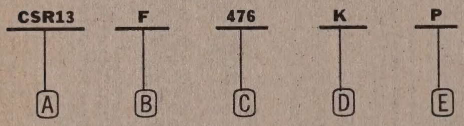
t +85° C. ‡At +25° C. §At +125° C. #At +85° C and +125° C.

***SEE FIRST PAGE OF CLR65 LISTING FOR CASE SIZES**

TYPE CSR13 TANTALUM CAPACITORS TO MIL-C-39003A



MILITARY CODING SYSTEM



Ⓐ **Style, CSR13:** Established reliability sintered tantalum anode solid electrolyte capacitor. Insulated case only.

Ⓑ Working voltage (−55° to +85° C).

B=6	**F**=35
C=10	**G**=50
D=15	**H**=75
E=20	**J**=100

Ⓒ **Capacitance:** Nominal capacitance in μF. First two digits are significant figure, third figure is number of zeros to follow. Example, 476 means 47 μF; 475 means 4.7 μF.

Ⓓ Tolerance: **K**= ±10%.
M= ±20%

Ⓔ Failure Rate Level per 1000 Hours: **L**=2%; **M**=1%; **P**= 0.1%; **R**=0.01%; **S**= 0.001%.

†CASE SIZES

Code	Dimensions, Inches: C Max.	D +0.016 −0.015	L ±0.031	Lead Diameter +0.005 −0.001	Approx. Weight in Grams
A	0.422	0.135	0.286	0.020	0.7
B	0.610	0.185	0.474	0.020	1.6
C	0.822	0.289	0.686	0.025	4.9
D	0.922	0.351	0.786	0.025	8.8

Note: Dash numbers -2001 thru -3193 of this specification shall unilaterally supersede and be acceptable alternates for dash number -0001 thru -1045 of MIL-C-39003/1 for units of equivalent capacitance, capacitance tolerance, voltage rating, failure rate level an case size. Also available: 1, 1.5, 2.2, 3.3 and 4.7 μF at 35 VDC in CS12/CS13 (MIL-C-26655B) style. All capacitances and voltages als available as CS-13 (MIL-C-26655).

CAPACITOR CHARACTERISTICS

NCI Type*	Rated VDC	Cap., μF	Tol., ± %	DC Leakage at +25° C μA	DC Leakage at +85° C μA	DC Leakage at +125° C μA	Dissipation Factor at −55° C +25° C %	Dissipation Factor at +85° C +125° C %	Case Size†	Dash Number, Failure Rate Level per 1000 hrs.: L (2%)	M (1%)	P (.1%)	R (.01%)	S (.001%
CSR13B565K	6	5.6	10	.5	6	7.5	4	4	A	2001	2241	2481	2721	2961
CSR13B685K	6	6.8	10	.5	6	7.5	6	6	A	2002	2242	2482	2722	2962
CSR13B685M	6	6.8	20	.5	6	7.5	6	6	A	2003	2243	2483	2723	2963
CSR13B476K	6	47.0	10	3.0	24	30.0	6	6	B	2004	2244	2484	2724	2964
CSR13B476M	6	47.0	20	3.0	24	30.0	6	6	B	2005	2245	2485	2725	2965
CSR13B566K	6	56.0	10	3.0	24	30.0	6	6	B	2006	2246	2486	2726	2966
CSR13B157K	6	150.0	10	9.0	90	113.0	8	8	C	2007	2247	2487	2727	2967
CSR13B157M	6	150.0	20	9.0	90	113.0	8	8	C	2008	2248	2488	2728	2968
CSR13B187K	6	180.0	10	11.0	110	138.0	8	8	C	2009	2249	2489	2729	2969
CSR13B277K	6	270.0	10	13.0	130	163.0	8	8	D	2010	2250	2490	2730	2970
CSR13B337K	6	330.0	10	15.0	150	188.0	8	8	D	2011	2251	2491	2731	2971
CSR13B337M	6	330.0	20	15.0	150	188.0	8	8	D	2012	2252	2492	2732	2972
CSR13C395K	10	3.9	10	.6	6	7.5	4	4	A	2013	2253	2493	2733	2973
CSR13C475K	10	4.7	10	.7	7	8.6	4	4	A	2014	2254	2494	2734	2974
CSR13C475M	10	4.7	20	.7	7	8.8	4	4	A	2015	2255	2495	2735	2975
CSR13C276K	10	27.0	10	4.0	40	50.0	6	6	B	2016	2256	2496	2736	2976
CSR13C336K	10	33.0	10	5.0	50	63.0	6	6	B	2017	2257	2497	2737	2977
CSR13C336M	10	33.0	20	5.0	50	63.0	6	6	B	2018	2258	2498	2738	2978

*Add suffix for failure rate level (CSR13B565K**L**).

TYPE CSR13 CAPACITORS CONTINUED ON NEXT PAGE

TYPE CSR13 TANTALUM CAPACITORS (CONT'D)

NCI Type*	Rated VDC	Cap., µF	Tol., ± %	DC Leakage at +25° C µA	DC Leakage at +85° C µA	DC Leakage at +125° C µA	Dissipation Factor at −55° C +25° C %	Dissipation Factor at +85° C +125° C %	Case Size†	Dash Number, Failure Rate Level per 1000 hrs. L (2%)	M (1%)	P (.1%)	R (.01%)	S (.001%)
SR13C396K	10	39.0	10	5.0	50	63.0	6	6	B	2019	2259	2499	2739	2979
SR13C826K	10	82.0	10	8.0	80	100.0	6	6	C	2020	2260	2500	2740	2980
SR13C107K	10	100.0	10	10.0	100	125.0	8	8	C	2021	2261	2501	2741	2981
SR13C107M	10	100.0	20	10.0	100	125.0	8	8	C	2022	2262	2502	2742	2982
SR13C127K	10	120.0	10	12.0	120	150.0	8	8	C	2023	2263	2503	2743	2983
SR13C187K	10	180.0	10	18.0	180	226.0	8	8	D	2024	2264	2504	2744	2984
SR13C227K	10	220.0	10	20.0	200	250.0	8	8	D	2025	2265	2505	2745	2985
SR13C227M	10	220.0	20	20.0	200	250.0	8	8	D	2026	2266	2506	2746	2986
SR13D275K	15	2.7	10	.6	6	7.5	4	4	A	2027	2267	2507	2747	2987
SR13D335K	15	3.3	10	.8	8	10.0	4	4	A	2028	2268	2508	2748	2988
SR13D335M	15	3.3	20	.8	8	10.0	4	4	A	2029	2269	2509	2749	2989
SR13D186K	15	18.0	10	3.5	35	44.0	6	6	B	2030	2270	2510	2750	2990
SR13D226K	15	22.0	10	4.0	40	50.0	6	6	B	2031	2271	2511	2751	2991
SR13D226M	15	22.0	20	4.0	40	50.0	6	6	B	2032	2272	2512	2752	2992
SR13D566K	15	56.0	10	8.0	80	100.0	6	6	C	2033	2273	2513	2753	2993
SR13D686K	15	68.0	10	10.0	100	125.0	6	6	C	2034	2274	2514	2754	2994
SR13D686M	15	68.0	20	10.0	100	125.0	6	6	C	2035	2275	2515	2755	2995
SR13D127K	15	120.0	10	18.0	180	226.0	8	8	D	2036	2276	2516	2756	2996
SR13D157K	15	150.0	10	20.0	200	250.0	8	8	D	2037	2277	2517	2757	2997
SR13D157M	15	150.0	20	20.0	200	250.0	8	8	D	2038	2278	2518	2758	2998
SR13E125K	20	1.2	10	.6	6	7.5	4	4	A	2039	2279	2519	2759	2999
SR13E155K	20	1.5	10	.6	6	7.5	4	4	A	2040	2280	2520	2760	3000
SR13E155M	20	1.5	20	.6	6	7.5	4	4	A	2041	2281	2521	2761	3001
SR13E185K	20	1.8	10	.6	6	7.5	4	4	A	2042	2282	2522	2762	3002
SR13E225K	20	2.2	10	.8	8	10.0	4	4	A	2043	2283	2523	2763	3003
SR13E225M	20	2.2	20	.8	8	10.0	4	4	A	2044	2284	2524	2764	3004
SR13E825K	20	8.2	10	2.0	20	25.0	6	6	B	2045	2285	2525	2765	3005
SR13E106K	20	10.0	10	3.0	30	38.0	6	6	B	2046	2286	2526	2766	3006
SR13E106M	20	10.0	20	3.0	30	38.0	6	6	B	2047	2287	2527	2767	3007
SR13E126K	20	12.0	10	3.5	35	44.0	6	6	B	2048	2288	2528	2768	3008
SR13E156K	20	15.0	10	4.0	40	50.0	6	6	B	2049	2289	2529	2769	3009
SR13E156M	20	15.0	20	4.0	40	50.0	6	6	B	2050	2290	2530	2770	3010
SR13E276K	20	27.0	10	5.0	50	63.0	6	6	C	2051	2291	2531	2771	3011
SR13E336K	20	33.0	10	7.0	70	88.0	6	6	C	2052	2292	2532	2772	3012
SR13E336M	20	33.0	20	7.0	70	88.0	6	6	C	2053	2293	2533	2773	3013
SR13E396K	20	39.0	10	8.0	80	100.0	6	6	C	2054	2294	2534	2774	3014
SR13E476K	20	47.0	10	9.0	90	113.0	6	6	C	2055	2295	2535	2775	3015
SR13E476M	20	47.0	20	9.0	90	113.0	6	6	C	2056	2296	2536	2776	3016
SR13E566K	20	56.0	10	11.0	110	138.0	6	6	D	2057	2297	2537	2777	3017
SR13E686K	20	68.0	10	14.0	140	175.0	6	6	D	2058	2298	2538	2778	3018
SR13E686M	20	68.0	20	14.0	140	175.0	6	6	D	2059	2299	2539	2779	3019
SR13E828K	20	82.0	10	16.0	160	200.0	6	6	D	2060	2300	2540	2780	3020
SR13E107K	20	100.0	10	20.0	200	250.0	8	8	D	2061	2301	2541	2781	3021
SR13E107M	20	100.0	20	20.0	200	250.0	8	8	D	2062	2302	2542	2782	3022
SR13F565K	35	5.6	10	2.5	25	32.0	4	4	B	2063	2303	2543	2783	3023
SR13F685K	35	6.8	10	3.0	30	38.0	6	6	B	2064	2304	2544	2784	3024
SR13F685M	35	6.8	20	3.0	30	38.0	6	6	B	2065	2305	2545	2785	3025
SR13F226K	35	22.0	10	8.0	80	100.0	6	6	C	2066	2306	2546	2786	3026
SR13F226M	35	22.0	20	8.0	80	100.0	6	6	C	2067	2307	2547	2787	3027
SR13F276K	35	27.0	10	9.0	90	113.0	6	6	D	2068	2308	2548	2788	3028
SR13F336K	35	33.0	10	11.0	110	138.0	6	6	D	2069	2309	2549	2789	3029
SR13F336M	35	33.0	20	11.0	110	138.0	6	6	D	2070	2310	2550	2790	3030
SR13F396K	35	39.0	10	14.0	140	175.0	6	6	D	2071	2311	2551	2791	3031
SR13F476K	35	47.0	10	16.0	160	200.0	6	6	D	2072	2312	2552	2792	3032
SR13F476M	35	47.0	20	16.0	160	200.0	6	6	D	2073	2313	2553	2793	3033
SR13G472K	50	.0047	10	.5	5	6.3	2	4	A	2074	2314	2554	2794	3034
SR13G472M	50	.0047	20	.5	5	6.3	2	4	A	2075	2315	2555	2795	3035
SR13G562K	50	.0056	10	.5	5	6.3	2	4	A	2076	2316	2556	2796	3036
SR13G682K	50	.0068	10	.5	5	6.3	2	4	A	2077	2317	2557	2797	3037
SR13G682M	50	.0068	20	.5	5	6.3	2	4	A	2078	2318	2558	2798	3038
SR13G822K	50	.0082	10	.5	5	6.3	2	4	A	2079	2319	2559	2799	3039
SR13G103K	50	.01	10	.5	5	6.3	2	4	A	2080	2320	2560	2800	3040
SR13G103M	50	.01	20	.5	5	6.3	2	4	A	2081	2321	2561	2801	3041
SR13G123K	50	.012	10	.5	5	6.3	2	4	A	2082	2322	2562	2802	3042
SR13G153K	50	.015	10	.5	5	6.3	2	4	A	2083	2323	2563	2803	3043
SR13G153M	50	.015	20	.5	5	6.3	2	4	A	2084	2324	2564	2804	3044
SR13G183K	50	.018	10	.5	5	6.3	2	4	A	2085	2325	2565	2805	3045
SR13G223K	50	.022	10	.5	5	6.3	2	4	A	2086	2326	2566	2806	3046
SR13G223M	50	.022	20	.5	5	6.3	2	4	A	2087	2327	2567	2807	3047
SR13G273K	50	.027	10	.5	5	6.3	2	4	A	2088	2328	2568	2808	3048
SR13G333K	50	.033	10	.5	5	6.3	2	4	A	2089	2329	2569	2809	3049
SR13G333M	50	.033	20	.5	5	6.3	2	4	A	2090	2330	2570	2810	3050
SR13G393K	50	.039	10	.5	5	6.3	2	4	A	2091	2331	2571	2811	3051
SR13G473K	50	.047	10	.5	5	6.3	2	4	A	2092	2332	2572	2812	3052
SR13G473M	50	.047	20	.5	5	6.3	2	4	A	2093	2333	2573	2813	3053
SR13G563K	50	.056	10	.5	5	6.3	2	4	A	2094	2334	2574	2814	3054
SR13G683K	50	.068	10	.5	5	6.3	2	4	A	2095	2335	2575	2815	3055
SR13G683M	50	.068	20	.5	5	6.3	2	4	A	2096	2336	2576	2816	3056
SR13G823K	50	.082	10	.5	5	6.3	2	4	A	2097	2337	2577	2817	3057
SR13G104K	50	.1	10	.5	5	6.3	2	4	A	2098	2338	2578	2818	3058
SR13G104M	50	.1	20	.5	5	6.3	2	4	A	2099	2339	2579	2819	3059
SR13G124K	50	.12	10	.5	5	6.3	2	4	A	2100	2340	2580	2820	3060
SR13G154K	50	.15	10	.5	5	6.3	2	4	A	2101	2341	2581	2821	3061
SR13G154M	50	.15	20	.5	5	6.3	2	4	A	2102	2342	2582	2822	3062
SR13G184K	50	.18	10	.5	5	6.3	2	4	A	2103	2343	2583	2823	3063
SR13G224K	50	.22	10	.5	5	6.3	2	4	A	2104	2344	2584	2824	3064
SR13G224M	50	.22	20	.5	5	6.3	2	4	A	2105	2345	2585	2825	3065
SR13G274K	50	.27	10	.5	5	6.3	2	4	A	2106	2346	2586	2826	3066
SR13G334K	50	.33	10	.5	5	6.3	2	4	A	2107	2347	2587	2827	3067
SR13G334M	50	.33	20	.5	5	6.3	2	4	A	2108	2348	2588	2828	3068

dd suffix for failure rate level (CSR13C396KL).

†SEE FIRST PAGE OF CSR13 LISTING FOR CASE SIZES

TYPE CSR13 CAPACITORS CONTINUED ON NEXT PAGE

TYPE CSR13 TANTALUM CAPACITORS (CONT'D)

NCI Type*	Rated VDC	Cap., µF	Tol., ± %	DC Leakage at			Dissipation Factor at		Case Size†	Dash Number Failure Rate Level per 1000 hrs.				
				+25° C µA	+85° C µA	+125° C µA	−55° C +25° C %	+85° C +125° C %		L (2%)	M (1%)	P (.1%)	R (.01%)	S (.001%)
CSR13G394K	50	.39	10	.5	5	6.3	2	4	A	2109	2349	2589	2829	3069
CSR13G474K	50	.47	10	.5	5	6.3	2	4	A	2110	2350	2590	2830	3070
CSR13G474M	50	.47	20	.5	5	6.3	2	4	A	2111	2351	2591	2831	3071
CSR13G564K	50	.56	10	.5	5	6.3	2	4	A	2112	2352	2592	2832	3072
CSR13G684K	50	.68	10	.5	5	6.3	2	4	A	2113	2353	2593	2833	3073
CSR13G684M	50	.68	20	.5	5	6.3	2	4	A	2114	2354	2594	2834	3074
CSR13G824K	50	.82	10	.5	5	6.3	2	4	A	2115	2355	2595	2835	3075
CSR13G105K	50	1.0	10	.8	8	10.0	2	4	A	2116	2356	2596	2836	3076
CSR13G105M	50	1.0	20	.8	8	10.0	2	4	A	2117	2357	2597	2837	3077
CSR13G125K	50	1.2	10	.9	9	11.0	4	4	B	2118	2358	2598	2838	3078
CSR13G155K	50	1.5	10	1.2	12	15.0	4	4	B	2119	2359	2599	2839	3079
CSR13G155M	50	1.5	20	1.2	12	15.0	4	4	B	2120	2360	2600	2840	3080
CSR13G185K	50	1.8	10	1.4	14	18.0	4	4	B	2121	2361	2601	2841	3081
CSR13G225K	50	2.2	10	1.7	17	22.0	4	4	B	2122	2362	2602	2842	3082
CSR13G225M	50	2.2	20	1.7	17	22.0	4	4	B	2123	2363	2603	2843	3083
CSR13G275K	50	2.7	10	2.0	20	25.0	4	4	B	2124	2364	2604	2844	3084
CSR13G335K	50	3.3	10	2.5	25	32.0	4	4	B	2125	2365	2605	2845	3085
CSR13G335M	50	3.3	20	2.5	25	32.0	4	4	B	2126	2366	2606	2846	3086
CSR13G395K	50	3.9	10	3.0	30	38.0	4	4	B	2127	2367	2607	2847	3087
CSR13G475K	50	4.7	10	3.5	35	44.0	4	4	B	2128	2368	2608	2848	3088
CSR13G475M	50	4.7	20	3.5	35	44.0	4	4	B	2129	2369	2609	2849	3089
CSR13G565K	50	5.6	10	4.5	45	56.0	4	4	C	2130	2370	2610	2850	3090
CSR13G685K	50	6.8	10	4.5	45	56.0	6	6	C	2131	2371	2611	2851	3091
CSR13G685M	50	6.8	20	4.5	45	56.0	6	6	C	2132	2372	2612	2852	3092
CSR13G825K	50	8.2	10	5.0	50	63.0	6	6	C	2133	2373	2613	2853	3093
CSR13G106K	50	10.0	10	5.0	50	63.0	6	6	C	2134	2374	2614	2854	3094
CSR13G106M	50	10.0	20	5.0	50	63.0	6	6	C	2135	2375	2615	2855	3095
CSR13G126K	50	12.0	10	6.0	60	75.0	6	6	C	2136	2376	2616	2856	3096
CSR13G156K	50	15.0	10	8.0	80	100.0	6	6	C	2137	2377	2617	2857	3097
CSR13G156M	50	15.0	20	8.0	80	100.0	6	6	C	2138	2378	2618	2858	3098
CSR13G186K	50	18.0	10	9.0	90	113.0	6	6	C	2139	2379	2619	2859	3099
CSR13G226K	50	22.0	10	11.0	110	138.0	6	6	D	2140	2380	2620	2860	3100
CSR13G226M	50	22.0	10	11.0	110	138.0	6	6	D	2141	2381	2621	2861	3101
CSR13H104K	75	.1	10	.5	5	6.3	2	4	A	2142	2382	2622	2862	3102
CSR13H104M	75	.1	20	.5	5	6.3	2	4	A	2143	2383	2623	2863	3103
CSR13H124K	75	.12	10	.5	5	6.3	2	4	A	2144	2384	2624	2864	3104
CSR13H154K	75	.15	10	.5	5	6.3	2	4	A	2145	2385	2625	2865	3105
CSR13H154M	75	.15	20	.5	5	6.3	2	4	A	2146	2386	2626	2866	3106
CSR13H184K	75	.18	10	.5	5	6.3	2	4	A	2147	2387	2627	2867	3107
CSR13H224K	75	.22	10	.5	5	6.3	2	4	A	2148	2388	2628	2868	3108
CSR13H224M	75	.22	20	.5	5	6.3	2	4	A	2149	2389	2829	2869	3109
CSR13H274K	75	.27	10	.5	5	6.3	2	4	A	2150	2390	2630	2870	3110
CSR13H334K	75	.33	10	.5	5	6.3	2	4	A	2151	2391	2631	2871	3111
CSR13H334M	75	.33	20	.5	5	6.3	2	4	A	2152	2392	2632	2872	3112
CSR13H394K	75	.39	10	.5	5	6.3	2	4	A	2153	2393	2633	2873	3113
CSR13H474K	75	.47	10	.5	5	6.3	2	4	A	2154	2394	2634	2874	3114
CSR13H474M	75	.47	20	.5	5	6.3	2	4	A	2155	2395	2635	2875	3115
CSR13H564K	75	.56	10	.5	5	6.3	2	4	A	2156	2396	2636	2876	3116
CSR13H684K	75	.68	10	.5	5	6.3	2	4	A	2157	2397	2637	2877	3117
CSR13H684M	75	.68	20	.5	5	6.3	2	4	A	2158	2398	2638	2878	3118
CSR13H824K	75	.82	10	.5	5	6.3	2	4	B	2159	2399	2639	2879	3119
CSR13H105K	75	1.0	10	.5	5	6.3	2	4	B	2160	2400	2640	2880	3120
CSR13H105M	75	1.0	20	.5	5	6.3	4	4	B	2161	2401	2641	2881	3121
CSR13H125K	75	1.2	10	.5	5	6.3	4	4	B	2162	2402	2642	2882	3122
CSR13H155K	75	1.5	10	1.0	10	13.0	4	4	B	2163	2403	2643	2883	3123
CSR13H155M	75	1.5	20	1.0	10	13.0	4	4	B	2164	2404	2644	2884	3124
CSR13H185K	75	1.8	10	1.0	10	13.0	4	4	B	2165	2405	2645	2885	3125
CSR13H225K	75	2.2	10	1.5	10	19.0	4	4	B	2166	2406	2646	2886	3126
CSR13H225M	75	2.2	20	1.5	15	19.0	4	4	B	2167	2407	2647	2887	3127
CSR13H275K	75	2.7	10	1.5	15	19.0	4	4	B	2168	2408	2648	2888	3128
CSR13H335K	75	3.3	10	2.0	20	25.0	4	4	B	2169	2409	2649	2889	3129
CSR13H335M	75	3.3	20	2.0	20	25.0	4	4	B	2170	2410	2650	2890	3130
CSR13H395K	75	3.9	10	2.0	20	25.0	4	4	B	2171	2411	2651	2891	3131
CSR13H475K	75	4.7	10	6.0	60	75.0	4	4	C	2172	2412	2652	2892	3132
CSR13H475M	75	4.7	20	6.0	60	75.0	4	4	C	2173	2413	2653	2893	3133
CSR13H565K	75	5.6	10	6.0	60	75.0	4	4	C	2174	2414	2654	2894	3134
CSR13H685K	75	6.8	10	10.0	100	125.0	6	6	C	2175	2415	2655	2895	3135
CSR13H685M	75	6.8	20	10.0	100	125.0	6	6	C	2176	2416	2656	2896	3136
CSR13H825K	75	8.2	10	10.0	100	125.0	6	6	C	2177	2417	2657	2897	3137
CSR13H106K	75	10.0	10	10.0	100	125.0	6	6	C	2178	2418	2658	2898	3138
CSR13H106M	75	10.0	20	10.0	100	125.0	6	6	C	2179	2419	2659	2899	3139
CSR13H126K	75	12.0	10	10.0	100	125.0	6	6	D	2180	2420	2660	2900	3140
CSR13H156K	75	15.0	10	14.0	140	175.0	6	6	D	2181	2421	2661	2901	3141
CSR13H156M	75	15.0	20	14.0	140	175.0	6	6	D	2182	2422	2662	2902	3142
CSR13J472K	100	.0047	10	.5	5	6.3	2	4	A	2183	2423	2663	2903	3143
CSR13J472M	100	.0047	20	.5	5	6.3	2	4	A	2184	2424	2664	2904	3144
CSR13J582K	100	.0058	10	.5	5	6.3	2	4	A	2185	2425	2665	2905	3145
CSR13J682K	100	.0068	10	.5	5	6.3	2	4	A	2186	2426	2666	2906	3146
CSR13J562M	100	.0056	20	.5	5	6.3	2	4	A	2187	2427	2667	2907	3147
CSR13J822K	100	.0082	10	.5	5	6.3	2	4	A	2188	2428	2668	2908	3148
CSR13J103K	100	.01	10	.5	5	6.3	2	4	A	2189	2429	2669	2909	3149
CSR13J103M	100	.01	20	.5	5	6.3	2	4	A	2190	2430	2670	2910	3150
CSR13J123K	100	.012	10	.5	5	6.3	2	4	A	2191	2431	2671	2911	3151
CSR13J153K	100	.015	10	.5	5	6.3	2	4	A	2192	2432	2672	2912	3152
CSR13J153M	100	.015	20	.5	5	6.3	2	4	A	2193	2433	2673	2913	3153
CSR13J183K	100	.018	10	.5	5	6.3	2	4	A	2194	2434	2674	2914	3154
CSR13J223K	100	.022	10	.5	5	6.3	2	4	A	2195	2435	2675	2915	3155
CSR13J223M	100	.022	20	.5	5	6.3	2	4	A	2196	2436	2676	2916	3156
CSR13J273K	100	.027	10	.5	5	6.3	2	4	A	2197	2437	2677	2917	3157
CSR13J333K	100	.033	10	.5	5	6.3	2	4	A	2198	2438	2678	2918	3158

*Add suffix for failure rate level (CSR13G394KM).

†SEE FIRST PAGE OF CSR13 LISTING FOR CASE SIZES

TYPE CSR13 CAPACITORS CONTINUED ON NEXT PAGE

TYPE CSR13 TANTALUM CAPACITORS (CONT'D)

NCI Type*	Rated VDC	Cap., µF	Tol., ± %	DC Leakage at +25° C µA	DC Leakage at +85° C µA	DC Leakage at +125° C µA	Dissipation Factor at −55° C +25° C %	Dissipation Factor at +85° C +125° C %	Case Size†	Dash Number, Failure Rate Level per 1000 hrs. L (2%)	M (1%)	P (.1%)	R (.01%)	S (.001%)
CSR13J333M	100	.033	20	.5	5	6.3	2	4	A	2199	2439	2679	2919	3159
CSR13J393K	100	.039	10	.5	5	6.3	2	4	A	2200	2440	2680	2920	3160
CSR13J473K	100	.047	10	.5	5	6.3	2	4	A	2201	2441	2681	2921	3161
CSR13J473M	100	.047	20	.5	5	6.3	2	4	A	2202	2442	2682	2922	3162
CSR13J563K	100	.056	10	.5	5	6.3	2	4	A	2203	2443	2683	2923	3163
CSR13J683K	100	.068	10	.5	5	6.3	2	4	A	2204	2444	2684	2924	3164
CSR13J683M	100	.068	20	.5	5	6.3	2	4	A	2205	2445	2685	2925	3165
CSR13J823K	100	.082	10	.5	5	6.3	2	4	A	2206	2446	2686	2926	3166
CSR13J104K	100	.1	10	.5	5	6.3	2	4	A	2207	2447	2687	2927	3167
CSR13J104M	100	.1	20	.5	5	6.3	2	4	A	2208	2448	2688	2928	3168
CSR13J124K	100	.12	10	.5	5	6.3	2	4	A	2209	2449	2689	2929	3169
CSR13J154K	100	.15	10	.5	5	6.3	2	4	A	2210	2450	2690	2930	3170
CSR13J154M	100	.15	20	.5	5	6.3	2	4	A	2211	2451	2691	2931	3171
CSR13J184K	100	.18	10	.5	5	6.3	2	4	A	2212	2452	2692	2932	3172
CSR13J224K	100	.22	10	.5	5	6.3	2	4	A	2213	2453	2693	2933	3173
CSR13J224M	100	.22	20	.5	5	6.3	2	4	A	2214	2454	2694	2934	3174
CSR13J274K	100	.27	10	.5	5	6.3	2	4	A	2215	2455	2695	2935	3175
CSR13J334K	100	.33	10	.5	5	6.3	2	4	A	2216	2456	2696	2936	3176
CSR13J334M	100	.33	20	.5	5	6.3	2	4	A	2217	2457	2697	2937	3177
CSR13J394K	100	.39	10	.5	5	6.3	2	4	A	2218	2458	2698	2938	3178
CSR13J474K	100	.47	10	.5	5	6.3	2	4	A	2219	2459	2699	2939	3179
CSR13J474M	100	.47	20	.5	5	6.3	2	4	A	2220	2460	2700	2940	3180
CSR13J564K	100	.56	10	.5	5	6.3	2	4	A	2221	2461	2701	2941	3181
CSR13J684K	100	.68	10	.5	5	6.3	2	4	B	2222	2462	2702	2942	3182
CSR13J684M	100	.68	20	.5	5	6.3	2	4	B	2223	2463	2703	2943	3183
CSR13J824K	100	.82	10	.5	5	6.3	2	4	B	2224	2464	2704	2944	3184
CSR13J105K	100	1.0	10	.5	5	6.3	2	4	B	2225	2465	2705	2945	3185
CSR13J105M	100	1.0	20	.5	5	6.3	2	4	B	2226	2466	2706	2946	3186
CSR13J125K	100	1.2	10	.5	5	6.3	4	4	B	2227	2467	2707	2947	3187
CSR13J155K	100	1.5	10	1.0	10	13.0	4	4	B	2228	2468	2708	2948	3188
CSR13J155M	100	1.5	20	1.0	10	13.0	4	4	B	2229	2469	2709	2949	3189
CSR13J185K	100	1.8	10	1.0	10	13.0	4	4	B	2230	2470	2710	2950	3190
CSR13J225K	100	2.2	10	1.5	15	19.0	4	4	B	2231	2471	2711	2951	3191
CSR13J225M	100	2.2	20	1.5	15	19.0	4	4	B	2232	2472	2712	2952	3192
CSR13J275K	100	2.7	10	1.5	15	19.0	4	4	B	2233	2473	2713	2953	3193

*Add suffix for failure rate level (CSR13J333ML).

†SEE FIRST PAGE OF CSR13 LISTING FOR CASE SIZES

OTHER TANTALUM CAPACITORS AVAILABLE FROM NCI

Write for complete information on any of the types listed below.

MIL-C-3965 MILITARY STYLE WET TANTALUM CAPACITORS

Designation	Description	Capacitance Range, µF	Voltage Range, Volts
CL14, CL16	Hermetic seal, screw mount, cylindrical case	7.0–100	20–630
CL17, CL19	Hermetic seal, stud mount, cylindrical case	12–1300	30–630
CL55	Hermetic seal, rectangular module	70–2400	15–150
CL64, CL65	Elastomer seal, axial lead, tubular case	1.7–560	6–125
CL66, CL67	Hermetic seal, axial lead, tubular case	1.7–560	6–125

MIL-C-39006 MILITARY STYLE WET TANTALUM CAPACITORS

CLR65	Elastomer seal, axial lead, tubular case	1.7–1200	6–125
CLR65	Glass-to-metal hermetic seal, axial lead, tubular case	1.7–1200	6–125

MIL-C-39003 MILITARY STYLE SOLID TANTALUM CAPACITORS

CSR09	Miniature hermetic seal, axial leads	.047–18	6–75
CSR13	Standard hermetic case, axial leads	.0047–330	6–100
CSR23	Extended capacitance range, hermetic case, axial leads	1.2–1000	6–50
CSR91	Non-polar, hermetic case, axial leads	.0023–160	6–100

WET ELECTROLYTE SINTERED TANTALUM ANODE CAPACITORS

CNW	Elastomer seal, miniature tubular case, axial leads, 85° C	1.2–470	6–60
GNW	Hermetic seal, standard tubular case, axial leads, 175° C	1.7–2500	6–125
HNW	Elastomer seal, standard tubular case, axial leads, 85° C	1.7–1100	6–125
JNW	Hermetic seal, rectangular module case, spade lugs, 125° C	35–9800	6–150
LNW	Elastomer seal, standard tubular case, axial leads, 125° C	1.7–1100	4–85
XNW	Hermetic seal, cylindrical case, stud or screw mount, 125° C	3.5–1300	20–630
ZNW	Glass-to-tantalum seal, standard tubular case, axial leads, 175° C	1.7–2500	6–125

SOLID ELECTROLYTE SINTERED TANTALUM ANODE CAPACITORS (−55° C TO +125° C)

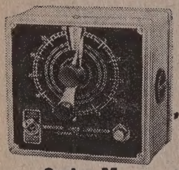
BNS	Hybrid chip tantalum capacitors	0.1–100	4–50
CNS	Miniature Endfilled, tubular metal case, axial leads	.0047–68	2–50
DNS	Dipped case, axial or radial leads	0.1–330	6–50
ENS	Endfilled tubular metal case, axial leads	.0047–330	6–100
FNS	Feed-thru, screw mount	3.9–60	6–75
MNS	Miniature plastic case, cylindrical or rectangular, axial or radial leads	.001–220	2–50
NNS	Non-polar, tubular metal case, radial leads	.0023–160	6–100
PNS	Rectangular plastic case, radial leads	0.1–220	6–50
SNS	Standard hermetic seal, tubular case, axial leads	.0047–330	6–100
TNS	Miniature hermetic seal, tubular metal case, axial leads	.0047–39	4–100
XNS	Extra capacitance, standard hermetic seal, tubular case, axial leads	0.82–1000	6–60

INDUSTRIAL TIMER
A UNIT OF ESTERLINE CORPORATION

Interval Timers

Series PAB

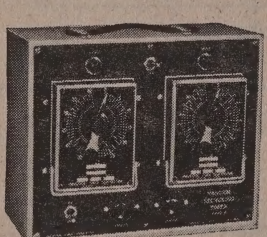
Series P


Series M

Series RS

Series S

Series PAF


Recycling Timer

RECYCLING TIMER

Type A: For use with two timing elements. With elements adjusted, cycles follow in regular sequence, without need for additional adjustment. **Controls:** On/Off; Load Control; Male Load Plug and Pilot Lamps for each element. **Contact Rating:** 20 amps at 115 VAC, non-inductive. **Size:** 11″ x 6⅛″ x 9″. Shpg. Wt., 11 lbs. With carrying strap. **Type B:** Same, but for built-in, tamper-proof applications. **Specify Type A or B.**

Net Each, Lots of*					
1-3	4-5	6-11	12-24	25-49	50-99
$54.50	$51.78	$49.05	$46.33	$43.60	$40.88

AUTOMATIC RESET INTERVAL TIMERS

Dependable timers in enclosed case with positive time cycle adjustments. Energized b momentary contact to close a load circuit for pre-set interval, with automatic reset at en of time cycle. Heavy-duty synchronous motors operate on 115 VAC, 60 Hz. Contact rated 15 amps non-inductive except Series M, 10 amps.

SERIES PAB INSTANTANEOUS RESET TIMERS

Extremely accurate, for demanding process control applications. Heavy steel case, 7⅛ x 5⅛″ x 4¹⁄₁₆″. Two ½″ knockouts provide access to terminal strip. Wt., 6 lbs.

I.T. No.	Max. Time Cycle	Dial Calibration	Net Each, Lots of*					
			1-3	4-5	6-11	12-24	25-49	50-99
PAB-1S	1 second	1/60 second	$55.00	$52.25	$49.50	$46.75	$44.00	$41.25
PAB-3S	3 seconds	1/20 second	55.00	52.25	49.50	46.75	44.00	41.25
PAB-6S	6 seconds	1/10 second	55.00	52.25	49.50	46.75	44.00	41.25
PAB-15S	15 seconds	¼ second	55.00	52.25	49.50	46.75	44.00	41.25
PAB-30S	30 seconds	½ second	55.00	52.25	49.50	46.75	44.00	41.25
PAB-60S	60 seconds	1 second	55.00	52.25	49.50	46.75	44.00	41.25
PAB-3M	3 minutes	3 seconds	55.00	52.25	49.50	46.75	44.00	41.25
PAB-5M	5 minutes	5 seconds	55.00	52.25	49.50	46.75	44.00	41.25
PAB-15M	15 minutes	15 seconds	55.00	52.25	49.50	46.75	44.00	41.25
PAB-30M	30 minutes	30 seconds	55.00	52.25	49.50	46.75	44.00	41.25
PAB-60M	60 minutes	60 seconds	55.00	52.25	49.50	46.75	44.00	41.25
PAB-3H	3 hours	3 minutes	55.00	52.25	49.50	46.75	44.00	41.25

SERIES P REMOTE STARTING TIMERS

Multi-purpose timers with line cord, built-in start button, and two receptacles for loa and remote control circuits. Size, 5″ x 5″ x 3⁹⁄₁₆″. Shipping Weight, 3 lbs.

P-6S	6 seconds	1/10 second	$33.00	$31.35	$29.70	$28.05	$26.40	$24.75
P-4R	15 seconds	¼ second	33.00	31.35	29.70	28.05	26.40	24.75
P-2R	30 seconds	½ second	33.00	31.35	29.70	28.05	26.40	24.75
P-1M	60 seconds	1 second	33.00	31.35	29.70	28.05	26.40	24.75
P-3M	3 minutes	3 seconds	33.00	31.35	29.70	28.05	26.40	24.75
P-5M	5 minutes	5 seconds	33.00	31.35	29.70	28.05	26.40	24.75

SERIES M ECONOMY INTERVAL TIMERS

Same as Series P above, without remote starting provision. Shipping Weight, 3 lbs.

M-1M	60 seconds	1 second	$26.50	$25.18	$23.85	$22.53	$21.20	$19.88

SERIES RS MANUAL RESET INTERVAL TIMERS

Completely enclosed, silent timers with simple knob for setting and elapsed time indica tion. Heavy silver contacts rated 20 amps at 115 VAC, 60 Hz. Color coded leads, 18″ lon Has 3½″ flange; mounts in 2¾″ dia. hole; 2²³⁄₃₂″ d. Shpg. Wt., 2 lbs.

RS-15M	15 minutes	15 seconds	$18.50	$17.58	$16.65	$15.73	$14.80	$13.88
RS-60M	60 minutes	1 minute	18.50	17.58	16.65	15.73	14.80	13.88
RS-3H	3 hours	5 minutes	18.50	17.58	16.65	15.73	14.80	13.88
RS-6H	6 hours	10 minutes	18.50	17.58	16.65	15.73	14.80	13.88
RS-8H	8 hours	15 minutes	18.50	17.58	16.65	15.73	14.80	13.88
RS-12H	12 hours	15 minutes	18.50	17.58	16.65	15.73	14.80	13.88
RS-24H	24 hours	30 minutes	18.50	17.58	16.65	15.73	14.80	13.88

SERIES S MANUAL RESET SIGNALLING TIMERS

Manual reset process timer provides audible signal at end of time interval or time dela Sockets on side for connection of lights, alarms, controlled circuits. Includes line cor Snap contacts rated 10 amps. Size, 5″ x 5″ x 3¾″. Shpg. Wt., 3 lbs.

S-1M	1 minute	1 second	$29.00	$27.55	$26.10	$24.65	$23.20	$21.75
S-5M	5 minutes	5 seconds	29.00	27.55	26.10	24.65	23.20	21.75
S-15M	15 minutes	15 seconds	29.00	27.55	26.10	24.65	23.20	21.75
S-30M	30 minutes	30 seconds	29.00	27.55	26.10	24.65	23.20	21.75
S-1H	1 hour	1 minute	29.00	27.55	26.10	24.65	23.20	21.75
S-3H	3 hours	3 minutes	29.00	27.55	26.10	24.65	23.20	21.75

SERIES SAR AUTOMATIC RESET SIGNALLING TIMERS

Same as Series S above, but with automatic reset to pre-set time cycle. Wt., 3 lbs.

SAR-1M	1 minute	1 second	$39.50	$37.53	$35.55	$33.58	$31.60	$29.63
SAR-5M	5 minutes	5 seconds	39.50	37.53	35.55	33.58	31.60	29.63
SAR-15M	15 minutes	15 seconds	39.50	37.53	35.55	33.58	31.60	29.63
SAR-30M	30 minutes	30 seconds	39.50	37.53	35.55	33.58	31.60	29.63
SAR-1H	1 hour	1 minute	39.50	37.53	35.55	33.58	31.60	29.63
SAR-3H	3 hours	3 minutes	39.50	37.53	35.55	33.58	31.60	29.63

PANEL-MOUNTING INTERVAL TIMERS

Same as timers above, but less case. To order, use Series Prefix as indicated below, fo lowed by appropriate Suffix from tables above to indicate maximum time cycle.

Series Prefix	Panel-Mount Version of Series	Shpg. Wt., Lbs.	Net Each, Lots of*					
			1-3	4-5	6-11	12-24	25-49	50-9
PAF-	PAB automatic reset timer	3½	$47.50	$45.13	$42.75	$40.38	$38.00	$37.
PF-*	P remote starting timer	3	32.50	30.88	29.25	27.63	26.00	24.
MF-	M economy timer	3	26.50	25.18	23.85	22.53	21.20	19.
SAF-	S signalling timer	3	29.00	27.55	26.10	24.65	23.20	21.
SARF-	SAR auto. reset signalling	3	39.50	37.53	35.55	33.58	31.60	29.

*Add Suffix **15S** for 15 second time cycle, **30S** for 30 sec.; others, use Suffix from tabl above; e.g., PAF-**3M** is panel mount version of PAB-3M 3-minute timer.

TANDEM RECYCLING TIMERS

TIMING ELEMENTS (TWO REQUIRED)

I.T. No.	Max. Time Cycle	Dial Calibration	Net Each, Lots of*					
			1-3	4-5	6-11	12-24	25-49	50-9
ET-3S	3 seconds	1/20 second	$44.00	$41.80	$39.60	$37.40	$35.20	$33.0
ET-6S	6 seconds	1/10 second	44.00	41.80	39.60	37.40	35.20	33.0
ET-15S	15 seconds	¼ second	44.00	41.80	39.60	37.40	35.20	33.0
ET-30S	30 seconds	½ second	44.00	41.80	39.60	37.40	35.20	33.0
ET-60S	60 seconds	1 second	44.00	41.80	39.60	37.40	35.20	33.0
ET-3M	3 minutes	3 seconds	44.00	41.80	39.60	37.40	35.20	33.0
ET-5M	5 minutes	5 seconds	44.00	41.80	39.60	37.40	35.20	33.0
ET-15M	15 minutes	15 seconds	44.00	41.80	39.60	37.40	35.20	33.0
ET-30M	30 minutes	30 seconds	44.00	41.80	39.60	37.40	35.20	33.0
ET-60M	60 minutes	60 seconds	44.00	41.80	39.60	37.40	35.20	33.0
ET-3H	3 hours	3 minutes	44.00	41.80	39.60	37.40	35.20	33.0

★LARGER QUANTITY PRICES: FOR QUANTITIES OF 100-249, 30% DISCOUNT OFF UNIT PRICE; 250-499, 35% DISCOUN

INDUSTRIAL TIMER
A UNIT OF ESTERLINE CORPORATION

Delay Timers

AUTOMATIC RESET DELAY TIMERS

For use where a fixed or adjustable delay is required between the closing of one circuit and the closing or opening of another. For 115 VAC, 60 Hz.

SERIES GP PLUG-IN AUTOMATIC RESET

Synchronous motor driven multi-purpose timer features unique spider clutch with the accuracy of infinite engaging types and the mechanical integrity of tooth types; repeat accuracy 0.25%, provided timer motor is wired to run continuously in reset position. Two sets of instantaneous SPDT and SPNO contacts switch over at beginning of time cycle and reset when clutch circuit is opened; two sets of SPDT and SPNC delay contacts operate at completion of time delay. Contacts rated 10 amps non-inductive at 125 and 250 VAC. Dial has 60 calibrations through 334° of rotation; knob adjust black pointer or time setting; red pointer moves to zero, showing elapsed time, and resets to black pointer position on power removal. Neon pilot indicates when motor is receiving power. Prices shown are for 120/240 VAC (specify) 60 Hz; 120/240 VAC, 50 Hz prices on request. Size, 3²⁷⁄₃₂″ w. x 4³⁄₁₆″ h. x 4⁹⁄₃₂″ d. behind panel. UL Recognized.

I.T. No.	Max. Time Cycle	Min. Time Cycle	Net Each, Lots of 1-6	7-49	50-99	100-249	250-499	500 Up
GP-6S	6 seconds	1/10 second	$39.52	$37.20	$34.88	$32.55	$30.23	$27.90
GP-15S	15 seconds	¼ second	39.52	37.20	34.88	32.55	30.23	27.90
GP-30S	30 seconds	½ second	39.52	37.20	34.88	32.55	30.23	27.90
GP-60S	60 seconds	1 second	39.52	37.20	34.88	32.55	30.23	27.90
GP-3M	3 minutes	3 seconds	39.52	37.20	34.88	32.55	30.23	27.90
GP-5M	5 minutes	5 seconds	39.52	37.20	34.88	32.55	30.23	27.90
GP-15M	15 minutes	15 seconds	39.52	37.20	34.88	32.55	30.23	27.90
GP-30M	30 minutes	30 seconds	39.52	37.20	34.88	32.55	30.23	27·90
GP-60M	60 minutes	60 seconds	39.52	37.20	34.88	32.55	30.23	27.90
GP-3H	3 hours	180 seconds	39.52	37.20	34.88	32.55	30.23	27.90

SERIES GTD INSTANTANEOUS RESET

Heavy-duty synchronous motor with clutch for instant starting and immediate reset. Isolated snap contacts rated 10 amps non-inductive. Mounts in 3″ hole, with single screw that tightens bracket to edge of panel hole. Flange, 4″ x 4⅜″; 4²³⁄₃₂″ d. Available with reverse clutch, and longer time cycle. Shipping Weight, 5 lbs.

I.T. No.	Max. Time Cycle	Dial Calibration	Net Each, Lots of* 1-3	4-5	6-11	12-24	25-49	50-99
GTD-3S	3 seconds	1/20 second	$39.50	$37.53	$35.55	$33.58	$31.60	$29.63
GTD-6S	6 seconds	1/10 second	39.50	37.53	35.55	33.58	31.60	29.63
GTD-15S	15 seconds	¼ second	39.50	37.53	35.55	33.58	31.60	29.63
GTD-30S	30 seconds	½ second	39.50	37.53	35.55	33.58	31.60	29.63
GTD-60S	60 seconds	1 second	39.50	37.53	35.55	33.58	31.60	29.63
GTD-3M	3 minutes	3 seconds	39.50	37.53	35.55	33.58	31.60	29.63
GTD-5M	5 minutes	5 seconds	39.50	37.53	35.55	33.58	31.60	29.63
GTD-15M	15 minutes	15 seconds	39.50	37.53	35.55	33.58	31.60	29.63
GTD-30M	30 minutes	30 seconds	39.50	37.53	35.55	33.58	31.60	29.63
GTD-60M	60 minutes	1 minute	39.50	37.53	35.55	33.58	31.60	29.63
GTD-3H	3 hours	3 minutes	39.50	37.53	35.55	33.58	31.60	29.63

SERIES MTD

Designed to match modern panel instruments, with rugged plastic protective face. Snap contacts rated 10 amps. Mounts from front in 3″ hole, secured by bracket screwed to rear of timer. Snap-on rear terminals. Dials have 60 calibrations. Shpg. Wt., 3 lbs.

MTD-6S	6 seconds	1/10 second	$30.50	$28.98	$27.45	$25.93	$24.40	$22.88
MTD-15S	15 seconds	¼ second	30.50	28.98	27.45	25.93	24.40	22.88
MTD-30S	30 seconds	½ second	30.50	28.98	27.45	25.93	24.40	22.88
MTD-60S	60 seconds	1 second*	30.50	28.98	27.45	25.93	24.40	22.88
MTD-3M	3 minutes	3 seconds*	30.50	28.98	27.45	25.93	24.40	22.88
MTD-5M	5 minutes	5 seconds*	30.50	28.98	27.45	25.93	24.40	22.88
MTD-15M	15 minutes	15 seconds*	30.50	28.98	27.45	25.93	24.40	22.88
MTD-30M	30 minutes	30 seconds*	30.50	28.98	27.45	25.93	24.40	22.88
MTD-60M	60 minutes	1 minute*	30.50	28.98	27.45	25.93	24.40	22.88
MTD-3H	3 hours	3 minutes*	30.50	28.98	27.45	25.93	24.40	22.88

*Clutch external to synchronous motor; others have integral clutch.

SERIES SF AND CSF

Compact timers for back-of-panel mounting. Snap contacts rated 10 amps. Size, 2¾″ x 3¹⁄₁₆″ x 2⅝″ d. CSF types have external clutch; 2²⁹⁄₃₂″ d. Shpg. Wt., 1½ lbs.

SF-6S	6 seconds	1/10 second	$23.00	$21.85	$20.70	$19.95	$18.40	$17.25
SF-15S	15 seconds	¼ second	23.00	21.85	20.70	19.95	18.40	17.25
SF-30S	30 seconds	½ second	23.00	21.85	20.70	19.95	18.40	17.25
CSF-1M	60 seconds	1 second	23.00	21.85	20.70	19.95	18.40	17.25
CSF-3M	3 minutes	3 seconds	23.00	21.85	20.70	19.95	18.40	17.25
CSF-5M	5 minutes	5 seconds	23.00	21.85	20.70	19.95	18.40	17.25

SERIES TDAB WITH EXTERNAL CLUTCH

Behind panel mounting with terminal strip at front. SPDT snap-action contacts rated 10 amps. External clutch for fast reset, less than 0.2 sec. Size, 4⁹⁄₁₆″ x 3¹⁷⁄₃₂″ x 3¹⁵⁄₃₂″ d. Also available in steel case. Shpg. Wt., 4 lbs.

I.T. No.	Max. Cycle	Dia. Calib., Secs	Net Each, Lots of
TDAB-1S	1 sec	1/60	
TDAB-3S	3 secs	1/20	
TDAB-6S	6 secs	1/10	
TDAB-15S	15 secs	¼	1–3. . . .$43.00
TDAB-30S	30 secs	½	4–5. . . . 40.85
TDAB-60S	60 secs	1	6–11. . . 38.70
TDAB-3M	3 min	3	12–24. . 36.55
TDAB-5M	5 min	5	25–49. . 34.40
TDAB-15M	15 min	15	50–99. . 32.25
TDAB-30M	30 min	30	
TDAB-60M	60 min	60	
TDAB-3H	3 hrs	180	

SERIES TDAF WITH EXTERNAL CLUTCH

Similar to Series TDAB above, but terminal strip at rear. Front panel mounting with 4 holes. Size, 4½″ x 3⅝″ x 3⅜″ d. Fits 4⁵⁄₁₆″ x 2¾″ panel hole. **To Order:** Change prefix **TDAB** in above table to **TDAF**; same prices. Shpg. Wt., 4 lbs.

SERIES TD AND CTD

Case mounts thru 3³⁄₁₆″ dia. panel hole; 2²¹⁄₃₂″ deep. Bracket clamps timer to panel. Isolated snap contacts rated 10 amps. Rear terminals. CTD series has external clutch; 4⁵⁄₃₂″ deep. Shpg. Wt., 1½ lbs.

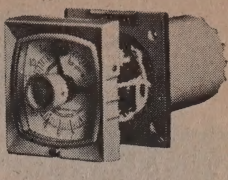
I.T. No.	Max. Cycle, Secs	Dial Calib., Secs	Net Each, Lots of*
TD-6S	6	1/10	1–3. . . .$30.50
TD-15S	15	¼	4–5. . . . 25.98
TD-30S	30	½	6–11. . . 27.45
CTD-1M	60	1	12–24. . 25.93
CTD-3M	180	3	25–49. . 24.40
CTD-5M	300	5	50–99. . 22.88

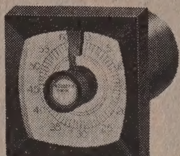
SERIES H AND CH

Panel mounting with four screws thru ⅛″ holes; terminal strip at rear for wiring. SPDT snap contacts rated 10 amps non-inductive. Size, 3⁹⁄₁₆″ x 3⁷⁄₁₆″ x 3¹⁄₁₆″ d. CH has external clutch; 3¼″ d. Shpg. Wt., 1½ lbs.

H-6S	6	1/10	1–3. . . .$26.50
H-15S	15	¼	4–5. . . . 25.18
H-30S	30	½	6–11. . . 23.85
CH-1M	60	1	12–24. . 22.53
CH-3M	180	3	25–49. . 21.20
CH-5M	300	5	50–99. . 19.88

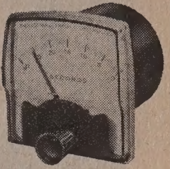
Series GP

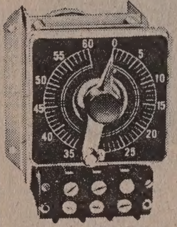




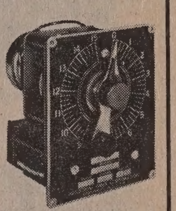
Series GTD

Series MTD

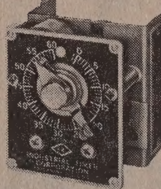




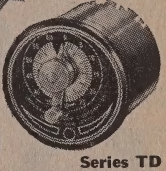
Series TDAB



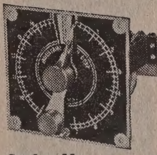
Series TDAF



Series SF

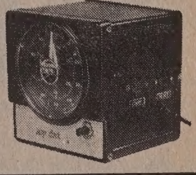


Series TD



Series H

Series SC Stop Clock



SERIES SC STOP CLOCKS

For time interval measurement up to 60 seconds or 60 minutes. Provision for starting by remote switch. Pointer reset by built-in pushbutton or remote control. Steel housing, baked enamel finish. **Model SC-100:** Max. registration, 60 seconds; minimum, 1/100 second. **Model SC-60:** Maximum registration, 60 minutes; min., 1 second. **Specify Model No.** Shpg. Wt., 6 lbs.

Net Each, Lots of* 1-3	4-5	6-11	12-24	25-49	50-99
$68.50	$65.08	$61.65	$58.23	$54.80	$51.38

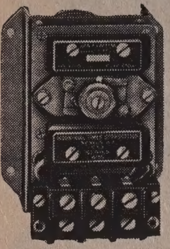
★LARGER QUANTITY PRICES

For quantities of 100–249, 30% discount off unit price; 250–499, 35% discount.

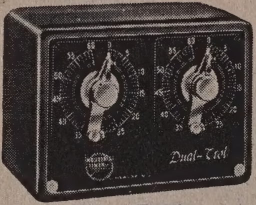
INDUSTRIAL TIMER
A UNIT OF ESTERLINE CORPORATION

Delay Timers, Meters

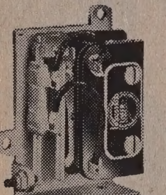
Series 90

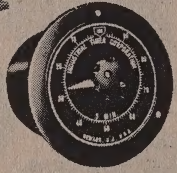

Series 400

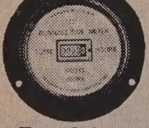
Series RB

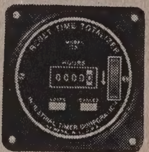


"Dual-Trol"


Series TH


Series PC


Type C-2


Type C-5

SERIES 90 DELAY TIMERS

Less calibrated dial. Cycle changes made by loosening cam screw and offsetting cam arm. SPDT contacts, 10 amps at 115 VAC, 60 Hz. Size, 2⅝" x 2¼" x 2¼". Shpg. Wt., 1 lb.

I.T. No.	Max. Time Cycle	Min. Time Cycle	Net Each, Lots of* 1-3	4-5	6-11	12-24	25-49	50-99
90-6S	6 seconds	½ second	$17.00	$16.15	$15.30	$14.45	$13.60	$12.75
90-15S	15 seconds	1½ seconds	17.00	16.15	15.30	14.45	13.60	12.75
90-30S	30 seconds	3 seconds	17.00	16.15	15.30	14.45	12.60	12.75
90-60S	60 seconds	6 seconds	17.00	16.15	15.30	14.45	13.60	12.75
90-90S	90 seconds	9 seconds	17.00	16.15	15.30	14.45	13.60	12.75

SERIES 400 DELAY TIMERS

External clutch mechanism for high accuracy, instant reset and wide cycle range. SPDT snap contacts rated 10 amps. Adjustment made by loosening cam screw and rotating outer cam arm. For 115 VAC, 60 Hz. Size, 3¹⁷⁄₃₂" x 3⅝" x 4⅜". Shpg. Wt., 3 lbs.

400-6S	6 seconds	0.6 second	$38.50	$36.58	$34.65	$32.73	$30.80	$28.88
400-15S	15 seconds	1.5 seconds	38.50	36.58	34.65	32.73	30.80	28.88
400-30S	30 seconds	3 seconds	38.50	36.58	34.65	32.73	30.80	28.88
400-60S	60 seconds	6 seconds	38.50	36.58	34.65	32.73	30.80	28.88
400-3M	3 minutes	18 seconds	38.50	36.58	34.65	32.73	30.80	28.88
400-5M	5 minutes	30 seconds	38.50	36.58	34.65	32.73	30.80	28.88
400-15M	15 minutes	1.5 minutes	38.50	36.58	34.65	32.73	30.80	28.88
400-30M	30 minutes	3 minutes	38.50	36.58	34.65	32.73	30.80	28.88
400-60M	60 minutes	6 minutes	38.50	36.58	34.65	32.73	30.80	28.88
400-3H	3 hours	18 minutes	38.50	36.58	34.65	32.73	30.80	28.88

SERIES RB AUTOMATIC RESET DELAY TIMERS

Power to motor starts delay; SPDT snap switch actuated when set period ends. Resets to period set on dial and opens load switch when power is removed from motor. Rated 15 amps non-ind. at 120 VAC or 240 VAC, 50/60 Hz. Can be flush, back or panel mounted. Size, 3³⁄₃₂" w. x 2¹⁵⁄₁₆" d. x 3¹⁄₃₂" h. Wt., 1 lb. Specify model, time range, voltage and frequency when ordering; **50-Hz prices on request.**

RB-5.6S	5.5 seconds	0.2 second						
RB-14S	13.5 seconds	0.5 second	**For 120 VAC, 60 Hz:**					
RB-28S	27 seconds	1 second	$16.75	$15.91	$15.08	$14.24	$13.40	$12.56
RB-56S	54 seconds	2 seconds						
RB-84S	82 seconds	3 seconds	**For 240 VAC, 60 Hz:**					
RB-168S	164 seconds	6 seconds	$17.75	$16.86	$15.98	$15.09	$14.20	$13.31
RB-4.5M	264 seconds	10 seconds						

SERIES "DUAL-TROL" RECYCLING TIMERS

Two adjustable on-off sequencing switch closures. Any two modules may be combined for variety of time cycles. Large, easy-to-read concentric scales. Terminal strip inside housing; two ½" knockouts. SPST, rated 10 A non-induc., 115 VAC, 60 Hz. Size, 4½" x 5⁹⁄₁₆" x 7½".

TM-6S	6 seconds	1/10 second	$27.50	$26.13	$24.75	$23.38	$22.00	$20.63
TM-15S	15 seconds	¼ second	27.50	26.13	24.75	23.38	22.00	20.63
TM-30S	30 seconds	½ second	27.50	26.13	24.75	23.38	22.00	20.63
TM-60S	60 seconds	1 second	27.50	26.13	24.75	23.38	22.00	20.63
TM-3M	3 minutes	3 seconds	27.50	26.13	24.75	23.38	22.00	20.63
TM-5M	5 minutes	5 seconds	27.50	26.13	24.75	23.38	22.00	20.63
TM-15M	15 minutes	15 seconds	27.50	26.13	24.75	23.38	22.00	20.63
TM-30M	30 minutes	30 seconds	27.50	26.13	24.75	23.38	22.00	20.63
TM-60M	60 minutes	1 minute	27.50	26.13	24.75	23.38	22.00	20.63
TM-3H	3 hours	3 minutes	27.50	26.13	24.75	23.38	22.00	20.63
....	Control housing only		39.00	37.05	35.10	33.15	31.20	29.25

10 AMPS AC THERMAL TIME DELAY RELAY

Adjustable, thermally actuated, SPDT snap-action switch. Single screw provides fine time cycle adjustment. Contacts are totally enclosed and rated 10 amps at 115 and 230 VAC, 30, 50 or 60 Hz. Also available with 15-amp load contacts. **Specify voltage.**

I.T. No.	Cycle, Seconds	Net Each, Lots of* 1-3	4-5	6-11	12-24	25-49	50-99
TH-15S	15	$8.50	$8.08	$7.65	$7.23	$6.80	$6.38
TH-30S	30	8.50	8.08	7.65	7.23	6.80	6.38
TH-60S	60	8.50	8.08	7.65	7.23	6.80	6.38
TH-90S	90	8.50	8.08	7.65	7.23	6.80	6.38
TH-120S	120	8.50	8.08	7.65	7.23	6.80	6.38

SERIES PC PERCENTAGE TIMERS

Calibrated in percentage time delay. Knob sets "on" time from 3% to 97%; 100% for continuous circuit. Cam operated snap switch, 15 amps. 3⅞" dia. x 4⁵⁄₁₆" d. Wt., 2 lbs.

PC-15S	15	$31.00	$29.45	$27.90	$26.35	$24.80	$23.25
PC-30S	30	31.00	29.45	27.90	26.35	24.80	23.25
PC-60S	60	31.00	29.45	27.90	26.35	24.80	23.25

ELAPSED TIME METERS

For exact record of machine hours on AC appliances and industrial machines. Synchronous heavy duty self-lubricating motors connected by gears to five-digit counters. Choice of six styles with non-reset or reset mechanism, enclosed or in open mounting. For 115 VAC, 60 Hz. **Series C-2** is enclosed non-reset type in 3½" Bakelite meter case; mounts in 2⅞" dia. hole. **Series C-4** is open type, non-reset with 2½" round flange, for 2" dia. hole. **Series C-25** is same as C-2, but in square case; mounts in 2⅞" dia. hole, flange 3¼" sq. **Series C-5** has thumb reset wheel; mounts in 2⅞" dia. hole; flange 3¼" sq. **Series C-7** is same as C-5, but open style. **Series T-3** is non-reset type in hermetically sealed case; mounts in 2⅞" dia. hole; flange 3¼" sq. Weight, 1 lb.

RANGE SUFFIXES

Suffix	Range	Calibration	Suffix	Range	Calibration
None	10,000 hours	1/10 hour	F	100,000 minutes	1 minute
A	100,000 hours	1 hour	G*	10,000 seconds	1/10 second
D	10,000 minutes	1/10 minute	H*	100,000 seconds	1 second

PRICES

To order, add Suffix from table above to indicate range and calibration.

I.T. Prefix	Description	Net Each, Lots of* 1-3	4-5	6-11	12-24	25-49	50-99
C-2	Non-reset panel-mount	$20.00	$19.00	$18.00	$17.00	$16.00	$15.00
C-4	Non-reset open-type	16.50	15.68	14.85	14.03	13.20	12.38
C-25	Non-reset square case	20.00	19.00	18.00	17.00	16.00	15.00
C-5	Reset type square case	42.50	40.38	38.25	36.13	34.00	31.88
C-5†	Reset type square case	43.50	41.33	39.15	36.98	34.80	32.63
C-7	Reset open-type	34.50	32.78	31.05	29.33	27.60	25.88
C-7†	Reset open-type	35.50	33.73	31.95	30.18	28.40	26.63
T-3	Hermetically sealed	38.50	36.58	34.65	32.73	30.80	28.88

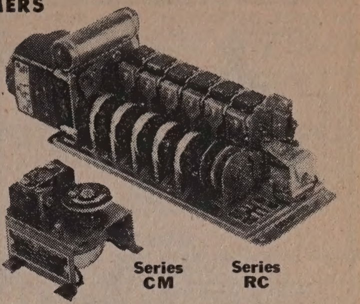
*Not available in reset types. †Suffix A, D or F.

★LARGER QUANTITY PRICES: LOTS 100-249, DEDUCT 30% OFF UNIT PRICE; 250-499, DEDUCT 35%.

INDUSTRIAL TIMER
UNIT OF ESTERLINE CORPORATION

Motor Driven Timers

SYNCHRONOUS, MOTOR-DRIVEN CAM TIMERS


Series CM Series RC

otor: Heavy-duty synchronous type, UL and CSA Approved. Available in 13 standard eeds. For short time cycles, higher torque motor is used. Built and guaranteed for long, ouble-free performance. **Switch:** SPDT snap-action, totally enclosed U/L and CSA pproved. Mounted on individual brackets for removal of each switch without dissembly of switch bank. Rated 10 amps AC, non-inductive. **Electrical:** Supplied for 5 or 220 VAC operation on 25, 50, 60 or 400 Hz; also 6, 12, 24 or 30 VDC. **Gear ack Assembly:** Stock selection of 50 standard ratio gear and rack assemblies. Easily angeable by removing 5-40 screw, setting rack into recess, and retightening the screw. **dividual Cam Adjustment:** On-Off periods adjustable 2% to 98% of total time cycle all but RA Series. Nut on face plate is loosened, cam is rotated to percentage desired, d nut tightened. Cams are made of corrosion-resistant aluminum. **Timing Sequence:** MC and RC Series, each cam is individually mounted on the shaft with heavy-duty ction disc for easy finger adjustment of timing sequence. Permits rapid cam positioning thout use of set screws or wrenches. Drum, calibrated 0% to 100%, is mounted on ch cam; mounted pointer acts as guide to set related programmed sequences. **Ordering formation:** When ordering, specify: 1—voltage and frequency of motor current; 2—mber of switches desired; 3—time cycle selected from chart below (e.g., MC-4 timer th C-12 gear rack).

SERIES CM RECYCLING TIMER

epeats a continuous, adjustable On-Off electrical cycle. Consists heavy-duty synchronous motor, adjustable cam and SPDT itch on base-mount chassis. Cam coupled to motor by simple ar and rack assembly, easily changeable. Cam adjustable 2% 98% of total time cycle; calibrated in percentage for quick curacy. Choice of 50 stock gear and rack assemblies, 40 cycles sec) to 1 revolution in 72 hours.

SERIES MC MULTI-CAM RECYCLING TIMER

entical in operation to Series CM, but controls from 2 to 20 rcuits. Cams are mounted on single driving shaft, coupled to otor by gear and rack assembly. Cams independently adjustable % to 98% of total time cycle. Individual cam adjustment perits use as a programming device; adjustable in any combination timed sequences. Total revolution time determined by motor eed and interchangeable gear and rack assemblies. Model MC-0 8.5-watt motor is standard.

SERIES RA SINGLE-CYCLE TIMER

Provides single, timed electrical cycle on momentary actuation from a remote position. Circular plate cam is notched at one point on the circumference, with a small plate (or pawl) at this location. The plate is contoured to the periphery of the cam and pressed against the cam face by a spring and stud. On actuation, the relay mechanically disengages a lever from the cam notch and starts the motor. During cam revolution, the relay lever rides on the circumference of the cam. At the end of the revolution, the pawl guides the lever into the notch, stopping the motor after completing one revolution. The single switch handles the timer motor and the external load circuits, limited only by switch rating.

SERIES RC SINGLE-CYCLE, MULTI-CAM TIMER

Identical to Series RA, but operates from 1 to 20 additional circuits. Permits the user to have all the advantages of Series MC, plus the single-cycle homing control of Series RA. Model RC-0 an 8.5-watt motor is standard.

Gear Rack Model No.	Time Cycle* for Series Model												
	CM-0 MC-0† RA-0 RC-0†	CM-1 MC-1 RA-1 RC-1	CM-2 MC-2 RA-2 RC-2	CM-3 MC-3 RA-3 RC-3	CM-4 MC-4 RA-4 RC-4	CM-5 MC-5 RA-5 RC-5	CM-6 MC-6 RA-6 RC-6	CM-7 MC-7 RA-7 RC-7	CM-8 MC-8 RA-8 RC-8	CM-9 MC-9 RA-9 RC-9	CM-10 MC-10 RA-10 RC-10	CM-11 MC-11 RA-11 RC-11	CM-12 MC-12 RA-12 RC-12
-12	40c	4s	10s	20s	40s	2m	3m20s	10m	20m	40m	2h	3h20m	8h
-14	46.7c	4.67s	11.67s	23.33s	46.67s	2m20s	3m53s	11m40s	23m20s	46m40s	2h20m	3h53m	9h20m
-12	48c	4.8s	12s	24s	48s	2m24s	4m	12m	24m	48m	2h24m	4h	9h36m
-15	50c	5s	12.5s	25s	50s	2m30s	4m10s	12m30s	25m	50m	2h30m	4h10m	10h
-16	53.3c	5.33s	13.33s	26.67s	53.3s	2m40s	4m27s	13m20s	26m40s	53m20s	2h40m	4h27m	10h40m
-14	56c	5.6s	14s	28s	56s	2m48s	4m40s	14m	28m	56m	2h48m	4h40m	11h12m
-12	1s	6s	15s	30s	60s	3m	5m	15m	30m	60m	3h	5h	12h
-16	64c	6.4s	16s	32s	64s	3m12s	5m20s	16m	32m	64m	3h12m	5h20m	12h48m
-20	66.7c	6.67s	16.67s	33.33s	66.67s	3m20s	5m33s	16m40s	33m20s	66m40s	3h20m	5h33m	13h20m
-14	70c	7s	17.5s	35s	70s	3m30s	5m50s	17m30s	35m	70m	3h30m	5h50m	14h
-18	72c	7.2s	18s	36s	72s	3m36s	6m	18m	36m	72m	3h36m	6h	14h24m
-22	73.3c	7.33s	18.33s	36.67s	73.33s	3m40s	6m7s	18m20s	36m40s	73m20s	3h40m	6h7m	14h40m
-15	75c	7.5s	18.75s	37.5s	75s	3m45s	6m15s	18m45s	37m30s	75m	3h45m	6h15m	15h
-12	80c	8s	20s	40s	80s	4m	6m40s	20m	40m	80m	4h	6h40m	16h
-26	86.7c	8.67s	21.67s	43.33s	86.67s	4m20s	7m13s	21m40s	43m20s	86m40s	4h20m	7h13m	17h20m
-22	88c	8.8s	22s	44s	88s	4m24s	7m20s	22m	44m	88m	4h24m	7h20m	17h36m
-18	90c	9s	22.5s	45s	90s	4m30s	7m30s	22m30s	45m	90m	4h30m	7h30m	18h
-14	93.3c	9.33s	23.33s	46.67s	93.33s	4m40s	7m47s	23m20s	46m40s	93m20s	4h40m	7h47m	18h40m
-24	96c	9.6s	24s	48s	96s	4m48s	8m	24m	48m	96m	4h48m	8h	19h12m
-15	100c	10s	25s	50s	100s	5m	8m20s	25m	50m	100m	5h	8h20m	20h
-26	104c	10.4s	26s	52s	104s	5m12s	8m40s	26m	52m	104m	5h12m	8h40m	20h48m
-16	106.7c	10.67s	26.67s	53.33s	106.7s	5m20s	8m54s	26m40s	53m20s	106m40s	5h20m	8h54m	21h20m
-22	110c	11s	27.5s	55s	110s	5m30s	9m10s	27m30s	55m	110m	5h30m	9h10m	22h
-28	112c	11.2s	28s	56s	112s	5m36s	9m20s	28m	56m	112m	5h36m	9h20m	22h24m
-34	113.3c	11.33s	28.33s	56.67s	113.3s	5m40s	9m27s	28m20s	56m40s	113m20s	5h40m	9h27m	22h40m
-12	2s	12s	30s	60s	2m	6m	10m	30m	60m	2h	6h	10h	24h
-32	2s8c	12.78s	32s	64s	128s	6m24s	10m40s	32m	64m	2h8m	6h24m	10h40m	25h36m
-26	2s10c	13s	32.5s	65s	130s	6m30s	10m50s	32m30s	65m	2h10m	6h30m	10h50m	26h
-20	2s12c	13.2s	33.33s	66.67s	133.3s	6m40s	11m7s	33m20s	66m40s	2h13m	6h40m	11h7m	26h40m
-34	2s16c	13.56s	34s	68s	136s	6m48s	11m20s	34m	68m	2h16m	6h48m	11h20m	27h12m
-14	2s20c	14s	35s	70s	140s	7m	11m40s	35m	70m	2h20m	7h	11h40m	28h
-36	2s24c	14.4s	36s	72s	144s	7m12s	12m	36m	72m	2h24m	7h12m	12h	28h48m
-22	2s27c	14.7s	36.67s	73.33s	146.7s	7m20s	12m13s	36m40s	73m20s	2h27m	7h20m	12h13m	29h20m
-15	2s30c	15s	37.5s	75s	150s	7m30s	12m30s	37m30s	75m	2h30m	7h30m	12h30m	30h
-16	2s40c	16s	40s	80s	160s	8m	13m20s	40m	80m	2h40m	8h	13h20m	32h
-34	2s50c	17s	42.5s	85s	170s	8m30s	14m10s	42m30s	85m	2h50m	8h30m	14h10m	34h
-26	2s52c	17.2s	43.33s	86.67s	173.3s	8m40s	14m27s	43m20s	86m40s	2h53m	8h40m	14h27m	34h40m
-18	3s	18s	45s	90s	3m	9m	15m	45m	90m	3h	9h	15h	36h
-28	3s7c	18.7s	46.67s	93.33s	186.7s	9m20s	15m33s	46m40s	93m20s	3h7m	9h20m	15h33m	37h20m
-20	3s20c	20s	50s	100s	200s	10m	16m40s	50m	100m	3h20m	10h	16h40m	40h
-32	3s33c	21.3s	53.33s	106.7s	213.4	10m40s	17m47s	53m20s	106m40s	3h33m	10h40m	17h47m	42h40m
-22	3s40c	22s	55s	110s	220s	11m	18m20s	55m	110m	3h40m	11h	18h20m	44h
-34	3s47c	22.7s	56.67s	113.3s	226.7s	11m20s	18m53s	56m40s	113m20s	3h47m	11h20m	18h53m	45h20m
-24	4s	24s	60s	2m	4m	12m	20m	60m	2h	4h	12h	20h	48h
-26	4s20c	26s	65s	130s	260s	13m	21m40s	65m	2h10m	4h20m	13h	21h40m	52h
-28	4s40c	28s	70s	140s	280s	14m	23m20s	70m	2h20m	4h40m	14h	23h20m	56h
-30	5s	30s	75s	150s	5m	15m	25m	75m	2h30m	5h	15h	25h	60h
-32	5s20c	32s	80s	160s	320s	16m	26m40s	80m	2h40m	5h20m	16h	26h40m	64h
-34	5s40c	34s	85s	170s	340s	17m	28m20s	85m	2h50m	5h40m	17h	28h20m	68h
-36	6s	36s	90s	3m	6m	18m	30m	90m	3h	6h	18h	30h	72h

C=cycles; s=seconds; m=minutes; h=hours. Each unit designation is limited in overall time to the 50 time cycles listed in its column; xample: RC-4 can range from 40 seconds to 6 minutes in 50 steps by selecting one of 50 gear racks. †Require 8.5-watt motor.

INDUSTRIAL NET PRICES

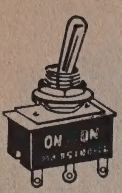
ndustrial Timer Series CM—Net Each.............**$20·50***
ndustrial Timer Series RA—Net Each.............. **30·50***
ndustrial Timer Series MC—Net Each, 2 to 20 switches. From **$35·50** to **$191·50*. Complete pricing on request.**
ndustrial Timer Series RC—Net Each, 2 to 20 switches. From **$42·50** to **$207·50*. Complete pricing on request.**
ll Gear Racks—Net Each..........................**$1·75**

★INDUSTRIAL DISCOUNTS

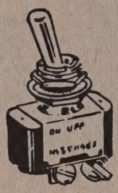
For Lots of	Discount Off Net	Multiplier	For Lots of	Discount Off Net	Multiplier
1–3	None	1.00	25–49	20%	.80
4–5	5%	.95	50–99	25%	.75
6–11	10%	.90	100–249	30%	.70
12–24	15%	.85	250–499	35%	.65

Multi-cam kits available for experimental work; write for full information.

MILITARY AND COMMERCIAL SWITCHES



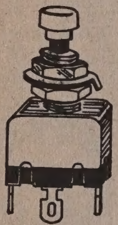
25098



35058

TC3M

TM-3



PM-3

MIL APPROVED TOGGLE SWITCHES

MS-25098 (SINGLE POLE) AND MS-25100 (DOUBLE POLE)

Wiping contacts; phenolic base. Slotted sleeve, 15⁄32″ dia. Non-ferrous material sati chrome finish. Solder lug terminals. Supplied with 2 hex nuts, 1 locating ring and 1 shakeproof lockwasher.

A-H Number	MS Number	Circuit	Net Each, Lots of			
			1-24	25-99	100-499	500-999
25098AM	MS-25098-22	On-none-off	$4.15	$3.32	$2.13	$1.66
25098BM	MS-25098-29	On-none-mom. off	5.09	4.07	2.55	2.04
25098CM	MS-25098-30	Off-none-mom. on	5.09	4.07	2.55	2.04
25098DM	MS-25098-23	On-none-on	4.48	3.58	2.24	1.79
25100AM	MS-25100-22	On-none-off	5.09	4.07	2.55	2.04
25100BM	MS-25100-29	On-none-mom. off	6.07	4.86	3.04	2.43
25100CM	MS-25100-30	Off-none-mom. on	6.07	4.86	3.04	2.43
25100DM	MS-25100-23	On-none-on	5.43	4.34	2.72	2.17

MS-35058 (SINGLE POLE) AND MS-35059 (DOUBLE POLE)

Butt-type contacts; phenolic base. Slotted sleeve, 15⁄32″ dia. Exposed parts of non-ferrou material, satin chrome finished. Screw terminals. Circuit designations stamped on side. Supplied with 2 hex nuts, 1 locating ring and 1 shakeproof lockwasher.

A-H Number	MS Number	Circuit	Net Each, Lots of			
			1-24	25-99	100-499	500-999
35058EM	MS-35058-21	On-off-on	$3.75	$3.00	$1.88	$1.50
35058WM	MS-35058-22	On-none-off	3.11	2.49	1.56	1.24
35058DM	MS-35058-23	On-none-on	3.75	3.00	1.88	1.50
35058AM	MS-35058-24	On-off-none	3.11	2.49	1.56	1.24
35058CM	MS-35058-25	On-mom. off-none	3.43	2.74	1.72	1.37
35058FM	MS-35058-26	On-none-mom. on	4.08	3.26	2.05	1.63
35058GM	MS-35058-27	Mom. on-off-mom. on	4.08	3.26	2.05	1.63
35058BM	MS-35058-28	None-off-mom. on	3.43	2.74	1.72	1.37
35058XM	MS-35058-29	On-none-mom. off	3.43	2.74	1.72	1.37
35058YM	MS-35058-30	Off-none-mom. on	3.43	2.74	1.72	1.37
35058HM	MS-35058-31	On-off-mom. on	4.08	3.26	2.05	1.63
35059EM	MS-35059-21	On-off-on	5.03	4.02	2.52	2.01
35059WM	MS-35059-22	On-none-off	4.16	3.33	2.08	1.66
35059DM	MS-35059-23	On-none-on	5.03	4.02	2.52	2.01
35059AM	MS-35059-24	On-off-none	4.16	3.33	2.08	1.66
35059CM	MS-35059-25	On-mom. off-none	5.03	4.02	2.52	2.01
35059FM	MS-35059-26	On-none-mom. on	5.43	4.34	2.72	2.17
35059GM	MS-35059-27	Mom. on-off-mom. on	5.43	4.34	2.72	2.17
35059BM	MS-35059-28	None-off-mom. on	5.03	4.02	2.52	2.01
35059XM	MS-35059-29	On-none-mom. off	5.03	4.02	2.52	2.01
35059YM	MS-35059-30	Off-none-mom. on	5.03	4.02	2.52	2.01
35059HM	MS-35059-31	On-off-mom. on	5.43	4.34	2.72	2.17

SUBMINIATURE MS-75028 AND MS-75029

Butt-type gold plated silver contacts. Slotted sleeve ¼″ dia. Combination solder lug-quick connect terminals. Aluminum exposed parts; clear anodized aluminum finish. With 2 hex nuts, 1 lockwasher and 1 locking ring.

A-H Number	MS Number	Circuit	Net Each, Lots of				
			1-24	25-99	100-499	500-999	1000-9999
TS1M	MS-75028-22	Off-none-on	$3.00	$2.40	$2.25	$2.10	$1.95
TC3M	MS-75028-21	On-off-on	3.20	2.56	2.40	2.24	2.08
TE3M	MS-75028-31	Mom. on-off-maint. on	3.40	2.72	2.55	2.38	2.21
TG3M	MS-75028-27	Mom. on-off-mom. on	3.40	2.72	2.55	2.38	2.21
TM3M	MS-75028-26	Mom. on-none-on	3.40	2.72	2.55	2.38	2.21
TS3M	MS-75028-23	On-none-on	3.20	2.56	2.40	2.24	2.08
TS2M	MS-75029-22	Off-none-on	3.60	2.88	2.70	2.52	2.34
TC6M	MS-75029-21	On-off-on	4.10	3.28	3.08	2.87	2.67
TE6M	MS-75029-31	Mom. on-off-maint. on	5.20	4.16	3.90	3.64	3.38
TG6M	MS-75029-27	Mom. on-off-mom. on	5.20	4.16	3.90	3.64	3.38
TM6M	MS-75029-26	Mom. on-none-maint. on	5.20	4.16	3.90	3.64	3.38
TS6M	MS-75029-23	On-none-on	4.10	3.28	3.08	2.87	2.67

COMMERCIAL SUBMINIATURE SWITCHES

2 AND 3 POSITION TOGGLE TYPE

Butt-type gold plated silver contacts; slotted sleeve, ¼″ dia. Solder lug-quick connect terminals; PC on request. Stainless steel ball lever. Gold anodized aluminum exposed parts. Rated at 5 A, 125 VAC; 5 A, 29 VDC. Supplied with 2 hex nuts, 1 locating ring and 1 locking ring.

A-H Number	Circuit	Toggle Lever Position	Net Each, Lots of				
			1-24	25-99	100-499	500-999	1000-9999
TS-1	SPST	Off-none-on	$2.80	$2.24	$2.10	$1.96	$1.82
TS-3	SPDT	On-none-on	3.00	2.40	2.25	2.10	1.95
TM-3	SPDT	On*-none-on†	3.20	2.56	2.40	2.24	2.08
TS-2	DPST	Off-none-on	3.40	2.72	2.55	2.38	2.21
TS-6	DPDT	On-none-on	3.90	3.12	2.93	2.73	2.54
TM-6	DPDT	On*-none-on†	5.00	4.00	3.75	3.50	3.25
TC-3	SPDT	On-off-on	3.00	2.40	2.25	2.10	1.95
TE-3	SPDT	On*-off-on†	3.20	2.56	2.40	2.24	2.08
TG-3	SPDT	On*-off-on*	3.20	2.56	2.40	2.24	2.08
TC-6	DPDT	On-off-on	3.90	3.12	2.93	2.73	2.54
TE-6	DPDT	On*-off-on†	5.00	4.00	3.75	3.50	3.25
TG-6	DPDT	On*-off-on*	5.00	4.00	3.75	3.50	3.25

*Momentary. †Maintained.

PUSHBUTTON TYPE

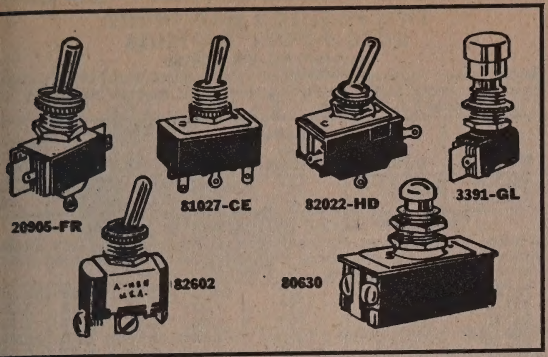
Subminiature pushbutton switches incorporate maximum performance, dependability and durability on an ultra-lightweight base. Ideal for electronic instrumentation, computer equipment and communication switchboard applications. Leaf blade wiping action; gold plated silver contacts for low energy reliability. Combination solder lug-quick connect terminals. Slotted sleeve ¼″ dia. x ¼″ lg. Rated at 1 amp, 115 VAC; 2 amps, 29 VDC. Supplied with 2 hex nuts, 1 locating ring, 1 locking ring and white nylon button.

A-H Number	Circuit	Net Each, Lots of				
		1-24	25-99	100-499	500-999	1000-9999
PM-3	SPDT	$2.86	$2.29	$2.15	$2.00	$1.86
PM-6	DPDT	3.51	2.81	2.63	2.46	2.28
PM-7	3PST-NO	3.31	2.65	2.48	2.32	2.15
PM-8	3PST-NC	4.65	3.72	3.49	3.26	3.02
PMQ-3*	SPDT	3.25	2.60	2.44	2.28	2.11

*Rated at 7 A, 125 VAC; 5 A, 29 VDC. Snap-acting butt-type contacts.

ALL SWITCHES ARE LISTED BY UNDERWRITER LABORATORIES

Toggle Switches



Jnless otherwise noted, bright nickel finished exposed parts; slotted leeve, ¹⁵⁄₃₂″-32 dia.; with standard hardware. SPST and DPST witches operate on-off; SPDT and DPDT switches operate n-on (3-position, on-off-on); 2-circuit switches have two independent circuits, one on and the other off and vice versa when perated. All switches are listed by Underwriter Laboratories.

POSITION MAINTAINED TOGGLE SWITCHES

3 AMP AC-DC CANOPY SERIES

Roller action contacts with quick make-break action; laminated base. Solder lug terminals. Rated at 1 A, 230 V; 3 A, 125 V.

A-H Number	Circuit	Sleeve Lgth., Inches	Lever	Net Each, Lots of 1-24	25-99	100-499	500-999
0994-CS	SPST	15/32	Ball	$1.36	$1.09	$0.68	$0.54
0994-LH	SPST	15/32	Bat	1.36	1.09	.68	.54
1615-BD	SPST	1	Ball	1.89	1.51	.95	.76
1615-BE	SPST	1	Bat	1.89	1.51	.95	.76
1350-BF	SPDT	15/32	Ball	1.72	1.38	.86	.69
1350-EH	SPDT	15/32	Bat	1.72	1.38	.86	.69
0902-N	DPST	15/32	Ball	2.48	1.98	1.24	.99
0902-CX	DPST	15/32	Bat	2.48	1.98	1.24	.99
0905-BX	DPDT	15/32	Ball	2.84	2.27	1.42	1.14
0905-FR	DPDT	15/32	Bat	2.84	2.27	1.42	1.14
0905-KA	DPDT	1	Bat	3.38	2.70	1.69	1.35

3 AMP AC-DC MIDGET SERIES

Wiping blade contact; molded phenolic base. Solder lug terminals. Rated at 1 A, 250 V; 3 A, 125 V. **83050** metal bat lever; **83050-C** paddle lever, satin chrome finish; **83050-S** black nylon lever.

A-H Number	Circuit	Sleeve Length, Inches	Net Each, Lots of 1-24	25-99	100-499	500-999
3050	SPST	15/32	$1.69	$1.35	$0.85	$0.68
3050-CG	SPST	15/32	2.23	1.78	1.12	.89
3050-SB	SPST	13/32	2.04	1.63	1.02	.82
3052	SPDT	15/32	2.02	1.62	1.01	.81
3052-CG	SPDT	15/32	2.79	2.23	1.40	1.12
3052-SG	SPDT	13/32	2.38	1.90	1.19	.95
3053	DPST	15/32	2.51	2.01	1.26	1.00
3053-CG	DPST	15/32	3.28	2.62	1.64	1.31
3053-SG	DPST	13/32	2.85	2.28	1.43	1.14
3054	DPDT	15/32	2.88	2.30	1.44	1.15
3054-C	DPDT	15/32	3.72	2.98	1.86	1.49
3054-SQ	DPDT	13/32	3.22	2.58	1.61	1.29

6 AMP AC-DC SERIES

Wiping blade contacts; molded phenolic base. End-connected solder lug terminals except as noted. Rated 3 A, 250 V; 6 A, 125 V.

1015-AW*	SPST	15/32	$1.69	$1.35	$0.85	$0.68
1021-AV†	SPDT	15/32	2.02	1.62	1.01	.81
1024-GB*	DPST	15/32	2.51	2.01	1.26	1.00
1024-KB	DPST	15/32	2.51	2.01	1.26	1.00
1027-CE*	DPDT	15/32	2.88	2.30	1.44	1.15
1027-CB	DPDT	15/32	2.88	2.30	1.44	1.15

Same as above except slider contacts and terminals: Suffix **QE**, wire leads; **E,** screw and **N,** solder lug.

6599-QE	SPST	15/32	$1.74	$1.39	$0.87	$0.70
6964-E	SPST	15/32	1.74	1.39	.87	.70
6994-N	SPST	15/32	1.46	1.13	.73	.58

*Back-connected. †Rated at 1 A, 250 V; 6 A, 125 V.

15 AMP AC UTILITY SERIES

Slow make and slow break butt type contacts. Molded phenolic base. Bat lever. Sleeve, ¹⁵⁄₃₂″ dia. Rated at 10 A, 250 VAC; 15 A, 125 VAC; ¾ hp, 120–240 VAC.

A-H Number	Circuit	Terminals	Net Each, Lots of 1-24	25-99	100-499	500-999
82600	SPST	Screw	$1.53	$1.22	$0.77	$0.61
82601	SPST	Solder	1.34	1.07	.67	.54
82604	SPDT	Screw	1.84	1.47	.92	.74
82605	SPDT	Solder	1.53	1.22	.77	.61
82606	DPST	Screw	2.46	1.97	1.23	.98
82607	DPST	Solder	2.08	1.66	1.04	.83
82610	DPDT	Screw	3.04	2.43	1.52	1.22
82611	DPDT	Solder	2.46	1.97	1.23	.98
82612*	3PST	Screw	4.71	3.77	2.36	1.88
82616*	3PDT	Screw	5.97	4.78	2.99	2.39
82617*	3PDT	Solder	4.99	3.99	2.50	2.00
82635†	4PDT	Screw	8.45	6.76	4.23	3.38
82636†	4PDT	Solder	7.47	5.98	3.74	2.99

*Rated for 1 hp, 1-2-3 phase, 120 VAC; †½ hp, 115–230 VAC.

2-POSITION MAINTAINED SWITCHES (CONT'D)

16 AMP AC-DC SERIES

Wiping contacts; positive quick make-break action. Screw terminals. Molded phenolic base except 83800-D, all-molded construction and double insulated design. Sleeve, ¹⁵⁄₃₂″ lg. Rated at 8 A, 250 V; 16 A, 125 V; 1 hp, 125–250 V.

A-H Number	Circuit	Lever	Net Each, Lots of 1-24	25-99	100-499	500-999
80607-BJ*	SPST	Bat	$2.57	$2.06	$1.29	$1.03
80618-K*	SPDT	Bat	2.57	2.06	1.29	1.03
80600-BJ	DPST	Bat	2.57	2.06	1.29	1.03
80600-B	DPST	Ball	2.57	2.06	1.29	1.03
83800-D	DPST	Bat	2.68	2.14	1.34	1.07

*Rated at 6 A, 250 V; 12 A, 125 V.

20 AMP AC-DC SERIES

Wiping contacts; molded phenolic base. Screw terminals. Rated at 10 A, 250 V; 20 A, 125 V; 1½ hp, 125–250 V.

A-H Number	Circuit	Sleeve Length, Inches	Net Each, Lots of 1-24	25-99	100-499	500-999
80601-BD	SPST	15/32	$4.49	$3.59	$2.25	$1.80
80609-CA*	SPDT	15/32	4.49	3.59	2.25	1.80
80602-C	DPST	15/32	4.49	3.59	2.25	1.80
80602-CA	DPST	15/32	4.49	3.59	2.25	1.80

Quick make and quick break contacts; molded phenolic base. No. 8421 sleeve, ½″ dia. Screw terminals. Rated at 20 A, 250 V; 1½ hp, 125 V; 2 hp, 250 V.

80421	DPST	11/32	$6.03	$4.82	$3.02	$2.41
80421-U	DPST	35/64	6.03	4.82	3.02	2.41

*Rated at 10 A, 250 V; 15 A, 125 V.

30 AMP AC-DC 93 SERIES

Knife blade contacts; molded phenolic square lever. Screw terminals. Two-hole flush mounting on 3⁵⁄₁₆″ centers. Rated at 30 A, 250 V; 20 A, 600 V; 2 hp, 115–600 V.

A-H Number	Circuit	Net Each, Lots of 1-24	25-99	100-499	500-999
8684-U*	SPST	$ 3.71	$ 2.97	$ 1.86	$1.48
80093	DPST	6.89	5.51	3.45	2.76
8686-U*	DPST	4.28	3.42	2.14	1.71
80404	3PST	20.16	16.13	10.08	8.06

*2 hp, 115–230 VAC; 1 hp, 460 VAC.

60 AMP AC-DC SERIES

Same as 30 amp 93 Series except rated at 6 A, 250 V; 2 hp, 120–240 V.

7828-B	DPST	$14.51	$11.61	$7.26	$5.80

3 POSITION CENTER-OFF MAINTAINED TOGGLE SWITCHES

3 AMP AC-DC 84000 SERIES

Wiping blade contacts; molded phenolic base; nickel finished exposed parts. Rated at 1 A, 250 V; 3 A, 125 V.

A-H Number	Circuit	Sleeve Length, Inches	Net Each, Lots of 1-24	25-99	100-499	500-999
84104	DPDT	5/16	$4.66	$3.73	$2.33	$1.86
84105	SPDT	5/16	3.92	3.14	1.96	1.57

6 AMP AC-DC INTERMEDIATE SERIES

Wiping contacts; phenolic base; nickel finish bat lever. Solder lug terminals. Rated at 3 A, 250 V; 6 A, 125 V.

82022-HD	SPDT	15/32	$3.27	$2.62	$1.64	$1.31
82024-HD	DPDT	15/32	4.03	3.22	2.02	1.61

14 AMP AC-DC 638 SERIES

Sliding wedge contacts; phenolic base. Sleeve, ¾″ dia. Screw terminals. Positive off position; available without off on request. No. 80638-D rated at 7 A, 250 V; 14 A, 125 V; ¾ hp, 250 V. Nos. 80983, 80985 rated at 5 A, 250 V; 10 A, 125 V; ½ hp, 115–230 VAC.

80638-D	DPDT	13/32	$ 7.48	$ 5.98	$3.74	$2.99
80983	3PDT	13/32	11.55	9.24	5.78	4.62
80985	4PDT	13/32	15.41	12.33	7.71	6.16

15 AMP AC UTILITY SERIES

Heavy duty butt-type silver contacts. Molded phenolic base; nickel finished exposed parts. Bat lever. Sleeve, ¹⁵⁄₃₂″ lg. Rated at 10 A, 250 VAC; 15 A, 125 VAC; ¾ hp, 120–240 VAC.

A-H Number	Circuit	Terminals	Net Each, Lots of 1-24	25-99	100-499	500-999
82602	SPDT	Screw	$1.84	$1.47	$0.92	$0.74
82603	SPDT	Solder	1.53	1.22	.77	.61
82608	DPDT	Screw	3.04	2.43	1.52	1.22
82609	DPDT	Solder	2.46	1.97	1.23	.98
82614	3PDT	Screw	5.97	4.78	2.99	2.39
82615*	3PDT	Solder	4.98	3.98	2.49	1.99
82633†	4PDT	Screw	8.45	6.76	4.23	3.38
82634	4PDT	Solder	7.47	5.98	3.74	2.99

20 AND 30 AMP AC-DC SERIES

Quick make-break action; positive center off. Molded phenolic base; insulated molded square lever. Two hole flush mounting on 3⁹⁄₃₂″ centers. Rated at 20 A, 250 V; 30 A, 125 V; 1½ hp, 250 V.

80634‡	DPDT	Screw	$12.03	$ 9.62	$ 6.02	$ 4.81
80988§	DPDT	Screw	20.90	16.72	10.45	8.36
80898	3PDT	Screw	27.50	22.00	13.75	11.00
80899	4PDT	Screw	31.35	25.08	15.68	12.54

*Rated for 1 hp at 125 VAC. †Rated for ½ hp at 115–230 VAC. ‡Rated at 10 A, 250 V; 20 A, 125 V; 1½ hp, 250 VDC; 2 hp, 230 VAC; 5 A, 600 V. §Rated at 20 A, 250 V; 30 A, 125 V.

Arrow Hart Switches

MOMENTARY CONTACT PUSHBUTTON SWITCHES

1 AMP AC CANOPY SERIES

Slow make-break butt-type contacts; solder lug terminals; laminated base. Bright nickel finished exposed parts. Plain metal top or snap-on phenolic button. Slotted sleeve 15/32″-32 x 9/16″ lg. Rated at 1 A, 125 VAC; ¾ A, 125 VDC.

A-H Number	Circuit	Button Style	Net Each, Lots of 1-24	25-99	100-499	500-999
3391	SPST-NC	Std. metal	$1.46	$1.17	$0.73	$0.58
3391-GJ		Black snap-on	1.93	1.54	.97	.77
3391-GJR		Red snap-on	1.93	1.54	.97	.77
3391-E	SPST-NO	Std. metal	1.46	1.17	.73	.58
3391-GL		Black snap-on	1.93	1.54	.97	.77
3391-GLB		None*	1.49	1.19	.75	.60
3391-GLR		Red snap-on	1.93	1.54	.97	.77
3392	2 circuit— 1 NO, 1 NC	Std. metal	1.89	1.51	.95	.76
3392-AE		Black snap-on	2.34	1.87	1.17	.94
3392-AER		Red snap-on	2.34	1.87	1.17	.94

3 AMP AC 511 SERIES

Same as above except molded phenolic base and choice of three button styles: Std. aluminum, concave aluminum or snap-on molded phenolic. Rated at 1 A, 250 VAC; 3 A, 120 VAC; 1/10 hp, 120 VAC.

80511	SPST-NC	Std. metal	$0.96	$0.77	$0.48	$0.38
80511-C		Concave metal	1.22	.98	.61	.49
80541		Black snap-on	1.82	1.46	.91	.73
80541-R		Red snap-on	1.82	1.46	.91	.73
80541-L	SPST-NO	None*	1.40	1.12	.70	.56
80511-E		Std. metal	.96	.77	.48	.38
80511-CE		Concave metal	1.22	.98	.61	.49
80541-E		Black snap-on	1.82	1.46	.91	.73
80541-ER		Red snap-on	1.82	1.46	.91	.73

*Same as 3391-GJ and 80541 but without snap-on button; will accept either black or red button.

3 AMP AC-DC MIDGET SERIES

Combination solder lug-quick connect terminals; silver-plated current carrying parts; single wiping blade contacts. Molded phenolic base; plain metal top or black snap-on phenolic button. Rated at 1 A, 250 V; 3 A, 125 V.

83090	SPST-NO	Std. metal	$2.66	$2.13	$1.33	$1.06
83094-CB	DPDT	Black snap-on	4.37	3.50	2.19	1.75

6 AMP AC-DC INTERMEDIATE SERIES

Wiping blade contacts with quick make-break action. Molded phenolic base; solder lug terminals; bright nickel finished exposed parts. Slotted sleeve 15/32″-32 x ½″ lg. Rated at 1 A, 250 V; 6 A, 125 V.

A-H Number	Circuit	Button Style	Net Each, Lots of 1-24	25-99	100-499	500-999
81081-G	SPDT	Std. metal	$3.53	$2.82	$1.77	$1.41
81084-G	DPST-NO	Std. metal	4.24	3.39	2.12	1.70
81087-J	DPDT	Std. metal	4.58	3.66	2.29	1.83

AC-DC HEAVY DUTY SERIES

Wiping contacts; molded phenolic base. Screw terminals. Slotted sleeve 15/32″-32; contacts NO. Std. metal button. Rated at 8 A, 250 V; 16 A, 125 V; 1 hp, 125–250 V.

A-H Number	Circuit	Sleeve Length, Inches	Net Each, Lots of 1-24	25-99	100-499	500-999
80630	DPST	7/16	$3.83	$3.06	$1.92	$1.53
80631	SPST	7/16	3.83	3.06	1.92	1.53
80938*	DPST	7/16	5.82	4.66	2.91	2.33

*Rated 10 A, 250 V; 20 A, 125 V; 1½ hp, 125–250 V.

DOUBLE ACTION PUSH-PUSH SWITCHES

6 AMP AC-DC SERIES

Wiping blade contacts; molded phenolic base. Solder lug terminals except No. 82404 has 6″ wire leads. Standard metal button. Rated at 3 A, 250 V; 6 A, 125 V.

A-H Number	Circuit	Sleeve Length, Inches	Net Each, Lots of 1-24	25-99	100-499	500-999
82403	SPST	9/16	$1.95	$1.56	$0.98	$0.78
82404	SPST	9/16	2.21	1.77	1.11	.88
81117	DPDT	9/16	3.87	3.10	1.94	1.55

16 AMP AC-DC SERIES

Wiping contacts; molded phenolic base. Screw terminals. Rated at 8 A, 250 V; 16 A, 125 V; 1 hp, 125–250 V.

80863	DPST	9/16	$3.98	$3.18	$1.99	$1.59
81951*	DPST	9/16	5.61	4.49	2.81	2.24

*Rated at 10 A, 250 V; 20 A, 125 V; 1½ hp, 125–250 V.

SLIDE SWITCH

Wiping action for positive, no-tease contact; quick make-break action. Molded phenolic base; bright nickel finished exposed parts. Screw Terminals; black slide lever. Rated at 3 A, 250 V; 6 A, 125 V.

A-H Number	Circuit	Net Each, Lots of 1-24	25-99	100-499	500-999
81569	SPST	$2.57	$2.06	$1.29	$1.03

AVAILABLE ON REQUEST—PLEASE INQUIRE

- **SWITCHES: PORTABLE TOOL, PRECISION SNAP-ACTING, MISCELLANEOUS**
- **MINIATURE PRECISION CIRCUIT BREAKERS**
- **SWITCH OPTIONS, MOUNTING HARDWARE AND MISCELLANEOUS ACCESSORIES**

TWO-POSITION MAINTAINED ROTO-POWER SWITCHES

3 AMP AC-DC SERIES

Roller action contacts; laminated base construction; bright nickel finished exposed parts. Solder lug terminals. Slotted sleeve 11/32″-32 x ⅜″ lg. Rated at 1 A, 250 V; 3 A, 125 V.

A-H Number	Circuit	Spindle Projection	Net Each, Lots of 1-24	25-99	100-499	500-999
1561-B	SPST	⅜″	$1.84	$1.47	$0.92	$0.74
1561-BS	SPST	1⅛″	1.84	1.47	.92	.74

6 AMP AC-DC INTERMEDIATE SERIES

Wiping blade contact mechanism; molded phenolic base. Bright nickel finished exposed parts. Solder lug terminals. Slotted sleeve 11/32″-32 x ⅜″ lg. Rated at 1 A, 250 V; 6 A, 125 V.

81715	SPST	⅜″	$3.11	$2.49	$1.56	$1.24
81715-J	SPST	1⅛″	3.11	2.49	1.56	1.24
81721	SPDT	⅜″	3.49	2.79	1.75	1.40
81721-J	SPDT	1⅛″	3.49	2.79	1.75	1.40
81727	DPDT	⅜″	4.54	3.63	2.27	1.82
81727-J	DPDT	1⅛″	4.54	3.63	2.27	1.82

TWO-POSITION MAINTAINED ROTARY LOCK SWITCHES

3 AMP AC-DC CANOPY SERIES

Roller action contacts; laminated base; bright nickel finished exposed parts and dress nut. Slotted sleeve 15/32″-32 x 15/32″ lg. Solder lug terminals. Two keys provided with each switch. Rated at 1 A, 250 V; 3 A, 125 V.

A-H Number	Circuit	Key Removable	Net Each, Lots of 1-24	25-99	100-499	500-999
1561-L	SPST	Off	$3.54	$2.83	$1.77	$1.42
1561-LE	SPST	Both	3.54	2.83	1.77	1.42
1572-L	DPST	Off	4.48	3.58	2.24	1.79
1565-L	SPDT	Both	3.63	2.90	1.82	1.45
1575-L	DPDT	Both	4.49	3.59	2.25	1.80

6 AMP AC-DC INTERMEDIATE SERIES

Wiping blade contacts; molded phenolic base, bright nickel finished exposed parts and dress nut. Slotted sleeve 15/32″-32 x 15/32″ lg. Solder lug terminals. Two keys provided with each switch. Rated at 3 A, 250 V; 6 A, 125 V.

81715-L	SPST	Off	$3.97	$3.18	$1.99	$1.59
81715-LE	SPST	Both	3.97	3.18	1.99	1.59
81724-L	DPST	Off	5.04	4.03	2.52	2.02
81724-LC	DPST	Both	5.04	4.03	2.52	2.02
81721-L*	SPDT	Both	4.19	3.35	2.10	1.68
81727-L	DPDT	Both	5.46	4.37	2.73	2.18

*Rated at 1 A, 250 V; 6 A, 125 V.

6 AMP AC-DC HIGH SECURITY SWITCHES

High quality Corbin locks; wiping blade contacts; molded phenolic base. Bright nickel finished exposed parts and dress nut. Slotted sleeve ⅞″ dia. x 45/64″ lg. Solder lug terminals. Two keys provided with each switch. Rated at 3 A, 250 V; 6 A, 125 V.

81715-LQ61	SPST	Off	$15.62	$12.50	$7.81	$6.25
81721-LQ61*	SPDT	CCW	16.39	13.11	8.20	6.56
81724-LQ61	DPST	Off	17.16	13.73	8.58	6.86
81727-LQ61	DPDT	CCW	17.93	14.34	8.97	7.17
81715-LQ41	SPST	Both	15.62	12.50	7.81	6.25
81721-LQ41*	SPDT	Both	16.39	13.11	8.20	6.56
81724-LQ41	DPST	Both	17.16	13.73	8.58	6.86
81727-LQ41	DPDT	Both	17.93	14.34	8.97	7.17

*Rated at 1 A, 250 V; 6 A, 125 V.

MULTI-POSITION MAINTAINED ROTARY LOCK SWITCHES

Slow make-break contacts; molded phenolic base; slotted sleeve 15/32″-32 x ½″ lg. Rated at 20 A, 120–240 VAC; 1½ hp, 120 VAC; 2 hp, 240 VAC. **No. 82787-B:** Diecast lock; quick-connect terminals with 3/32″ hole in terminal. One lock key. **No. 70307-LA:** Stamped lock; screw terminals; two lock keys.

A-H Number	Circuit	Positions	Net Each, Lots of 1-24	25-99	100-499	500-999
82787-B	DPST	4	$4.62	$3.70	$2.31	$1.85
70307-LA	DPST	2	4.49	3.59	2.25	1.80

LOCK KEYS

Supplied in standard package of 25 pieces.

A-H Number	Key is Removable in Position	Net Each, Lots of 1-24	25-99	100-499	500-999
1561-487	Both	$0.37	$0.30	$0.19	$0.15
1561-488	Off only	.37	.30	.19	.15
1561-1487	Both	.37	.30	.19	.15
1561-1488	Off only	.37	.30	.19	.15
1561-1489	Both, 2″ shaft	.37	.30	.19	.15
B-721	For Illinois locks	.37	.30	.19	.15

AC-DC PORTABLE TOOL SWITCHES

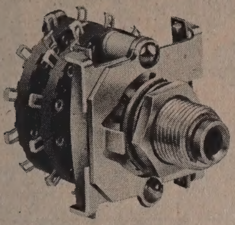
Momentary pressure lever switches feature all-molded construction and double insulated design. Specify screw or press-fit terminals. Rated at 8 A, 250 V; 16 A, 125 V; 1 hp, 125–250 V.

A-H Number	Description	Net Each, Lots of 1-24	25-99	100-499	500-999
83815-D	Momentary extended trigger	$3.52	$2.82	$1.76	$1.41
83815-DL*		4.18	3.34	2.09	1.67

*With locking latch.

CENTRALAB Rotary Switches

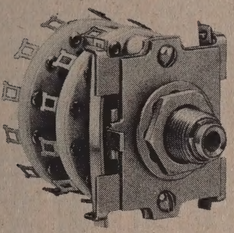
SWITCHES SERIES SA-200



1 INCH DIAMETER

Diallyl phthalate sections. Silver plated brass clips and contacts. One to three sections. Equivalent to Centralab PS and PSA series switches. 24 shorting and non-shorting type switches.

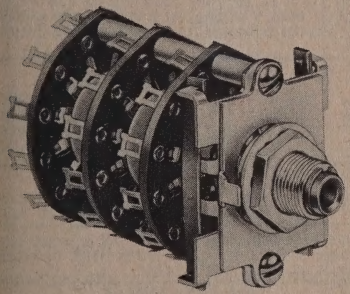
SERIES SA-6000



1.325 INCH DIAMETER

Ceramic sections. Gold plated coin silver alloy clips. Coin silver alloy contacts. One to two sections. 100 hour salt spray finish per MIL-S-3786. Equivalent to Centralab PA-6000 series switches. 16 shorting and non-shorting type switches.

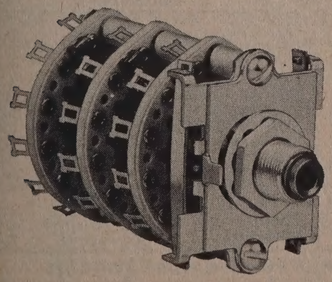
SERIES SA-1000



1.500 INCH DIAMETER

Phenolic sections. Silver plated brass clips and contacts. Equivalent to Centralab PA-1000 series switches. 22 shorting and non-shorting type switches.

SERIES SA-2000



1.500 INCH DIAMETER

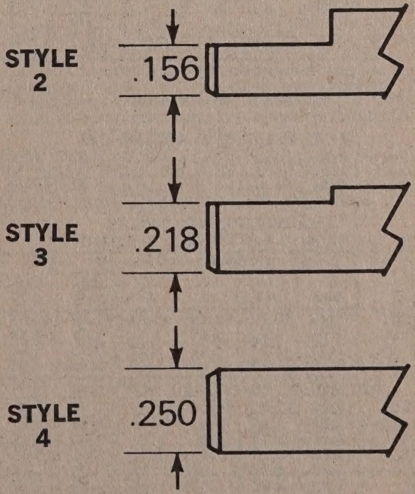
Ceramic sections. Silver plated brass clips and contacts. One to three sections. Equivalent to Centralab PA-2000 series switches. 30 shorting and non-shorting type switches.

SELECTASHAFT™ ROTARY SWITCHES

OVER 100,000 POSSIBLE CUSTOM SWITCH COMBINATIONS . . . ASSEMBLED FROM OUR STOCK TO YOUR SPECIFICATIONS

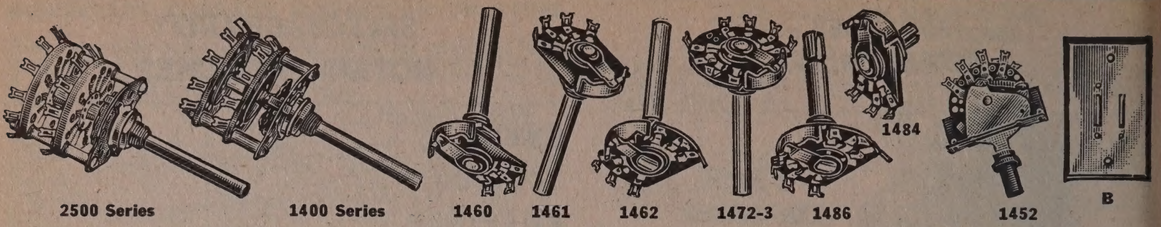
Just order the exact custom switch assembly that fits your design requirements. It takes just days to deliver. No factory delays. No set-up charges. No costly modifications required. With Centralab Selectashaft™ switches, you can choose the exact length shaft with the exact shaft end detail and the exact shaft flat angle to meet your requirements. Your order is custom assembled by our switch specialists, and the resulting product is indistinguishable in quality, performance and appearance from a factory assembled unit. All Selectashaft™ switches feature a new dual-ball, side-thrust mechanism for top index performance and exceptionally good torque and feel. Adjustable stops allow you to easily change number of positions. No disassembly or removal of stops tabs is required. Get all the Selectashaft™ facts from us. Write or call for Centralab Selectashaft rotary switch catalog. It is completely detailed with illustrations, specifications, circuit diagrams, standard switch equivalent tables and easy-to-read, how-to-order information.

SHAFTS



Three shaft styles: .156″ flat, .218″ flat and .250″ diameter plain round. 24 shaft lengths: .687″ to 2.375″ long from the mounting surface. 24 shaft flat angles in 15° increments.

CENTRALAB LEVER AND ROTARY SWITCHES



SERIES 2500 CERAMIC ROTARY SWITCHES

Highest quality (Grade L-422 or better) steatite insulation. Meet critical requirements of RF circuit applications. Bushing 3⁄8″-32 thread 3⁄8″ long. Shaft 2¼″ long, ¼″ full round. Sections 1⅞″ dia. Positive index 30° with adjustable stop. Index assemblies and hardware are identical and interchangeable with those of the 1400 Series. Switches include pointer knob, nut and lockwasher. Rated: 2.75 amps, 15 VDC; 350 mA, 115 VAC. Breakdown, 1500 VAC between critical parts. Shipping Weight, 5 oz. per section.

SERIES 1400 PHENOLIC ROTARY SWITCHES

Extremely compact design. Mounting bushings 3⁄8″-32 thread, 3⁄8″ long. Shafts 2¼″ from mtg. surface; ¼″ full round. Sections 1⅞″ dia. Positive 30° index with adjustable stop. With mounting nut, lockwasher and pointer knob. Index assemblies and hardware are identical and interchangeable with those of 2500 series. Rated: 2.75 amps at 15 VDC; 350 mA at 115 VAC. Breakdown, 1000 VAC rms. Shipping Weight, 4 oz. per section.

ROTARY SELECTOR SWITCHES

Ceramic Types CRL Number		No. Sections	Total No. Poles	No. Positions	Phenolic Types CRL Number	
Shorting	Non-Short.				Shorting	Non-Short.
2500	2501	1	1	2–6	1400	1401
2502	2503	1	1	2–11	1402	1403
2504	2505	1	2	2–5	1404	1405
2510	2511	2	2	2–6	1410	1411
2512	2513	2	2	2–11	1412	1413
2506	2507	1	3	2–3	1406	1407
2520	2521	3	3	2–6	1420	1421
2522	2523	3	3	2–11	1422	1423
....	....	1	4	2	1408	1409
2514	2515	2	4	2–5	1414	1415
....	....	4	4	2–6	1426	1427
....	....	4	4	2–11	1428	1429
2516	2517	2	6	2–3	1416	1417
2524	2525	3	6	2–5	1424	1425
....	....	2	8	2	1418	1419
....	....	4	8	2–5	1430	1431

SEPARATE SECTIONS

Deluxe Types: .187″ rotor slot, use P-270, P-271, P-272 indexes.

Ceramic Types CRL Number		No. Poles	No. Positions	Phenolic Types CRL Number	
Shorting	Non-Short.			Shorting	Non-Short.
TD	XD	1	2–6	AD	HD
UD	YD	1	2–11	BD	JD
RD	RRD	2	2–5	CD	KD
SD	SSD	3	2–3	DD	LD
VD	ZD	4	2	ED	MD
....	......	4	2–3	EED	BBD
....	......	1	2–5	FD**	AAD**
GGD*	FFD*	1	2–11	GD*	CCD*
PISD‡	......	1	2–10	PID‡	......
NSD and PSD	......	Resistance Decade†		ND and PD	......
QSD	......	Capacitance Decade		QD	......

*All unused contacts connected and shorted out. ‡9 contacts, open in full CW, progressively picked up and shorted to common with CWW rotation. †Combine for resistance decade switch. **Unused contacts one side of common connected and shorted out.

SEPARATE INDEX ASSEMBLIES

Deluxe Type: 1-piece shaft .187″ thick flat; use deluxe 1400 or 2500 Series sections. Complete assembly has index, pointer knob and hardware. **No. P-270:** For 1–3 sections; 2″ rear shaft. **No. P-271:** 3–5 sects.; 4″ rear shaft. **No. P-272:** 5–10 sects.; 8″ rear shaft.

INDUSTRIAL NET PRICES

CERAMIC SWITCHES, SECTIONS

CRL Number	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249	Bulk 100-300
2500—2507	$3.26	$2.72	$2.44	$2.33	$2.17	$1.95	$1.73
2510—2517	4.64	3.87	3.49	3.32	3.09	2.78	2.46
2520—2525	5.96	4.97	4.48	4.27	3.98	3.56	3.16
All Sections	1.56	1.30	1.18	1.12	1.05	.94	.....
PHENOLIC SWITCHES, SECTIONS							
1400—1409	$2.90	$2.42	$2.18	$2.08	$1.94	$1.74	$1.54
1410—1419	3.54	2.95	2.66	2.53	2.37	2.12	1.88
1420—1425	4.51	3.75	3.39	3.22	3.00	2.70	2.39
1426—1431	5.19	4.32	3.89	3.71	3.47	3.10	2.75
AAD, CCD	1.23	1.02	.92	.88	.83	.74	.....
AD—HD	1.23	1.02	.92	.88	.83	.74	.....
BBD, EED	1.56	1.30	1.18	1.12	1.05	.94	.....
JD—QD	1.23	1.02	.92	.88	.83	.74	.....
PID	1.23	1.02	.92	.88	.83	.74	.....
INDEX ASSEMBLIES							
P-270	$1.82	$1.52	$1.36	$1.30	$1.21	$1.09	.....
P-271	2.31	1.93	1.74	1.65	1.54	1.39	.....
P-272	3.14	2.62	2.35	2.23	2.09	1.88	.....

ROTARY ACTION FLAT SWITCHES

Laminated phenolic insulation. Rated: 1.75 amps, 28 VDC; 350 mA, 115 VAC. Breakdown, 1000 VAC rms. Bushing 3⁄8″-32 thread, 3⁄8″ long. Shaft ¼″ dia., 2¼″ long. Shipping Weight, 3 oz.

CRL No.	No. Poles	No. Pos.	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
1451*†	4	2	$2.77	$2.31	$2.08	$1.98	$1.85	$1.66
1488*†	6	3	4.16	3.47	3.12	2.97	2.77	2.49
1489*‡	6	3	4.16	3.47	3.12	2.97	2.77	2.49

*Non-shorting. †Spring return. ‡Combination positive and spring return index.

GENERAL PURPOSE SWITCHES

Laminated phenolic insulation. Rated: 1.5 amps, 28 VDC; 230 mA, 115 VAC. Breakdown, 1000 VAC rms. Bushing 3⁄8″-32 thread, 3⁄8″ long except 1484, ¼″. Positive index unless otherwise noted.

CRL No.	No. Poles	No. Pos.	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
1460	1	2	$1.25	$1.01	$0.95	$0.90	$0.84	$0.75
1461	1	3	1.25	1.01	.95	.90	.84	.75
1462	2	2	1.25	1.01	.95	.90	.84	.75
1463*†	1	2	1.25	1.01	.95	.90	.84	.75
1464*†	2	2	1.25	1.01	.95	.90	.84	.75
1465‡	1	4‡	2.09	1.74	1.57	1.50	1.41	1.25
1472*	2	3	1.25	1.01	.95	.90	.84	.75
1473	2	3	1.25	1.01	.95	.90	.84	.75
1483§	1	3	.88	.74	.66	.63	.58	.53
1484♯	1	3	1.03	.86	.78	.74	.69	.62
1486•	2	3	1.25	1.01	.95	.90	.84	.75

*Non-shorting; all others shorting. †Spring return indexing. ‡3 active with AC-DPST line switch. §Remote speaker switch. ♯Remote auto radio spkr. switch. •Remote stereo spkr. switch.

LEVER ACTION SWITCHES

Mounted singly or in groups on special plates; adaptable to intercoms, PA, test instruments, broadcast, industrial applications. Positive and/or spring return index design with shtg. or non-shtg. contacts. Laminated phenolic insulation; clips and contacts, silver-plated brass. Rated 1.5 A at 28 VDC, 230 mA at 115 VAC. Two-hole mtg. bkt. supplied with 6-32 tapped holes. Single switch 7⁄16″ w. x 1⅞″ h. x 1½″ d. behind panel. With knob and mtg. hdwe. Shpg. Wt., 4 oz.

CRL No. Shorting	CRL No. Non-Shorting	No. Poles	No. Pos.	Index	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
1452	1454	2	3	Pos.	$1.76	$1.46	$1.32	$1.25	$1.18	$1.06
1453	1455	2	3	Sp.	1.76	1.46	1.32	1.25	1.18	1.06
1466	1467	2	3	Pos.. Sp.	1.76	1.46	1.32	1.25	1.18	1.06
1456	1457	4	2	Sp.	1.96	1.63	1.47	1.40	1.31	1.18
1459	1458	4	2	Pos.	1.96	1.63	1.47	1.40	1.31	1.18

Mounting Plates for Lever Switches (Fig. B)—For use in electrical outlet boxes. Satin chrome steel with mtg. holes 3 5⁄16″ between centers. Shipping Weight, 4 oz. Size, 2¾″ x 4½″.

CRL No.	No. Switches	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
P-221	2	$0.69	$0.58	$0.52	$0.51	$0.46	$0.42
P-222	1	.69	.58	.52	.51	.46	.42

PACKAGED SWITCH HARDWARE

FOR 1400 AND 2500 SERIES SWITCHES

CRL No.	Description	Pkg. 100	CRL No.	Description	Pkg. 100
P-124	¼″ metal spacer	$2.18	P-145	7″ screw	$17.60
P-125	3⁄8″ metal spacer	2.18	P-146	9″ screw	17.60
P-126	½″ metal spacer	2.18	P-147	Nut	1.98
P-127	¾″ metal spacer	2.18	P-148	Lockwasher	1.98
P-128	1″ metal spacer	2.18	P-177	Phenol. spacer wshr.	1.98
P-136	1″ screw	2.18	P-181	⅛″ steatite spacer	5.28
P-137	1½″ screw	2.18	P-187	¼″ steatite spacer	5.28
P-138	2″ screw	5.28	P-188	3⁄8″ steatite spacer	5.28
P-139	2½″ screw	5.28	P-189	½″ steatite spacer	5.28
P-149	4¼″ screw	9.24	P-190	5⁄8″ steatite spacer	9.24
P-143	5″ screw	14.74	P-192	1″ steatite spacer	9.24

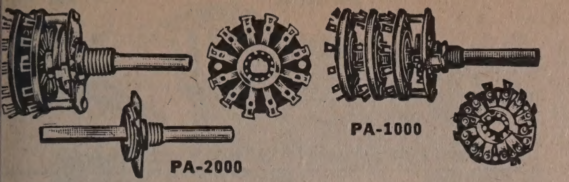
FOR PA-6000 SERIES MILITARY SWITCHES

CRL No.	Description	Pkg. 100	CRL No.	Description	Pkg. 100
P-395	Min. MIL screw	$9.24	P-397	Min. MIL lockwasher	$2.42
P-396	Min. MIL nut	2.42	P-398	MIL spacer washer	2.42

FOR PS-100 SERIES SUBMINIATURE SWITCHES

CRL No.	Description	Pkg. 100	CRL No.	Description	Pkg. 100
P-515	1⅛″ screw	$9.24	P-522	1⁄16″ steatite spacer	$1.98
P-516	Nut	1.98	P-523	3⁄16″ steatite spacer	1.98
P-519	Spacer washer	1.98	P-524	5⁄32″ steatite spacer	1.98
P-520	⅛″ steatite spacer	1.98	P-527	Lockwasher	1.98
P-521	3⁄32″ steatite spacer	1.98			

CENTRALAB Miniature Switches



ERIES PA-2000 MINIATURE CERAMIC SWITCHES

nsulated with Grade L-422, or better, steatite; only 1½″ dia. (⅜″ maller than standard switches). Same ratings as larger switches. eatures maximum voltage flashover; high Q, low loss steatite ody; minimum intercircuit capacity; insulated front-back clips. urable construction. Rated: 2.75 amps, 15 VDC; 230 mA, 115 AC, make-break resistive load. Breakdown, 1500 VAC rms etween critical parts. One-piece shaft for accurate indexing. Adustable stop or continuous rotation; mounts in single hole with ocating lug. Bushing ⅜″-32 thread, ⅜″ long. Shaft, full round ¼″ ia. x 2¼″ long from mtg. surface. With mtg. nut, lockwasher and nob. Shpg. Wt., 3 oz. per section. **Bulk switches supplied less nobs and instruction sheets. For switches to meet military pecifications, write for prices and information.**

ERIES PA-1000 MINIATURE PHENOLIC SWITCHES

nsulated with type PBE laminated phenolic per MIL-3115-B. ame size as PA-2000 ceramic switches. Rated: 2.75 amps, 15 DC; 230 mA, 115 VAC. Breakdown, 1500 VAC. Positive, adustable stop or continuous rotation; 30° or 60° detents available. upplied with knob and instruction sheet. Shpg. Wt., 3 oz. per ection. **Bulk switches supplied less knobs and instruction sheets. ilitary specifications available as above.**

MINIATURE ROTARY SWITCHES

No. Sect.	Total No. Poles	PA-2000 Ceramic			PA-1000 Phenolic		
		CRL No. PA- Shtg.	CRL No. PA- Non-Shtg.	Total Pos.	CRL No. PA- Shtg.	CRL No. PA- Non-Shtg.	Total Pos.
1	1	2000	2001	2–12	1000	1001	2–11
1	2	2002	2003	2–6	1002	1003	2–5
2	2	2004	2005	2–12	1004	1005	2–11
1	3	2006	2007	2–5	1006	1007	2–3
3	3	2008	2009	2–12	1008	1009	2–11
1	4	....	....	....	1010	1011	2
2	4	2010	2011	2–6	1012	1013	2–5
4	4	2012	2013	2–12	1014	1015	2–11
1	5	2014	2015	2–3	....	....	....
5	5	2016	2017	2–12	1016	1017	2–11
1	6	2018	2019	2	....	....	....
2	6	2020	2021	2–5	1018	1019	2–3
3	6	2022	2023	2–6	1020	1021	2–5
6	6	2024	2025	2–12	1022	1023	2–11
2	8	....	....	....	1024	1025	2
4	8	2026	2027	2–6	1026	1027	2–5
3	9	2028	2029	2–5	....	....	....
3	12	....	....	....	1028	1029	2
2	10	2030	2031	2–3	....	....	....
5	10	2032	2033	2–6	1030	1031	2–5
2	12	2034	2035	2	....	....	....
6	12	2036	2037	2–6	1032	1033	2–5
3	15	2038	2039	2–3	....	....	....
3	18	2040	2041	2	....	....	....

SPECIAL CIRCUIT AND 60° INDEXING SWITCHES

1	1	2052*	....	2–10	1034*	....	2–10
1	1	2042†	....	2–10	1040†	....	2–10
2	2	2048‡	2049‡	2–12	....	....	....
2	2	2050§	....	4	....	....	....
1	1	....	2043#	2–6	....	1035#	2–6
2	2	....	2045#	2–6	....	1037#	2–6

*All shorted to common in full CCW, progressively opened and dropped with CW rotation. †All open in full CCW, progressively picked up and shorted to common with CW rotation. ‡Silver clips and contacts. §For switching dual lines. #60° Indexing; 1½″ spacing between sections.

SEPARATE SECTIONS

For use with 30° index assemblies No. PA-300, PA-301 and PA-302, except Nos. PA-17, PA-20 and PA-45, for use with 60° index assemblies PA-304 and PA-305.

CRL No. PA-0 thru -20—Net Each, Lots of: 1–4, **$1.52;** 5–9, **$1.27;** 10–24, **$1.14;** 25–49, **$1.09;** 50–99, **$1.01;** 100–249, **$0.91.**

CRL No. PA-30 thru -49—Net Each, Lots of: 1–4, **$1.10;** 5–9, **$0.91;** 10–24, **$0.83;** 25–49, **$0.79;** 50–99, **$0.74;** 100–249, **$0.66.**

No. Poles	Indexing	PA-2000 Ceramic			PA-1000 Phenolic		
		CRL No. PA- Shtg.	CRL No. PA- Non-Shtg.	Total Pos.	CRL No. PA- Shtg.	CRL No. PA- Non-Shtg.	Total Pos.
1	30°	0	1	2–12	30	31	2–11
2	30°	2	3	2–6	32	33	2–5
3	30°	4	5	2–5	34	35	2–3
4	30°	....	....	....	36	37	2
5	30°	6	7	2–3	....	....	....
6	30°	8	9	2	....	....	....
1	30°	10*	19*	2–5	38*	39*	2–5
2	30°	11†	18†	2–11	40†	41†	2–11
1	30°	12§	....	2–10	43‡	....	2–10
1	30°	13‡	....	2–10	49§	....	2–10
1	60°	20	17	2–6	....	45	2–6

*Unused contacts one side of common connected and shorted out. †All unused contacts connected and shorted out. ‡Active contacts shorted to common in full CCW, progressively opened and dropped with CW rotation. §All active contacts open in full CCW, progressively picked up and shorted to common with CW rotation.

SILVER CLIPS AND CONTACTS (CERAMIC)

Net Each, Lots of: 1–4, **$2.49;** 5–9, **$2.07;** 10–24, **$1.87;** 25–49, **$1.78;** 50–99, **$1.66;** 100–249, **$1.49.**

CRL Number Shorting	CRL Number Non-Shorting	Index	No. of Poles	No. of Positions
PA-16	PA-21	30°	1	2–12
PA-14	PA-23	30°	2	2–6
PA-15	PA-24	30°	4	2

INDUSTRIAL NET PRICES
SERIES PA-2000 CERAMIC

CRL No. PA- Shtg.	CRL No. PA- Non-Shtg.	Unit Pkg., Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249	Bulk 100-300
2000	2001	$3.04	$2.53	$2.28	$2.17	$2.02	$1.82	$1.61
2002	2003	3.04	2.53	2.28	2.17	2.02	1.82	1.61
2004	2005	4.29	3.58	3.22	3.07	2.86	2.56	2.29
2006	2007	3.04	2.53	2.28	2.17	2.02	1.82	1.61
2008	2009	5.48	4.57	4.11	3.92	3.65	3.28	2.90
2010	2011	4.29	3.58	3.22	3.07	2.86	2.56	2.29
2012	2013	6.58	5.48	4.94	4.71	4.39	3.94	3.50
2014	2015	3.04	2.53	2.28	2.17	2.02	1.82	1.61
2016	2017	7.88	6.57	5.91	5.63	5.26	4.72	4.17
2018	2019	3.04	2.53	2.28	2.17	2.02	1.82	1.61
2020	2021	4.29	3.58	3.22	3.07	2.86	2.56	2.29
2022	2023	5.48	4.57	4.11	3.92	3.65	3.28	2.90
2024	2025	9.15	7.63	6.86	6.55	6.11	5.48	4.84
2026	2027	6.58	5.48	4.94	4.71	4.39	3.94	3.50
2028	2029	5.48	4.57	4.11	3.92	3.65	3.28	2.90
2030	2031	4.29	3.58	3.22	3.07	2.86	2.56	2.29
2032	2033	7.88	6.57	5.91	5.63	5.26	4.72	4.17
2034	2035	4.29	3.58	3.22	3.07	2.86	2.56	2.29
2036	2037	9.15	7.63	6.86	6.55	6.11	5.48	4.84
2038	2039	6.20	5.17	4.65	4.43	4.14	3.72	3.28
2040	2041	6.20	5.17	4.65	4.43	4.14	3.72	3.28
2042	2043	2.75	2.29	2.07	1.97	1.84	1.65	1.45
.....	2045	3.81	3.17	2.86	2.72	2.54	2.28	2.02
2048	2049	6.20	5.17	4.65	4.43	4.14	3.72	3.28
2050	......	3.04	2.53	2.28	2.17	2.02	1.82	1.61
2052	......	2.75	2.29	2.07	1.97	1.84	1.65	1.45
SERIES PA-1000 PHENOLIC								
1000	1001	$2.29	$1.90	$1.72	$1.64	$1.53	$1.36	$1.21
1002	1003	2.29	1.90	1.72	1.64	1.53	1.36	1.21
1004	1005	3.26	2.72	2.44	2.33	2.17	1.95	1.72
1006	1007	2.29	1.90	1.72	1.64	1.53	1.36	1.21
1008	1009	4.14	3.44	3.10	2.96	2.76	2.48	2.18
1010	1011	2.29	1.90	1.72	1.64	1.53	1.36	1.21
1012	1013	3.26	2.72	2.44	2.33	2.17	1.95	1.72
1014	1015	4.82	4.02	3.62	3.44	3.21	2.88	2.56
1016	1017	5.68	4.73	4.26	4.06	3.79	3.40	3.00
1018	1019	3.26	2.72	2.44	2.33	2.17	1.95	1.72
1020	1021	4.14	3.44	3.10	2.96	2.76	2.48	2.18
1022	1023	6.42	5.36	4.82	4.60	4.29	3.85	3.40
1024	1025	3.26	2.72	2.44	2.33	2.17	1.95	1.72
1026	1027	4.82	4.02	3.62	3.44	3.21	2.88	2.56
1028	1029	4.14	3.44	3.10	2.96	2.76	2.48	2.18
1030	1031	5.68	4.73	4.26	4.06	3.79	3.40	3.00
1032	1033	6.42	5.36	4.82	4.60	4.29	3.85	3.40
1034	1035	2.29	1.90	1.72	1.64	1.53	1.36	1.21
.....	1037	3.26	2.72	2.44	2.33	2.17	1.95	1.72
1040	......	2.29	1.90	1.72	1.64	1.53	1.36	1.21

SEPARATE INDEX ASSEMBLIES

Index assemblies for series PA-1000 and PA-2000 interchangeable.

CRL No. PA-300 Assembly—Contains PA-300 (30°) index, P-120 pointer knob, adjustable stop plate, two ⅛″ spacers, two 9/32″ spacers, four 7/16″ spacers, 2½″ tie bolts, nuts, lockwashers and fiber spacer washers. Rear shaft length 2″. Use with 1 to 3 sections.

CRL No. PA-301 Assembly—Contains PA-301 index (30°), P-120 pointer knob, adjustable stop plate, two ⅛″ spacers, two 9/32″ spacers, ten 7/16″ spacers, four 15/16″ spacers, 5″ tie bolts and hardware. Rear shaft length 4″. Use with 4 to 6 sections.

CRL No. PA-302 Assembly—Contains PA-302 (30°) index, P-120 pointer knob, adjustable stop plate, four 3/16″ spacers, two 9/32″ spacers, sixteen 7/16″ spacers, eight 15/16″ spacers, 7″ tie bolts, and hardware. Rear shaft length 6″. Use with 7 to 9 sections.

CRL No. PA-304 Assembly—Contains PA-304 (60°) index and hardware same as PA-300. Rear shaft length 2″. Use with 1 to 3.

CRL No. PA-305 Assembly—Contains PA-305 (60°) index and hardware same as PA-301. Rear shaft length 4″. 4 to 6 sections.

CRL No.	Indexing	Net Each, Lots of 1-4	5-9	10-24	25-49	50-99	100-249
PA-300	30°	$1.65	$1.38	$1.24	$1.18	$1.10	$0.99
PA-301	30°	2.18	1.82	1.64	1.56	1.45	1.31
PA-302	30°	2.84	2.37	2.13	2.02	1.89	1.71
PA-304	60°	1.65	1.38	1.24	1.18	1.10	.99
PA-305	60°	2.31	1.93	1.74	1.65	1.54	1.39

PACKAGED SWITCH HARDWARE
FOR PA-1000 & PA-2000 SERIES MINIATURE SWITCHES

CRL No.	Description	Pkg. 100	CRL No.	Description	Pkg. 100
P-319	Min. stop plate	$5.28	P-348	⅞″ steatite spacer	$ 5.28
P-325	⅛″ steatite spacer	5.28	P-350	15/16″ steatite spacer	5.28
P-326	3/16″ steatite spacer	5.28	P-352	1″ steatite spacer	5.28
P-328	¼″ steatite spacer	5.28	P-362	1″ screw	3.08
P-329	9/32″ steatite spacer	5.28	P-370	2″ screw	5.28
P-330	5/16″ steatite spacer	5.28	P-374	2½″ screw	5.28
P-332	⅜″ steatite spacer	5.28	P-382	4″ screw	9.24
P-334	7/16″ steatite spacer	5.28	P-384	5″ screw	9.24
P-336	½″ steatite spacer	5.28	P-388	7″ screw	13.20
P-340	⅝″ steatite spacer	5.28	P-390	Nut	1.98
P-342	11/16″ steatite spacer	5.28	P-392	Lockwasher	1.98
P-344	¾″ steatite spacer	5.28	P-394	Phen. spacer washer	1.98

CENTRALAB MINIATURE AND SUBMINIATURE SWITCHES

MIL-S-3786 STYLE SRO3
MINIATURE CERAMIC SWITCHES

Designed to meet MIL-S-3786. Insulated with Grade L-422, or better, steatite, Dow Corning 200 Silicone treated against surface moisture. Breakdown, 1000 VAC rms between critical parts. Coin silver clips and contacts; hot tin-dipped terminals. Adjustable stops or continuous rotation on 30° index. Ceramic sections 1 9/32″ dia. x .125″ th. Single hole mounting with locating lug at 17/32″ radius. Bushing, ⅜″-32NEF-2A threaded, ⅜″ lg. from mtg. surface. Shaft ¼″ dia. full round, 2¼″ lg. from mtg. surface. With nut, lockwasher and P-120 pointer knob. Rating: 450 mA at 115 VAC; 8 amps, 6 VDC; 5.5 amps, 12 VDC (make-break resistive load).

SERIES PA-6000 SWITCHES

CRL Number		Poles to Section	No. Sections	No. Poles	No. Positions
Shorting	Non-Short				
PA-6000	PA-6001	1	1	1	2–11
PA-6002	PA-6003	2	1	2	2–5
PA-6004	PA-6005	1	2	2	2–11
PA-6006	PA-6007	3	1	3	2–3
PA-6010*	PA-6011*	4	1	4	2
PA-6012	PA-6013	2	2	4	2–5
PA-6018	PA-6019	3	2	6	2–3
PA-6024*	PA-6025*	4	2	8	2

*Fixed, 2-position stop.

SEPARATE INDEX ASSEMBLY

CRL No. PA-600—Used with PA-60, PA-70 or PA-80 separate sections to assemble special units of 1 to 4 sections; 30° indexing. Rear shaft 2″ long.

SEPARATE SECTIONS, 30° INDEXING

Used with PA-600 index assembly. Hot solder-dipped terminals. Coin silver clips and contacts. Switch sections are 1 9/32″ dia. and rated 1000 VAC rms breakdown between critical parts. Phenolic units .062″ thick; others .125″ thick.

Total Poles	No. Pos.	Phenolic Secs.		Mycalex* Secs.		Ceramic Secs.	
		Shorting	Non-Short.	Shorting	Non-Short.	Shorting	Non-Short.
1	2–11	PA-60	PA-61	PA-70	PA-71	PA-80	PA-81
2	2–5	PA-62	PA-63	PA-72	PA-73	PA-82	PA-83
3	2–3	PA-64	PA-65	PA-74	PA-75	PA-84	PA-85
4	2	PA-66	PA-67	PA-76	PA-77	PA-86	PA-87

INDUSTRIAL NET PRICES

CRL Number	Net Each, Lots of					
	1-4	5-9	10-24	25-49	50-99	100-249
PA-6000 thru PA-6003	$3.94	$3.28	$2.95	$2.82	$2.63	$2.35
PA-6004 and PA-6005	6.01	5.01	4.51	4.29	4.00	3.60
PA-6006 thru PA-6011	3.94	3.28	2.95	2.82	2.63	2.35
PA-6012 thru PA-6025	6.01	5.01	4.51	4.29	4.00	3.60
PA-600	1.65	1.38	1.24	1.18	1.10	.99
PA-60 thru PA-67	1.56	1.30	1.18	1.12	1.05	.94
PA-70 thru PA-77	2.29	1.90	1.72	1.64	1.53	1.36
PA-80 thru PA-87	2.29	1.90	1.72	1.64	1.53	1.36

NOTE: Items requiring certified test data and government source inspection are special. Prices and information supplied on request.

*Mycalex Corp. of America TM.

MULTIPLE POSITION SWITCHES

Laminated phenolic insulation, type PBE per MIL-P-3115. Voltage breakdown between critical parts 1000 VAC, rms. Bushing ⅜″ thd., ⅜″ lg. Shaft ¼″ dia., 2¼″ lg. from mtg. surface. **PA-3000 Series**—18 position. Rated 2.25 amps, 28 VDC; 350 mA, 115 VAC (make-break resistive load). Provides accurate, crisp indexing in both single and multiple-section versions through use of new hill-and-dale index. Sections 2 11/64″ w. x 2 5/16″ h. x 1/16″ thick. Positive 20° indexing. **PA-4000 Series**—24 position. Rated 2.75 amps, 28 VDC; 230 mA, 115 VAC. Sections 1¾″ w. x 2 5/16″ h. x 1/16″ thick. Shpg. Wt., 4 oz. per section.

CRL No. PA-		*	No. Pos.	Net Each, Lots of					
Short.	Non-Short.			1-4	5-9	10-24	25-49	50-99	100-249
3000	3001	1	2-17	$2.46	$2.06	$1.85	$1.76	$1.64	$1.47
3002	3003	2	2-17	3.80	2.95	2.69	2.53	2.36	2.16
3004	3005	3	2-17	4.64	3.87	3.49	3.32	3.10	2.78
3006	3007	4	2-17	5.65	4.71	4.25	4.05	3.77	3.39
4000	4001	1	2-23	2.62	2.18	1.97	1.87	1.75	1.56
4002	4003	2	2-23	3.85	3.21	2.89	2.75	2.57	2.31
4004	4005	3	2-23	5.04	4.20	3.77	3.60	3.36	3.01
4006	4007	4	2-23	6.03	5.03	4.52	4.31	4.03	3.61

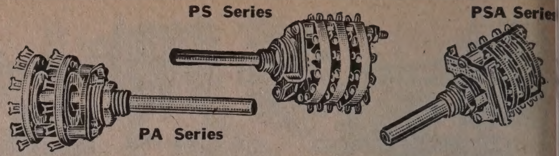
*Number of poles and number of sections.

SERIES PS SUBMINIATURE ROTARY SWITCHES

Deluxe, ceramic insulated rotary switches that are ultra-small. Weigh less than 1 oz. each, yet have the same electrical ratings as switches much heavier and larger. Ideally suited for band switching, transistor circuits, aircraft instruments, etc. Insulation is Dow Corning 200 Silicone treated Grade L-422, or better, steatite; breakdown, 750 VAC rms between critical parts. **Size:** ⅛″ thick ceramic sections and ceramic spacers; spacing between front plate and first section, 5/32″. All hardware except clips, contacts, and index spring are of cadmium plated steel. **Mounting:** Single hole with optional locating lug on ⅜″ radius. Bushing ¼″-32 thread, ¼″ long. Shaft ⅛″ dia. x 1¼″ long. **Rated:** Make and break, resistance load .550 amp at 28 volts DC, 170 milliamps at 115 VAC. **Index:** Positive 30°; fixed stop.

CRL Number		Total Poles	No. Pos.	‡	No. Sec.
*	†				
PS-100	PS-101	1	11	1	1
PS-102	PS-103	2	11	1	2
PS-104	PS-105	2	5	2	1
PS-106	PS-107	3	11	1	3
PS-108	PS-109	3	3	3	1
PS-110	PS-111	4	5	2	2
PS-112	PS-113	4	2	4	1
PS-114	PS-115	6	5	2	3
PS-116	PS-117	6	3	3	2
PS-118	PS-119	8	2	4	2
PS-120	PS-121	9	3	3	3
PS-122	PS-123	12	2	4	3

*Shorting. †Non-shorting. ‡Poles per section.



SERIES PS SEPARATE SECTIONS (CONTINUED)

Ceramic* CRL No.		Phenolic* CRL No.		Total Poles	No. Pos.	Fixed Stop Indexing
Short.	Non-Short.	Short.	Non-Short.			
PS-20	PS-21	PS-40	PS-41	1	11	Use P-501 thru P-511
PS-22	PS-23	PS-42	PS-43	2	5	
PS-24	PS-25	PS-44	PS-45	3	3	
PS-26	PS-27	PS-46	PS-47	4	2	

*Breakdown voltage, 750 VAC rms.

SEPARATE INDEX ASSEMBLIES

Designed for maximum of three sections. Includes: Index and shaft assembly; hardware and instructions.

CRL No.	No. of Pos.
P-501	2
P-502	3
P-503	4
P-504	5
P-505	6
P-506	7
P-507	8
P-508	9
P-509	10
P-510	11
P-511	Continuous Rotation

INDUSTRIAL NET PRICES

CRL Number		Net Each, Lots of					
Shorting	Non-Short.	1-4	5-9	10-24	25-49	50-99	100-249
PS-100	PS-101	$5.54	$4.62	$4.16	$3.96	$3.70	$3.32
PS-102	PS-103	6.90	5.78	5.19	4.95	4.62	4.15
PS-104	PS-105	5.54	4.62	4.16	3.96	3.70	3.32
PS-106	PS-107	8.32	6.93	6.24	5.95	5.54	4.97
PS-108	PS-109	5.54	4.62	4.16	3.96	3.70	3.32
PS-110	PS-111	6.90	5.78	5.19	4.95	4.62	4.15
PS-112	PS-113	5.54	4.62	4.16	3.96	3.70	3.32
PS-114	PS-115	8.32	6.93	6.24	5.95	5.54	4.97
PS-116	PS-117	6.90	5.78	5.19	4.95	4.62	4.15
PS-118 thru PS-123		8.32	6.93	6.24	5.95	5.54	4.97
PS-20 thru PS-27		2.42	2.01	1.82	1.73	1.62	1.45
PS-40 thru PS-47		1.94	1.62	1.45	1.39	1.29	1.16
P-501 thru P-511		2.15	1.79	1.62	1.54	1.43	1.29

SERIES PSA SUBMINIATURE ROTARY SWITCHES

Feature all-new index mechanism with adjustable stops. Rugged, 2-ball-starwheel lateral thrust construction for excellent torque control. For use in band-switching, ultra small electronic equipment, transistor circuits, aircraft instruments, etc. Stator and rotor have diallyl phthalate insulation; resistance, 900,000 megs. **Size:** Furnished with diallyl phthalate sections .203″ ±.005″ thick across strut holes, .080″ thick across clip surface-to-surface. Spaced 9/32″ between front plate and clip surface of first section and 5/32″ spacing between sections. **Mounting:** Bushing, ⅜″-32 NEF thread x ⅜″ long; locating lug on ⅜″ radius. Shaft, ¼″ dia. x 1⅜″ long from mtg. surface. All hardware plated to resist corrosion; index spring, strut screws and lockwashers stainless steel; clips and rotor contacts, silver-plated brass. **Rated:** Make and break resistive load .550 A at 28 VDC, 170 mA at 115 VAC. **Index:** Positive 30° with adjustable stops.

CRL Number		Total Poles	No. of Positions	Poles per Sec.	No. of Sections
Shorting	Non-Shorting				
PSA-200	PSA-201	1	2–12	1	1
PSA-202	PSA-203	2	2–6	2	1
PSA-204	PSA-205	2	2–12	1	2
PSA-206	PSA-207	3	2–5	3	1
PSA-208	PSA-209	3	2–12	1	3
PSA-210	PSA-211	4	2–6	2	2
PSA-214	PSA-215	5	2–3	5	1
PSA-220	PSA-221	6	2–5	3	2
PSA-222	PSA-223	6	2–6	2	3
PSA-228	PSA-229	9	2–5	3	3
PSA-230	PSA-231	10	2–3	5	2
PSA-238	PSA-239	15	2–3	5	3

DIALLYL PHTHALATE SEPARATE SECTIONS

CRL Number		Total Poles	No. Pos.
Shtg.	Non-Shtg.		
PS-50	PS-51	1	2–12
PS-52	PS-53	2	2–6
PS-54	PS-55	3	2–5
PS-56	PS-57	5	2–3

INDEX ASSEMBLIES

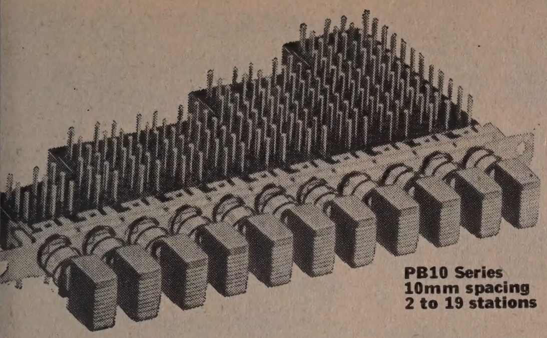
Includes index, hardware and instructions; PS-20 and PS-40 sections can also be used.

CRL No.	No. Pos.	No. Sec.
PSA-512	2–12	1–2
PSA-513	2–12	3–5

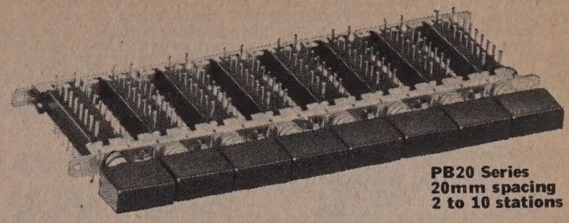
INDUSTRIAL NET PRICES

CRL No. PSA-		Net Each, Lots of						Bulk 100-300
Shorting	Non-Short.	1-4	5-9	10-24	25-49	50-99	100-249	
200 thru	203	$5.28	$4.40	$3.96	$3.76	$3.52	$3.17	$2.81
204	205	6.60	5.50	4.95	4.71	4.40	3.96	3.51
206	207	5.28	4.40	3.96	3.76	3.52	3.17	2.81
208	209	7.92	6.60	5.94	5.64	5.28	4.75	4.20
210	211	6.60	5.50	4.95	4.71	4.40	3.96	3.51
214	215	5.28	4.40	3.96	3.76	3.52	3.17	2.81
220	221	6.60	5.50	4.95	4.71	4.40	3.96	3.51
222 thru	231	7.92	6.60	5.94	5.64	5.28	4.75	4.20
238	239	8.58	7.15	6.44	6.11	5.75	5.15	4.55
512	513	2.15	1.79	1.62	1.54	1.43	1.29	1.14
PS-50 thru PS-57		1.98	1.65	1.59	1.42	1.32	1.19	....

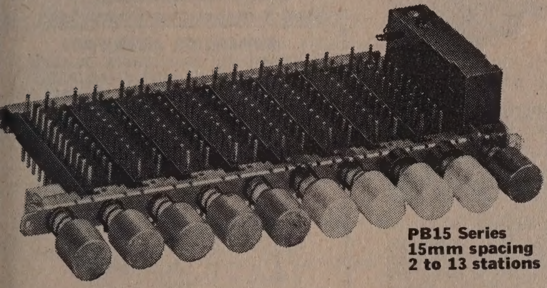
CENTRALAB Pushbutton Switches



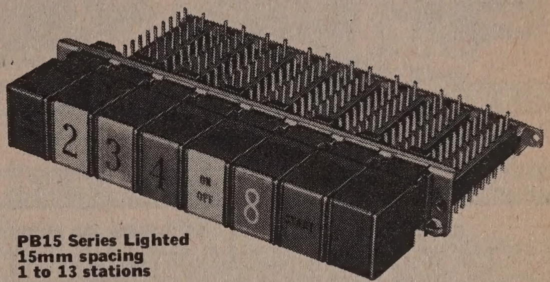
PB10 Series
10mm spacing
2 to 19 stations



PB20 Series
20mm spacing
2 to 10 stations



PB15 Series
15mm spacing
2 to 13 stations



PB15 Series Lighted
15mm spacing
1 to 13 stations

NON-ILLUMINATED TYPES

Jew, low-cost pushbutton switches are easy to wire, easy to nount; available in a wide variety of configurations, **custom esigned** to meet your specific needs. Centralab's field assembly rogram insures prompt delivery of the switch that will meet our requirements. Exceptional versatility: Switching action may e momentary, push-pull, interlocking, interlocking with lockout, ush-push, or a combination of these actions anywhere in the ame row. Each station can have two, four, six or eight pole, louble-throw functions; modules may be coupled to permit up o 16-pole, double-throw action. A line switch can also be inluded in the switch assembly.

witches are compact in size, with three centerline spacing options: 0mm, 15mm or 20mm. Up to 19 stations per assembly are available. Designed for PC board or panel mounting; may be wired rom top, bottom or both sides. Twelve standard button styles are vailable, each in five colors: Red, gray, black, cream or white.

urrent and Voltage Ratings: 0.45 amp at 115 VAC; 1 amp at 28 DC. **Contact Resistance:** 4 milliohms initial; 10 milliohms after 5,000 cycles. **Dielectric Strength:** 1000 VAC rms, bracket to pins; 000 VAC rms, pins to pins. **Stator Block:** Phenolic per ASTM D-700-57R, Type 2. **Slider Bar:** Thermoplastic acetal resin Delrin®). **Fixed Contacts:** Silver plated copper wire. **Moving ontacts:** Nickel-silver alloy with silver overlay. **Lubrication:** ermanent, applied during assembly. **Available Spacing Options:** PB10 Series, 10mm, 2 to 19 stations; PB15 Series, 15mm, 2 to 13 stations; PB20 Series, 20mm, 2 to 10 stations. Single station witches also available.

MAXIMUM COST PER STATION*

2 Pole	4 Pole	6 Pole	8 Pole
$1.31	$1.43	$1.64	$1.79

*Prices may be lower depending on actual functions and quantities; includes button. ®Reg. DuPont trademark.

ILLUMINATED TYPES

Available in PB15 Series, custom designed; offers outstanding versatility in application. Available in from one to 13 stations per assembly with 15mm spacing between centerlines. Each station can have two-, four-, six- or eight-pole double throw non-shorting switching functions. Switching action can be momentary, push-push, interlocking or a combination of these anywhere in the same row. Optional lockout feature is available for each type of switching action.

Interchangeable lenses and filters provide maximum color utility and esthetic appeal. Two lens thicknesses (.060″ and .100″) are both available in ten colors: Dark blue, medium blue, light blue, white, green, yellow, dark red, medium red, orange and clear.

Switches use slide base, indicator or pilot lamps available in a wide range of voltage ratings. Snap-in lens feature allows lamps to be removed conveniently from front of panel. **Write for complete information on legend capabilities.**

Current and Voltage Ratings: 0.45 amp at 115 VAC; 1 amp at 28 VDC. **Contact Resistance:** 4 milliohms initial; 10 milliohms after 25,000 cycles. **Dielectric Strength:** 1000 VAC rms, bracket to pins; 1000 VAC rms, pins to pins. **Stator Block:** Phenolic per ASTM D-700-57R, Type 2. **Slider Bar:** Thermoplastic acetal resin (Delrin®). **Fixed Contacts:** Silver plated copper wire. **Moving Contacts:** Nickel-silver alloy with silver overlay. **Lubrication:** Permanent, applied during assembly.

MAXIMUM COST PER STATION*

2 Pole	4 Pole	6 Pole	8 Pole
$3.70	$3.82	$4.03	$4.18

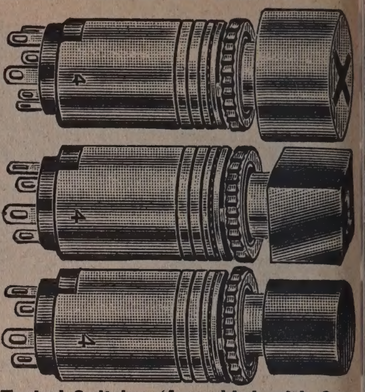
*Prices may be lower depending on actual functions and quantities; includes lamp.

AS YOUR LOCAL CENTRALAB FIELD ASSEMBLY DEPOT, WE ARE PREPARED TO MEET YOUR DESIGN REQUIREMENTS FOR A COMPETITIVELY PRICED PUSHBUTTON SWITCH, ILLUMINATED OR NON-ILLUMINATED, IN PROTOTYPE QUANTITIES OR SMALL PRODUCTION RUNS. OUR FACTORY TRAINED CENTRALAB PUSHBUTTON SWITCH ASSEMBLY SPECIALISTS ARE PREPARED TO SATISFY YOUR MOST STRINGENT DELIVERY REQUIREMENTS. CALL OR WRITE FOR COMPLETE ORDER ASSISTANCE AND INFORMATION.

DIALIGHT Lighted Pushbutton Switches & Indicator Lights DIALCO®

SINGLE-HOLE MOUNTING PUSHBUTTON SWITCHES AND MATCHING INDICATOR LIGHTS

Convenient, modular design allows assembly of an illuminated switch to meet your particular requirement. **Three Switch Assemblies:** Choice of NO, NC or 2-Circuit arrangements in two styles: One to accommodate screw-in type caps; another for friction-fit caps. Switch contacts rated 3 amps resistive at 125 VAC or 30 VDC. **Caps:** Choice of screw-in or friction fit (rotatable or keyed) styles in ½″ or ¾″ sizes, round or square shape, and a choice of colors. **Matching Indicator Lights:** Available in two sizes to match your indicating switches. Simply select the indicator base assembly size desired, and add the cap of your choice (the same caps used with switches).


Typical Switches (Assembled, with Cap)

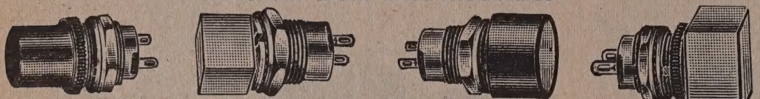
SWITCH BASE ASSEMBLIES

Single-hole mounting; fit panels up to 3⁄16″ thick. Size, .650″ dia. x 115⁄32″ lg.

Switch Circuit	For Friction-Fit Caps Either ½″ or ¾″ Cap Size	For Screw-In Caps Only ½″ mtg.	For Screw-In Caps Only 15⁄32″ mtg.	Net Each, Lots of 1-9	10-24	25-99*
SPST-NO	513-0101-604	513-0105-604	513-0104-604	$3.95	$3.55	$3.34
SPST-NC	513-0201-604	513-0205-604	513-0204-604	3.95	3.55	3.34
2-Circuit*	513-0301-604	513-0305-604	513-0304-604	4.37	3.92	3.67

*One circuit NO, one circuit NC.

INDICATOR LIGHT BASE ASSEMBLIES


Typical Indicator Lights (Assembled, with Cap)

Accommodate T-1¾ incandescent lamp from 1.35 to 28 V. Accept friction-fit caps, keyed or rotatable, ½″ or ¾″ size. Length, 27⁄32″ max.

Dialco Number	Description	Net Each, Lots of 1-9	10-24	25-99*
183-9730-14-602	For 15⁄32″ hole, front mounting (.549″ dia.)	$1.28	$1.13	$1.06
183-9830-14-604	For ½″ hole, front or rear mount (.560″ dia.)	1.28	1.13	1.06

CAPS FOR SWITCH BASE ASSEMBLIES OR INDICATOR LIGHT

Friction-fit caps are available in round or square shapes; choice of keyed (non-rotatable) or rotatable style; ½″ or ¾″ size. Screw-in caps fit only the switch base assemblies designated for them; come only in ½″ round configuration. **Colors:** All items listed are red as indicated by **1**, the last digit in the ordering number (e.g., 183-1471). **For other colors, see color table;** same prices. Legends may be hot-stamped or engraved; pricing on request.

COLOR OF LENS FACE

Indicated by last figure in Dialco number. For simplicity, all numbers listed use suffix **"1"** to indicate the lens face is **Red.** When a color other than red is required, change the last figure per following list:

Last Figure in No.	Lens Face Color
1	Red (as listed)
2	Green
3	Amber (yellow)
4	Blue
5	White (translucent)
6	Light yellow
8	Ivory

Examples: 183-1472 (Green)
300-1874 (Blue)

½″ FRICTION-FIT AND SCREW-IN CAPS

Description	Shape	Friction Fit Caps Rotatable Number	Friction Fit Caps Keyed Number (Non-Rotatable)	Screw-In Cap Number	Net Each, Lots of 1-9	10-24	25-99*
Solid Color, Translucent Face and Sides	Round	183-1471	186-1471	192-1471	$0.72	$0.67	$0.62
	Square	185-1871	184-1871	....	.72	.67	.62
Translucent Colored Face, Black Opaque Sides	Round	183-5071	186-5071	192-5071	.72	.67	.62
	Square	185-5071	184-5071	....	.72	.67	.62
Translucent Colored Face, Gray Opaque Sides	Round	183-5171	186-5171	192-5171	.72	.67	.62
	Square	185-5171	184-5171	....	.72	.67	.62

¾″ FRICTION-FIT CAPS

Description	Shape	Rotatable Number	Keyed Number (Non-Rotatable)	Screw-In Cap Number	Net Each, Lots of 1-9	10-24	25-99*
Solid Color, Translucent Face and Sides	Round	191-1471	188-1471	....	$1.00	$0.95	$0.88
	Square	190-1871	187-1871	....	1.00	.95	.88
Translucent Colored Face, Black Opaque Sides	Round	191-5071	188-5071	....	1.00	.95	.88
	Square	190-5071	187-5071	....	1.00	.95	.88
Translucent Colored Face, Gray Opaque Sides	Round	191-5171	188-5171	....	1.00	.95	.88
	Square	190-5171	187-5171	....	1.00	.95	.88

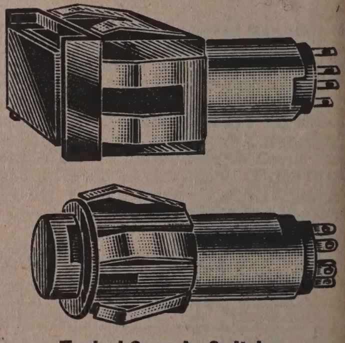
NEW SNAP-IN MOUNTING PUSHBUTTON SWITCHES AND MATCHING INDICATOR LIGHTS

SWITCH BASE ASSEMBLIES

Snap-in mounting for panels up to 3⁄16″ thick. Includes bezel, clip and spanner ring. Momentary non-snap action switches have contacts rated 3 amps resistive at 125 VAC or 30 VDC. Life at rated load, 100,000 operations. Suffix **001** in Dialco number indicates black bezel; to specify gray bezel, change 001 to **002** (e.g., 513-0106-**002**). Other bezel colors available on special order. Rectangular bezel units interchangeable with most 4-lamp displays.

Switch Circuit	For ⅝″ Sq. Cap	For ⅝″ Rnd. Cap	For ¾″ x 1″ Cap Less Barrier	For ¾″ x 1″ Cap With Barrier	Net Each, Lots of 1-9	10-24	25-99*
SPST-NO	513-0106-001	513-0107-001	513-0109-001	513-0110-001	$4.77	$4.28	$4.02
SPST-NC	513-0206-001	513-0207-001	513-0209-001	513-0210-001	4.77	4.28	4.02
2-Circuit*	513-0306-001	513-0307-001	513-0309-001	513-0310-001	5.19	4.64	4.36

*One circuit NO, one circuit NC.


Typical Snap-In Switches (Assembled, with Cap)

INDICATOR LIGHT BASE ASSEMBLIES

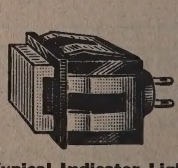
Accommodate T-1¾ incandescent lamp in a range of voltages to 28 V.

Bezel Color	For 300 Series ⅝″ Sq. Cap	For 301 Series ⅝″ Rnd. Cap	For 303 Series ¾″ x 1″ Cap Less Barrier	For 303 Series ¾″ x 1″ Cap With Barrier	Net Each, Lots of 1-9	10-24	25-99*
Black	533-0601	533-0701	533-0901	533-1001	$2.10	$1.90	$1.73
Gray	533-0602	533-0702	533-0902	533-1002	2.10	1.90	1.73

CAPS FOR INDICATOR LIGHT OR SWITCH BASE ASSEMBLIES

Items listed are red as indicated by **1**, the last digit in the ordering number (e.g., 300-1871). Also available in green, amber (yellow), blue, white, and light yellow. **To order, see color table;** same prices.

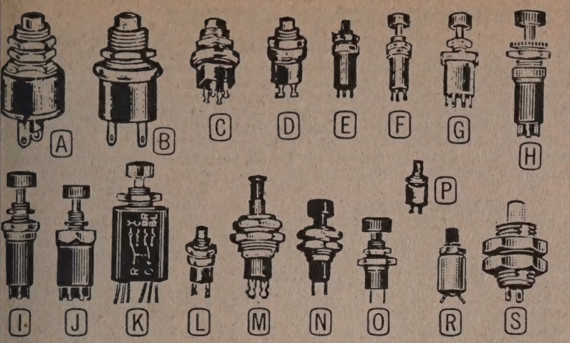
Dialco Number	Size	Net Each, Lots of 1-9	10-24	25-99*	Dialco Number	Size	Net Each, Lots of 1-9	10-24	25-99*
300-1871	⅝″ sq.	$0.91	$0.86	$0.80	301-1471	⅝″ rnd.	$1.00	$0.95	$0.88
303-3471	¾″ x 1″	1.01	.95	.88					


Typical Indicator Light (Assembled, with Cap)

Dialco Model 506-1500 Spanner Wrench—For snap-in mounting switches. Permits fastening bezel and clip to switch or matching indicator light base. Net Each. . **$5.10**

★PRICES ON QUANTITIES OF 100-249, 250-499, 500-999 AND HIGHER ON REQUEST

Grayhill® Pushbutton Switches



Precision-made pushbutton switches meet most requirements for versatility of switching. Voltage breakdown 1000 VAC between mutually insulated parts. Housing, button and internal bridge molded phenolic per MIL-M-14, Type CFG. Mounting nuts, bushing, washers, screws and nuts cadmium plated brass.

SERIES 2000 SNAP ACTION (FIG. A)

Momentary contact design; solder terminals or "Faston" terminal to accommodate ¼″ push-on termination (7-21 and 7-22). Extremely fast make-and-break; audible click produced by snap action mechanism. Fine silver fixed and moving contacts. **Total Button Travel:** .065″ approx. **Rated:** 10 amps at 115 VAC resistive for 25,000 operations. **Mounting:** 15/32-UNS-2A thread .454″ long. Fits 31/64″ dia. hole. **Size:** .880″ O.D.; 1.176″ behind panel; 1.903″ overall; No. 7-26, 1.239″ behind panel; 1.966″ overall.

Grayhill Number	Description	Net Ea., Lots	
		1-49	50-99
2201	SPST-NO, red button	**$2.85**	**$2.14**
7-7	SPST-NO, black button	**2.85**	**2.14**
7-21	SPST-NO, "Faston", red button	**3.25**	**2.44**
2202	SPST-NC, black button	**2.85**	**2.14**
7-8	SPST-NC, red button	**2.85**	**2.14**
7-22	SPST-NC, "Faston", black button	**3.25**	**2.44**
7-26B, R	SPDT, black or red button	**4.05**	**3.04**

SERIES 4000 WIPING CONTACT (FIG. B)

Available in standard contact action or positive feel contact action (10-100, 10-101); detent system is independent of contact system. Silver-plated beryllium copper contact solder terminals; tinned music wire spring. **Total Button Travel:** .140″ ± .032″ (4001, 10-9, 10-100); .110″ + .020″ −.010″ (4002, 10-10, 10-101). **Rated:** 1 amp at 115 VAC resistive for 100,000 operations. **Mounting:** 15/32-32 UNS-2A thread, .375″ long. Fits 31/64″ dia. hole. **Size:** .800″ O.D.; .965″ behind panel; 1.50″ overall.

4001UL*	SPST-NO, red button	**$1.05**	**$0.79**
10-9UL*	SPST-NO, black button	**1.05**	**.79**
4002UL*	SPST-NC, black button	**1.05**	**.79**
10-10UL*	SPST-NC, red button	**1.05**	**.79**
10-100	SPST-NO, positive feel, red button	**1.90**	**1.43**
10-101	SPST-NC, positive feel, black button	**1.90**	**1.43**

*UL Listed.

SERIES 35 DOUBLE POLE (FIG. C)

Momentary contact switch has fine silver contact solder terminals; tinned music wire spring. **Total Button Travel:** .062″ ± .015″. **Rated:** ½ amp at 115 VAC resistive for 100,000 operations. **Mounting:** 15/32-32 UNS-2A thread, .375″ long. Fits in 31/64″ dia. hole. **Size:** .800″ O.D.; .743″ behind panel; 1.274″ overall.

35-1	DPST-NO, red button	**$1.50**	**$1.13**
35-3	DPST-NO, black button	**1.50**	**1.13**

SERIES 23 WIPING CONTACT (FIG. D)

Miniature switches with silver-plated brass contact solder terminals; tinned music wire spring. **Total Button Travel:** .095″ ± .010″. **Rated:** ¼ amp at 115 VAC resistive for 100,000 operations. **Mounting:** 5/16-32 UNEF-2A thread, .250″ long. Fits 21/64″ dia. hole. **Size:** .468″ O.D.; .663″ behind panel; 1.059″ overall.

23-1	SPST-NO, red button	**$1.20**	**$0.90**
23-4	SPST-NO, black button	**1.20**	**.90**

SERIES 46 WIPING CONTACT

Series 46-100: SPDT break-before-make and make-before-break momentary contact switches. Silver-plated phosphor bronze contact members and solder terminals. Polycarbonate button; thermoplastic button cap. **Total Button Travel:** .180″ min. **Rated:** ¼ amp at 115 VAC resistive for 250,000 operations. **Mounting:** ¼-32 UNEF-2A thread, .250″ long. Fits 17/64″ dia. hole. **Size:** .437″ O.D.; .890″ behind panel; 1.327″ overall.

Series 46-200: Same as Series 46-100 except as follows: DPDT. **Size:** .921″ behind panel; 1.56″ overall.

MOMENTARY BREAK-BEFORE-MAKE

Grayhill Number	Fig.	Description	Net Ea., Lots	
			1-49	50-99
46-101B, R	E	SPDT, black or red button	**$1.40**	**$1.05**
46-102B, R	F	SPDT, black or red button cap	**1.50**	**1.13**
46-200B, R	G	DPDT, black or red button cap	**3.10**	**2.33**

MOMENTARY MAKE-BEFORE-BREAK

46-110B, R	E	SPDT, black or red button	**$1.55**	**$1.16**
46-111B, R	F	SPDT, black or red button cap	**1.65**	**1.24**
46-201B, R	G	DPDT, black or red button cap	**3.40**	**2.55**

SERIES 46-500 ALTERNATE ACTION

Provides alternate action (push-on/push-off) version of Series 46-100; specifications are the same except as follows: **Mounting:** ⅜-32 UNEF-2A thread, .312″ long. **Size:** .437″ O.D.; .937″ behind panel; 1.677″ overall.

Grayhill Number	Fig.	Description	Net Ea., Lots	
			1-49	50-99
46-502B, R	H	SPDT, black or red button cap	**$3.50**	**$2.63**

SERIES 46 SEALED WIPING CONTACT

Series 46-150 and 46-270 Series: SPDT and DPDT break-before-make and make-before-break switches with "O" ring seal to reduce possibility of contamination and insulating posts. Silver-plated phosphor bronze shorting bar and contact terminals; tinned music wire spring. Aluminum button with polyethylene cap. **Total Button Travel:** .180″ min. **Rated:** ¼ amp at 115 VAC resistive for 100,000 operations. **Mounting:** ¼-32 UNEF-2A thread .250″ long; .437″ across flats of hex (.562″, 46-270, -271). **Size:** .957″ behind panel; 1.511″ overall.

Series 46-260: Break-before-make momentary contact switch and wire leads encapsulated in potting compound provides accurate operation in adverse environments; "O" ring seal between plunger and bushing further reduces possibility of contamination. Aluminum button with polyethylene button cap. Insulated, copper stranded wire leads 20″ long stripped and tinned ¼″. **Total Button Travel:** .180″ min. **Rated:** ¼ amp at 115 VAC resistive for 250,000 operations. **Mounting:** ⅜-32 UNEF-2A thread .281″ long. Fits 25/64″ dia. hole. **Size:** 1.121″ behind panel; 1.706″ overall.

MOMENTARY BREAK-BEFORE-MAKE

46-150B, R	I	SPDT, black or red button cap	**$3.25**	**$2.44**
46-270B, R	J	DPDT, black or red button cap	**4.10**	**3.08**
46-260B, R	K	DPDT, black or red button cap	**10.00**	**7.50**

MOMENTARY MAKE-BEFORE-BREAK

46-151B, R	I	SPDT, black or red button cap	**$3.35**	**$2.51**
46-271B, R	J	DPDT, black or red button cap	**4.20**	**3.15**

SERIES 30 BUTT CONTACT

Miniature SPST-NO or -NC momentary contact switches have fine silver shorting bar and contact solder terminals. **Total Travel:** .062″ ± .010″ (30-1, -3); .065″ + .010″ −.015″ (30-2, -6); .125″ + .020″ −.010″ (30-15, -37). **Rated:** 1 amp at 115 VAC resistive for one-million operations (500,000 operations 30-15, -37). **Mounting:** ¼-32 UNEF-2A thread .250″ long. Fits 17/64″ dia. hole. **Size:** .592″ behind panel, .992″ overall (30-1, -3); .605″ behind panel, 1.005″ overall (30-2, -6); .677″ behind panel, 1.077″ overall (30-15, -37).

Series 30-16, 30-32: Push-to-make pull-to-break (30-16) and pull-to-make push-to-break (30-32)switches. Passivated stainless steel detent balls; fine silver shorting bar and contact solder terminals. **Total Button Travel:** .145″ ± .015″. **Rated:** 1 amp at 115 VAC resistive for 100,000 operations. **Mounting:** 15/32-32 UNS-2A thread .421″ long. Fits 31/64″ dia. hole. **Size:** Hex mounting nut 9/16″ across flats; .577″ behind panel, 1.45″ overall (30-16); .487″ behind panel, 1.36″ overall (30-32).

Series 30-17: Positive feel SPST-NO momentary switch with .046″ min. overtravel. Fine silver shorting bar and contact solder terminals; polyethylene button cap. **Rated:** 1 amp at 115 VAC resistive for 200,000 operations. **Mounting:** 15/32-32 UNS-2A thread .421″ long. Fits 31/64″ dia. hole. **Size:** Mounting nut 9/16″ across flats; .577″ behind panel; 1.350″ overall.

Series 30-250: SPST-NO or -NC momentary contact switches with polycarbonate button and polyethylene button cap; fine silver shorting bar and contact terminals. **Total Button Travel:** .060″ ± .020″. **Rated:** 1 amp at 115 VAC resistive for 100,000 operations. **Mounting:** ¼-32 UNEF-2A thread .250″ long. Fits 17/64″ dia. hole. **Size:** .437″ across flats, 0.632″ behind panel, 1.091″ overall (30-251); .645″ behind panel, 1.104″ overall (30-252).

30-1UL*	L	SPST-NO, red button	**$0.90**	**$0.68**
30-2UL*	L	SPST-NC, black button	**.90**	**.68**
30-3UL*	L	SPST-NO, black button	**.90**	**.68**
30-6UL*	L	SPST-NC, red button	**.90**	**.68**
30-15	L	SPST-NO, red button	**1.10**	**.83**
30-37	L	SPST-NO, black button	**1.10**	**.83**
30-16B, R	M	SPST, push-to-make, black or red button	**1.75**	**1.31**
30-32B, R	M	SPST, pull-to-make, black or red button	**1.75**	**1.31**
30-17B, R	N	SPST-NO, black or red button cap	**1.50**	**1.13**
30-251B, R	O	SPST-NO, black or red button cap	**2.50**	**1.88**
30-252B, R	O	SPST-NC, black or red button cap	**2.50**	**1.88**

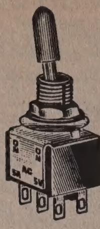
*UL Listed.

SERIES 39 BUTT CONTACT

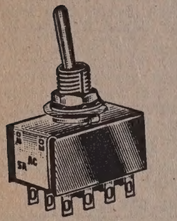
SPST-NO types have molded-in solder terminals in diallyl base; prevents flux contamination. Overtravel .015″ min. (39-12) and .080″ min. (39-101). Fine silver gold plated shorting bar and contact solder terminals. Limit switch 39-101 has nylon button and laminated phenolic insulator. **Voltage Breakdown:** 500 VAC between mutually insulated parts (39-101, 1000 VAC). **Total Button Travel:** .035″ ± .015″ (39-1, -3); .042″ ± .010″ (39-2); .130″ ± .025″ (39-12); .186″ ± .025″ (39-101). **Rated:** ½ amp at: one million operations (39-1, -3), 250,000 operations (39-101), 100,000 operations (39-12); rated ¼ amp at 250,000 operations (39-2). **Mounting:** 8-40 UNS-2A thread .125″ long, fits 11/64″ dia. hole except 39-101, 5/16-32 UNEF-2A thread .500″ long, fits 21/64″ "D" shaped hole. **Size:** .315″ behind panel, .615″ overall (39-1, -3); .455″ behind panel, .755″ overall (39-12); .490″ behind panel, .780″ overall (39-2); .650″ plus .187″ long button (39-101).

39-1	P	SPST-NO, red button	**$1.15**	**$0.86**
39-3	P	SPST-NO, black button	**1.15**	**.86**
39-2	R	SPST-NC, black button	**1.60**	**1.20**
39-12	P	SPST-NO, black or red button	**1.30**	**.98**
39-101	S	SPST-NO, white button	**2.40**	**1.80**

J-B-T® Subminiature Switches



JMT-223
COLOR CAP



JMT-423

*COLOR CAPS

To order, add suffix (as indicated below) to switch number desired (e.g., JMT-123-**W-CAP-10A**). Add **2c** each to prices shown; **$10.00** per 1000 in bulk.

Color	Suffix W-CAP-	Color	Suffix W-CAP-
White	**10A**	Orange	**10F**
Blue	**10B**	Yellow	**10G**
Red	**10C**	Green	**10H**
Black	**10D**	Violet	**10I**
Brown	**10E**	Gray	**10J**

SERIES JMT SUBMINIATURE TOGGLE SWITCHES

Combine drastic reduction in size and weight with trouble-free construction. Ideal for manually-controlled, low current, solid state devices and miniaturized circuitry. Used in computers, aircraft, electronic instruments, geophysical and portable equipment of all kinds. Mount in single hole with ¼″-40NS-2A bushing .352″ lg. with keyway. Solder terminals firmly staked to withstand repeated soldering; electrical continuity of terminal is to opposite throw of lever. Distinctive green phenolic body. Bat handle .400″ lg. **Series JMT-100:** SPDT action. Body .500″ x .260″ x .505″ deep behind panel (including terminals). Wt., 0.19 oz. **Series JMT-200:** DPDT action. Body .500″ x .450″ x .505″ deep behind panel (incl. terminals). Wt., 0.23 oz. **Series JMT-300:** 3PDT action. Body .652″ x .500″ x .571″ deep behind panel (including terminals). Wt., 0.28 oz. **Series JMT-400:** 4PDT action. Body .843″ x .500″ x .571″ deep behind panel (including terminals). Wt., 0.32 oz.

SPECIFICATIONS

Electrical Characteristics: Rated 5 amps nom. resistive, 125 VAC and 24 VDC. Initial contact resistance, 5 milliohms max., at 3 VDC, 100 mA. Insulation resistance, 10,000 megohms min. Dielectric strength, 1 kV rms at sea level. Life, 100,000 make-and-break, min. for suffix -23 models; all others 60,000, under load. **Physical Characteristics:** Coin silver switching contacts and rockers. Bright, chrome-plated brass bat handle. Phenolic case and cradle. Bushing, locking ring (1 supplied) and hex nuts (2 supplied) are nickel-plated brass. Clamp and internal-tooth lockwasher chromate treated or stainless steel. **Circuitry:** As indicated in table, below. However, they may also be used as ST (single throw) by wiring only to applicable terminals. Example: JMT-123 connects as an On-Off switch by using center terminals and terminals on one end only.

	SPDT Series JMT-100					**DPDT Series JMT-200**				
	J-B-T No.*	**Net Each, Lots of**				**J-B-T No.***	**Net Each, Lots of**			
Positions		**1**	**2-9**	**10-29**	**30-99**		**1**	**2-9**	**10-29**	**30-99**
On-Off-On	**JMT-121**	**$2.45**	**$1.95**	**$1.43**	**$1.30**	**JMT-221**	**$3.05**	**$2.55**	**$1.87**	**$1.70**
On-None-On	**JMT-123**	**2.15**	**1.65**	**1.21**	**1.10**	**JMT-223**	**2.65**	**2.15**	**1.58**	**1.43**
On-None-On†	**JMT-126**	**2.45**	**1.95**	**1.43**	**1.30**	**JMT-226**	**3.05**	**2.55**	**1.87**	**1.70**
On†-Off-On†	**JMT-127**	**2.60**	**2.10**	**1.54**	**1.40**	**JMT-227**	**3.20**	**2.70**	**1.98**	**1.80**
On-Off-On†	**JMT-131**	**2.60**	**2.10**	**1.54**	**1.40**	**JMT-231**	**3.20**	**2.70**	**1.98**	**1.80**
None-On-On†	**JMT-134**	**2.45**	**1.95**	**1.43**	**1.30**	**JMT-234**	**3.05**	**2.55**	**1.87**	**1.70**
On-On-On	....	......	......	......	......	**JMT-232**	**3.35**	**2.85**	**2.09**	**1.90**
On-On-On†	....	......	......	......	......	**JMT-233**	**3.65**	**3.15**	**2.31**	**2.10**
On†-On-On†	....	......	......	......	......	**JMT-235**	**3.60**	**3.10**	**2.26**	**2.05**

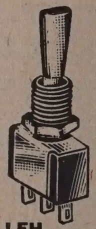
	3PDT Series JMT-300					**4PDT Series JMT-400**				
On-Off-On	**JMT-321**	**$4.75**	**$4.25**	**$3.12**	**$2.84**	**JMT-421**	**$5.95**	**$5.45**	**$4.00**	**$3.64**
On-None-On	**JMT-323**	**4.35**	**3.85**	**2.82**	**2.57**	**JMT-423**	**5.35**	**4.85**	**3.56**	**3.24**
On†-Off-On†	**JMT-327**	**4.90**	**4.40**	**3.23**	**2.93**	**JMT-427**	**6.10**	**5.60**	**4.10**	**3.74**
On-Off-On†	**JMT-331**	**4.90**	**4.40**	**3.23**	**2.93**	**JMT-431**	**6.10**	**5.60**	**4.10**	**3.74**
None-On-On†	**JMT-334**	**5.00**	**4.50**	**3.30**	**3.00**	**JMT-434**	**6.40**	**5.90**	**4.32**	**3.93**
On-On-On	....	......	......	......	......	**JMT-432**	**6.50**	**6.00**	**4.40**	**4.00**
On-On-On†	....	......	......	......	......	**JMT-433**	**6.75**	**6.25**	**4.57**	**4.15**
On†-On-On†	....	......	......	......	......	**JMT-435**	**6.90**	**6.40**	**4.70**	**4.28**

*See color cap ordering information table. †Momentary position.

VARIATIONS OF SERIES JMT SUBMINIATURE TOGGLE SWITCHES*

Series LFH—with Flat Handle: Identical to JMT series above, except for flat handle (paddle) lever, permanently pinned for proper alignment in operating plane. Handle is satin chrome finish with matching dress nut construction and ratings same as JMT series. Available in all circuit configurations of JMT series, including 3PDT and 4PDT, and with MPC type printed circuit terminals.

	SPDT Series LFH-100 Flat Handle					**DPDT Series LFH-200 Flat Handle**				
	J-B-T No.	**Net Each, Lots of**				**J-B-T No.**	**Net Each, Lots of**			
Positions		**1**	**2-9**	**10-29**	**30-99**		**1**	**2-9**	**10-29**	**30-99**
On-Off-On	**LFH-121**	**$3.45**	**$2.95**	**$2.23**	**$2.00**	**LFH-221**	**$4.05**	**$3.55**	**$2.67**	**$2.20**
On-None-On	**LFH-123**	**3.15**	**2.65**	**2.01**	**1.80**	**LFH-223**	**3.65**	**3.15**	**2.38**	**2.13**
On†-Off-On†	**LFH-127**	**3.60**	**3.10**	**2.34**	**2.10**	**LFH-227**	**4.20**	**3.70**	**2.78**	**2.50**



LFH

Series MR1—Rocker Switches: Same nominal rating as JMT Series, and dimensionally same below mounting bracket. Built-in extra strength in support column prevents wobbling and provides always-perfect alignment. Green body molded of glass-filled diallyl phthalate. Rockers are black molded nylon; red and white rockers also available. These switches also available with printed circuit, fast-on, and Wire-Wrap™ terminals. Available also in 3PDT and 4PDT configurations.

MR1

Series MP1—Paddle Lever Switches: Identical to subminiature Series MR1 rocker switches, but paddle lever type.

	SPDT Series MR1 and Series MP1‡					**DPDT Series MR1 and Series MP1‡**				
On-Off-On	**MR1-121**	**$2.80**	**$2.30**	**$1.78**	**$1.65**	**MR1-221**	**$3.40**	**$2.90**	**$2.22**	**$2.05**
On-None-On	**MR1-123**	**2.50**	**2.00**	**1.56**	**1.45**	**MR1-223**	**3.00**	**2.50**	**1.93**	**1.78**
On-None-On†	**MR1-126**	**2.80**	**2.30**	**1.78**	**1.65**	**MR1-226**	**3.40**	**2.90**	**2.22**	**2.05**
On†-Off-On†	**MR1-127**	**2.95**	**2.45**	**1.89**	**1.75**	**MR1-227**	**3.55**	**3.05**	**2.33**	**2.15**
On-Off-On†	**MR1-131**	**2.95**	**2.45**	**1.89**	**1.75**	**MR1-231**	**3.55**	**3.05**	**2.33**	**2.15**
On-On-On	....	......	......	......	......	**MR1-232**	**3.70**	**3.20**	**2.44**	**2.25**
On-On-On†	....	......	......	......	......	**MR1-233**	**4.00**	**3.50**	**2.66**	**2.45**
On†-On-On†	....	......	......	......	......	**MR1-235**	**3.95**	**3.45**	**2.61**	**2.40**

MP1

Series MPC—Printed Circuit Switches: Same as JMT series, but with terminals for direct insertion into printed circuit boards. Terminals are gold plated for easy soldering. Construction and ratings identical to JMT, except for terminals. Also available with special modifications (flat handle, locking lever, large 15/32″ bushing, etc.).

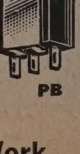
	SPDT Series MPC-100 Printed Circuit					**DPDT Series MPC-200 Printed Circuit**				
On-Off-On	**MPC-121**	**$2.55**	**$2.05**	**$1.53**	**$1.38**	**MPC-221**	**$3.15**	**$2.65**	**$1.97**	**$1.78**
On-None-On	**MPC-123**	**2.25**	**1.75**	**1.31**	**1.18**	**MPC-223**	**2.75**	**2.25**	**1.68**	**1.51**
On-None-On†	**MPC-126**	**2.55**	**2.05**	**1.53**	**1.38**	**MPC-226**	**3.15**	**2.65**	**1.97**	**1.78**
On†-Off-On†	**MPC-127**	**2.70**	**2.20**	**1.64**	**1.48**	**MPC-227**	**3.30**	**2.80**	**2.08**	**1.88**

ON
ON
5A
AC
115V

MPC

Series PB—Pushbutton Switches: SPDT pushbutton-actuated subminiature switches with 100,000 cycles average life under load—5 amps at 125 VAC. Coin silver contacts and rocker; silver plated center terminal. Bushing and plunger are nickel-plated brass. High-strength plastic body with anodized natural aluminum knob (anodized colored knobs available). Mount in ¼″ D-hole.

	Series PB-100 Maintained Action					**Series PB-100 Momentary Action**				
SPDT	**PB-123**	**$2.45**	**$1.95**	**$1.47**	**$1.30**	**PB-126**	**$2.45**	**$1.95**	**$1.47**	**$1.30**



PB

*Prices given are for typical models within each series. Each series (except PB) is available in every circuit configuration of the JMT series, above, and with other variations. **Write for prices on all unlisted types.** †Momentary position (spring return). ‡Listed are J-B-T Nos. for rocker switch models. To order paddle lever models, change second character in J-B-T No. to **P.** Example: MP1-121; same price.

J-B-T® MIL and JAN Toggle Switches

HEAVY DUTY TOGGLE SWITCHES SINGLE, DOUBLE AND 4-POLE

or use in DC circuits; or, AC circuits in frequencies up to 1600 z. Rugged, positive action. Built for extra long life to meet overnment, industrial and commercial requirements for high liability. Metal top eliminates spring holes; encloses switch ehind panel. **Features:** Aircraft lubricant for operation in temper- tures −85° F to +185° F. Withstand high humidity. Meets 00-hour salt-spray test QQ-M-151a. No momentary make or reak or mechanical damage under stringent shake tests and 75 G rop test. Tested to make and break at 50% overload for brief eriods due to size, solid coin silver contacts and rocker arms. ontact resistance, under 0.005 ohm. Dielectric exceeds 1,000 V ms, 60 Hz at sea level. Screw terminals and solder lugs withstand 0 lb. pull test. **Series MS35058, MS35059:** With lever seal for and, dust and 15 ft. water submersion tests. Screw terminals; olderable finish. Meets MIL-S-3950A specifications. **Series ST40, 2, 50, 52:** Heavy-duty type; solder and screw terminals. Meet AN-S-23 specifications. **Series MS25068:** Extra heavy duty erminals, 4-pole construction for single hole mounting. Silicone ubber bushing seals. Surpass rigorous electrical endurance re- uirements. Molded, hi-arc resistant bodies. MIL-S-3950A for odels with suffix -21 or higher.

ominal Ratings: 20 amps at 125 VAC; 10 amps at 250 VAC. **witch Movement:** Opposite to that of the lever. **Finish:** Dull nish nickel-plating to government specifications. **Hardware:** Two ex nuts, one internal-tooth lockwasher and locking ring (not upplied in bulk shipments).

4PST EIGHT TERMINALS

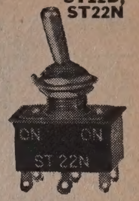
MIL-S-3950A Circuit	Screw Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-Off-X	MS25068-24	$5.73	$4.73	$4.08	$3.44	$2.72
On-Off*-X	MS25068-25	6.57	5.57	4.83	4.05	3.37
X-Off-On*	MS25068-28	6.57	5.57	4.83	4.05	3.37

4PDT TWELVE TERMINALS

MIL-S-3950A Circuit	Screw Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-Off-On	MS25068-21	$6.48	$5.48	$4.75	$4.00	$3.32
On-X-On	MS25068-23	6.57	5.57	4.83	4.05	3.37
On-X-On*	MS25068-26	7.50	6.50	5.12	4.31	3.58
On*-Off-On*	MS25068-27	7.50	6.50	5.12	4.31	3.58
On-Off-On*	MS25068-31	7.50	6.50	5.12	4.31	3.58

MS25068 -27

ST40A



ST12D, ST22N

SPST TWO TERMINALS

MIL-S-3950C Circuit	Screw Term. No.	1	2-9	10-29	30-99	100-249
On-X-Off	MS35058-22	$2.03	$1.53	$1.34	$1.16	$0.97
On-Off-X	MS35058-24	2.03	1.53	1.34	1.16	.97
On-Off*-X	MS35058-25	2.33	1.83	1.60	1.37	1.13
X-Off-On*	MS35058-28	2.33	1.83	1.60	1.37	1.13
On-X-Off*	MS35058-29	2.25	1.75	1.53	1.31	1.09
Off-X-On*	MS35058-30	2.25	1.75	1.53	1.31	1.09

SPDT THREE TERMINALS

MIL-S-3950C Circuit	Screw Term. No.	1	2-9	10-29	30-99	100-249
On-Off-On	MS35058-21	$2.33	$1.83	$1.60	$1.37	$1.13
On-X-On	MS35058-23	2.33	1.83	1.60	1.37	1.13
On-X-On*	MS35058-26	2.46	1.96	1.72	1.47	1.23
On*-Off-On*	MS35058-27	2.46	1.96	1.72	1.47	1.23
On-Off-On*	MS35058-31	2.46	1.96	1.72	1.47	1.23

DPST FOUR TERMINALS

MIL-S-3950C Circuit	Screw Term. No.	1	2-9	10-29	30-99	100-249
On-X-Off	MS35059-22	$2.66	$2.16	$1.97	$1.58	$1.27
On-Off-X	MS35059-24	2.66	2.16	1.97	1.58	1.27
On-Off*-X	MS35059-25	3.47	2.97	2.69	2.12	1.73
X-Off-On*	MS35059-28	3.18	2.68	2.45	1.94	1.58
On-X-Off*	MS35059-29	3.28	2.78	2.54	2.03	1.64
Off-X-On*	MS35059-30	3.01	2.51	2.29	1.83	1.47

DPDT SIX TERMINALS

MIL-S-3950C Circuit	Screw Term. No.	1	2-9	10-29	30-99	100-249
On-Off-On	MS35059-21	$3.01	$2.51	$2.29	$1.83	$1.47
On-X-On	MS35059-23	3.01	2.51	2.29	1.83	1.47
On-X-On*	MS35059-26	3.37	2.87	2.61	2.08	1.66
On*-Off-On*	MS35059-27	3.47	2.97	2.69	2.12	1.73
On-Off-On*	MS35059-31	3.37	2.87	2.61	2.08	1.66

JAN-S-23 Circuit and Arrangement	Screw Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249	Solder Terminal No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
SPST 2-Term.												
On-X-Off	ST40A	$1.81	$1.31	$1.19	$1.03	$0.87	ST42A	$1.67	$1.17	$1.03	$0.89	$0.76
On-X-Off*	ST40B	2.10	1.60	1.40	1.20	1.00	ST42B	1.85	1.35	1.19	1.02	.85
Off-X-On*	ST40C	2.10	1.60	1.40	1.20	1.00	ST42C	1.75	1.25	1.10	.96	.81
SPDT 3-Term.												
On-X-On	ST40D	2.11	1.61	1.42	1.23	1.04	ST42D	1.84	1.34	1.16	1.01	.85
On-Off-On	ST40E	2.11	1.61	1.42	1.23	1.04	ST42E	1.84	1.34	1.16	1.01	.85
On-X-On*	ST40F	2.37	1.87	1.64	1.40	1.17	ST42F	1.97	1.47	1.30	1.12	.96
On*-Off-On*	ST40G	2.26	1.76	1.55	1.34	1.14	ST42G	1.97	1.47	1.30	1.12	.96
On-Off-On*	ST40H	2.37	1.87	1.64	1.40	1.17	ST42H	1.97	1.47	1.30	1.12	.96
DPST 4-Term.												
On-X-Off	ST50K	2.48	1.98	1.48	1.26	1.01	ST52K	2.32	1.82	1.35	1.13	.90
On-X-Off*	ST50L	2.93	2.43	1.81	1.50	1.20	ST52L	2.62	2.12	1.60	1.33	1.05
Off-X-On*	ST50M	2.93	2.43	1.81	1.50	1.20	ST52M	2.62	2.12	1.60	1.33	1.05
DPDT 6-Term.												
On-X-On	ST50N	2.83	2.32	1.74	1.45	1.16	ST52N	2.52	2.02	1.52	1.27	1.01
On-Off-On	ST50P	2.83	2.32	1.74	1.45	1.16	ST52P	2.52	2.02	1.52	1.27	1.01
On-X-On*	ST50R	3.13	2.63	1.98	1.66	1.32	ST52R	2.85	2.35	1.75	1.47	1.18
On*-Off-On*	ST50S	3.23	2.73	2.09	1.75	1.40	ST52S	2.96	2.46	1.84	1.54	1.24
On-Off-On*	ST50T	3.13	2.63	1.98	1.66	1.32	ST52T	2.85	2.35	1.75	1.47	1.18

MEDIUM DUTY TOGGLE SWITCHES (INCLUDING MS25098 AND MS25100)

Single-hole, flush-mounting switches for DC or AC circuits up to 1600 Hz. Molded bodies fully enclosed. Rugged, positive action built for extra long life. **Features:** Aircraft lubricant to withstand temperatures −85° F to +185° F. Withstand tropical humidity. Meet 100-hour salt-spray test QQ-M-151a. No momentary make or break or mechanical damage during shake tests or 75 G drop test. Silver-plated stationary contacts; phosphor-bronze movable contacts; meet 50% overload for brief periods. Dielectric exceeds 1,000 V rms, 60 Hz at sea level. Contact resistance well under 0.01 ohm military requirement. Terminals withstand 5-lb. pull. **Nominal Ratings:** 6 amps at 125 VAC; 3 amps at 250 VAC. **Switch Movement:** Same direction as that of the lever. **Finish:** Dull nickel-plate. **Hardware:** Two hex nuts, one internal tooth lockwasher and locking ring (not supplied in bulk shipments). **Series MS25098 and MS25100:** Unique internal design results in surpassing MIL-S-3950A endurance tests. Sand and dust bushing seal; case to terminal seal. Bushing, 15/32″ lg. **Series ST12 thru ST27:** Meet JAN-S-23 specs. Double-grip, self-wiping contacts; threaded bushings, 15/32″ or ¼″ lg.; rear or side solder terminals.

SPST TWO TERMINALS

MIL-S-3950A Circuit	No.	1	2-24	25-49	50-99	100-249
On-X-Off	MS25098-22	$2.27	$1.77	$1.42	$1.33	$1.23
On-X-Off*	MS25098-29	2.78	2.28	1.86	1.73	1.56
Off-X-On*	MS25098-30	2.78	2.28	1.86	1.73	1.56

SPDT THREE TERMINALS

MIL-S-3950A Circuit	No.	1	2-24	25-49	50-99	100-249
On-X-On	MS25098-23	$2.54	$2.04	$1.63	$1.52	$1.38

DPST FOUR TERMINALS

MIL-S-3950A Circuit	No.	1	2-24	25-49	50-99	100-249
On-X-Off	MS25100-22	$3.05	$2.55	$2.05	$1.92	$1.74
On-X-Off*	MS25100-29	3.48	2.98	2.38	2.24	2.04
Off-X-On*	MS25100-30	3.48	2.98	2.38	2.24	2.04

DPDT SIX-TERMINALS

MIL-S-3950A Circuit	No.	1	2-24	25-49	50-99	100-249
On-X-On	MS25100-23	$3.26	$2.76	$2.22	$2.08	$1.90

SPST TWO TERMINALS

Circuit and Arrangement	JAN-S-23 No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-X-Off	ST12A	$1.76	$1.26	$0.92	$0.84	$0.79
On-X-Off*	ST12B	2.02	1.52	1.11	1.02	.96
Off-X-On*	ST12C	2.13	1.63	1.20	1.09	1.02
On-X-Off	ST13A†	1.80	1.30	.96	.87	.82
On-X-Off	ST16A‡	2.11	1.61	1.18	1.07	1.01
On-X-Off*	ST16B‡	2.17	1.67	1.23	1.11	1.05
Off-X-On*	ST16C‡	2.17	1.67	1.23	1.11	1.05
On-X-Off	ST17A†‡	1.84	1.34	.99	.90	.84

SPDT THREE TERMINALS

Circuit and Arrangement	JAN-S-23 No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-X-On	ST12D	$1.96	$1.46	$1.07	$0.98	$0.91
On-X-On	ST13D†	2.00	1.50	1.10	1.01	.95
On-X-On	ST16D‡	2.00	1.50	1.10	1.01	.95
On-X-On	ST17D†‡	2.15	1.65	1.21	1.10	1.03

DPST FOUR TERMINALS

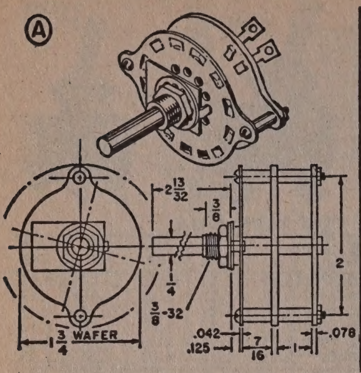
Circuit and Arrangement	JAN-S-23 No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-X-Off	ST22K	$2.23	$1.73	$1.27	$1.16	$1.08
On-X-Off*	ST22L	2.50	2.00	1.46	1.33	1.25
Off-X-On*	ST22M	2.50	2.00	1.46	1.33	1.25
On-X-Off	ST23K†	2.27	1.77	1.30	1.19	1.11
On-X-Off	ST26K‡	2.38	1.88	1.38	1.26	1.18
On-X-Off*	ST26L‡	2.54	2.04	1.49	1.37	1.20
Off-X-On*	ST26M‡	2.64	2.14	1.56	1.43	1.34
On-X-Off	ST27K†‡	2.42	1.92	1.41	1.28	1.21

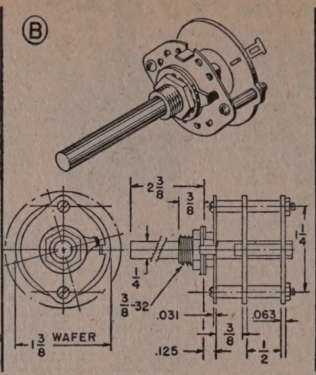
DPDT SIX TERMINALS

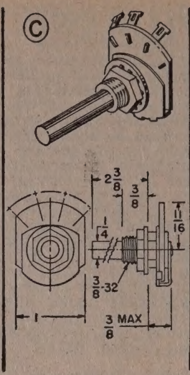
Circuit and Arrangement	JAN-S-23 No.	Net Each, Lots of 1	2-24	25-49	50-99	100-249
On-X-On	ST22N	$2.39	$1.89	$1.39	$1.26	$1.18
On-X-On	ST23N†	2.43	1.93	1.41	1.29	1.21
On-X-On	ST26N‡	2.39	1.89	1.39	1.26	1.18
On-X-On	ST27N†‡	2.54	2.04	1.49	1.37	1.28

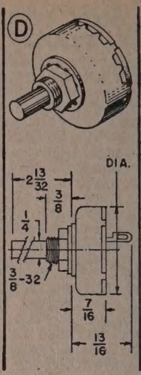
*Momentary position. †Bushing ¼″ long. ‡Side-connected terminals.

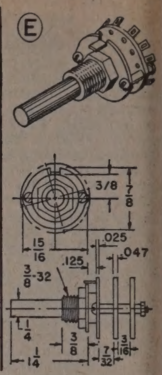
MALLORY Switches











Mallory switches are available in three general styles: Rotary, lever-action and pushbutton. Most styles are supplied in both shorting and non-shorting contacts. Shorting switches have contacts with "make" before "breaking" and are widely used in audio circuits. Contacts in non-shorting switches "break" before "making". These switches may be chosen with phenolic, ceramic or glass-epoxy wafer materials. Ceramic is usually selected for high voltage circuits as in switching RF equipment. All switches are supplied with normal mounting hardware. Dial plates are not included (except for Type 13124L).

PHENOLIC WAFER ROTARY SWITCHES

Mallory phenolic wafer rotary switches come in several sizes and contact arrangements. Supplied with nut, washer and 366-1 black knob. Phenolic is MIL grade Richardson T725.

STANDARD 1¾″ DIAMETER (FIG. A)

Rated 1 amp at 300 VDC; 4 amps, 50 VDC; 2 amps, 300 VAC rms; 12 amps, 6 VAC rms. Maximum non-breaking resistive load, 12 amps. Breakdown, 1000 VAC/DC. Contact resistance less than 0.01 ohm. Supplied with adjustment pin and stop plate.

Mallory Number						
Shorting	Non-Shorting	Index	Poles per Section	No. of Sections	Max. Positions	Net Each
1211L	1311L	30°	1	1	11	$2.65
1215L	1315L	30°	2	1	5*	2.65
1213L	1313L	30°	3	1	3*	2.65
1212L	1312L	30°	4	1	2*	2.65
1221L	1321L	30°	1	2	11	3.24
1225L	1325L	30°	2	2	5*	3.24
1223L	1323L	30°	3	2	3*	3.24
1222L	1322L	30°	4	2	2*	3.24
1231L	1331L	30°	1	3	11	4.08
....	1335L	30°	2	3	5*	4.08
....	1333L	30°	3	3	3*	4.08
1232L	1332L	30°	4	3	2*	4.08
1241L	1341L	30°	1	4	11	4.80
1245L	1345L	30°	2	4	5*	4.80
....	1342L	30°	4	4	2*	4.80
1251L	1351L	30°	1	5	11	5.19
1256L	1356L	30°	2	5	6	5.71
1261L	1361L	30°	1	6	11	6.10
....	1366L	30°	2	6	6	6.96

*Plus "off" position.

24-POSITION TAP SWITCH (FIG. A)

Includes Mallory No. 394 dial.

....	13124L	15°	1	1	24	$3.48

5-POSITION HAMSWITCH® (FIG. A)

For measuring up to 5 circuits with a single switch.

....	151L	60°	1	1	5*	$3.40

*Plus "off" position.

CIRCUIT OPENING SWITCH (FIG. A)

For meter switching or inserting resistors, capacitors, etc. Adjustable stop.

1400L	....	30°	1	1	11	$5.89

DECADE SWITCHES (FIG. A)

Use four resistors or capacitors for full decade. Type 153L for capacitors; 154L for resistors. Connect in series for multiple decades. Complete with instructions. Use Mallory No. 380 dial plate.

....	153L	36°	Spec.	1	10	$3.40
....	154L	36°	Spec.	1	10	3.71

MINIATURE 1⅜″ DIAMETER (FIG. B)

Rated 350 mA at 500 VAC rms resistive. Breakdown 1700 VAC rms, 60 Hz. Contact resistance 0.005 ohm. Supplied with adjustable stop, 366-1 knob and hex nut.

4M11111	4M21111	30°	1	1	11	$2.13
4M1215	4M2215	30°	2	1	5	2.13
4M1313	4M2313	30°	3	1	3	2.13
4M1412	4M2412	30°	4	1	2	2.13
4M11211	4M21211	30°	1	2	11	3.06
4M1225	4M2225	30°	2	2	5	3.06
4M1323	4M2323	30°	3	2	3	3.06
4M1422	....	30°	4	2	2	3.06
4M11311	4M21311	30°	1	3	11	3.84
4M1235	4M2235	30°	2	3	5	3.84

MINIATURE SWITCHES (CONT'D)

Mallory Number						
Shorting	Non-Shorting	Index	Poles per Section	No. of Sections	Max. Positions	Net Each
4M11411	4M21411	30°	1	4	11	$4.53
4M1245	4M2245	30°	2	4	5	4.53
4M11511	4M21511	30°	1	5	11	5.32
4M1255	4M2255	30°	2	5	5	5.32
4M11611	4M21611	30°	1	6	11	5.98

MINIATURE SPECIAL PURPOSE (FIG. C)

For tone control, radio-phono use, etc. Suffix indicates: **D**, AC line switch; **S**, spring return; **K**, knurled shaft (no knob supplied).

5M1112	....	30°	1	1	2	$1.28
5M1113	....	30°	1	1	3	1.28
5M1113K	....	30°	1	1	3	1.28
5M1213	5M2213	30°	2	1	3	1.28
....	4M2412S	30°	4	1	2	1.96

STEREO SPEAKER SWITCH (FIG. C)

For switching stereo speakers. Has "Main", "Both" and "Remote" positions. Phenolic wafer 1⅝″ dia.; bushing ⅜″-32 x ⅜″ lg.

RSA1213	....	30°	2	1	3	$1.17

GENERAL PURPOSE ROTARY SWITCHES (FIG. D)

Single section with formed cup enclosing contacts. Rated 0.2 amp at 300 VDC; 5 amps, 6 VDC; 0.25 amp, 300 VAC; 6 amps, 6 VAC. Maximum non-breaking resistive load, 5 amps. Breakdown 500 VAC/DC. Contact resistance 0.01 ohm or less. Comes with 366-1 knob and nut.

Mallory Number						
Shorting	Non-Shorting	Index	No. of Poles	Max. Positions	Base Dia., In.	Net Each
3115J	3215J	30°	1	5	1¼	$1.29
31112J	32112J	30°	1	12	1¼	1.29
3122J	3222J	30°	2	2	1¼	1.29
3123J	3223J	30°	2	3	1¼	1.29
3126J	3226J	30°	2	6	1¼	1.29
3134J	3234J	30°	3	4	1¼	1.33
3142J	3242J	30°	4	2	1¼	1.33
3143J	3243J	30°	4	3	1¼	1.33
31117J	32117J	20°	1	17*	1¹¹⁄₁₆	1.97
3129J	3229J	20°	2	9*	1¹¹⁄₁₆	1.97
3136J	3236J	20°	3	6*	1¹¹⁄₁₆	2.08
3163J	3263J	20°	6	3*	1¹¹⁄₁₆	2.08

*Furnished with adjustable stop.

GLASS-EPOXY WAFER ROTARY SWITCHES (FIG. E)

Subminiature size employs wafers ⅞″ dia. Glass-epoxy per MIL-P-18177. Rated 150 mA at 150 V rms. Max. voltage, 225 V rms. Max. current, 2.5 amps at 6 VAC rms. (All specifications at resistive load.) Supplied with nut, washer and 366-1 knob.

Mallory Number						
Shorting	Non-Shorting	Index	Poles per Section	No. of Sections	Max. Positions	Net Each
....	12M21111G	30°	1	1	11	$5.36
12M1215G	12M2215G	30°	2	1	5	5.36
....	12M2313G	30°	3	1	3	5.36
....	12M2412G	30°	4	1	2	5.36
....	12M21211G	30°	1	2	11	6.63
12M1225G	12M2225G	30°	2	2	5	6.63
....	12M2235G	30°	2	3	5	8.53

SLIDE SWITCH

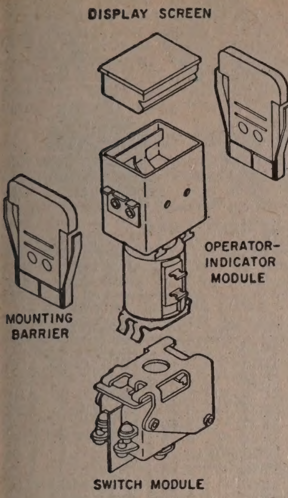
Modern design, for use in small AC appliances, radios, record players, and TV sets. Single pole, single throw action rated at 5 amps, 125 VAC. UL Approved flame-retardant material used throughout.
Mallory No. SW1/560001 Slide Switch—Net Each...... **$1.21**

SP1 SPECIAL SWITCH

Original replacement SPST push-push switch used on the rear of controls in Curtis Mathes and other television sets.
Mallory No. SP1 Special Switch—Net Each........... **$0.51**

MICRO SWITCH Series 2 Switches

ILLUMINATED DISPLAY AND PUSHBUTTON SWITCH DEVICES



A new series of modular indicator and pushbutton units. No tools required for installation. The needs of modern indication and keyboard control met efficiently. Any panel is made up of the desired number and types of each unit and the units made up of the parts needed to do a specific function. Especially designed for such equipment as: Electronic data-processing systems, computers, graphic flow panels, business machines, missile and supervisory panels, scientific instruments, annunciator panels, etc. All units readily combined into rows or columns.

MOUNTINGS

Barrier Mountings are attached to two sides (long or short) of the indicators or operator-indicators and serve as mounting devices as well as separation-of-modules function. **Flange Mountings** have spring clip mounting devices ready-attached to two sides (long or short); units simply snap into mounting holes.

INDICATOR UNITS

Consist of light box with 2, 3 or 4 sockets and clips for attaching display screen. Barrier or flange mounted (long or short) unit for indication only. Mount same as operator-indicator units.

LIGHTING UNITS

Display Screens are large and may be engraved with signs or symbols. **Color Filters** are placed over lamps to obtain projected color with translucent white display screens. **Lamps** used in all units are standard miniature Nos. 328, 337, 330, 336, 334, 327.

SWITCHING UNITS

Switching units are wired simply and quickly and are snapped into position on the bottom of the operator-indicator units.

SHORT BARRIER TYPE
PRODUCT CLASS 86
OPERATOR-INDICATOR

M.S. No.	No. of Sockets	Hold-in Coil DC	List Price
2C1	2	w/o	$3.55
2C3	4	w/o	4.15
2C13	2	6 v.	8.35
2C15	4	6 v.	8.90
2C25	2	28 v.	8.50
2C27	4	28 v.	9.00
2C37	4	48 v.	9.10
2C39	4	48 v.	9.70

INDICATOR

2F1	2	....	$2.80
2F3	4	....	3.35

LONG BARRIER TYPE
PRODUCT CLASS 86
OPERATOR-INDICATOR

2C7	2	w/o	$3.55
2C9	4	w/o	4.15
2C19	2	6 v.	8.35
2C21	4	6 v.	8.90
2C31	2	28 v.	8.50
2C33	4	28 v.	9.00
2C43	2	48 v.	9.10
2C45	4	48 v.	9.70

INDICATOR

2F7	2	....	$2.80
2F9	4	....	3.35

SHORT FLANGE TYPE
PRODUCT CLASS 86
OPERATOR-INDICATOR

2C10	2	w/o	$4.05
2C12	4	w/o	4.55
2C22	2	6 v.	8.80
2C24	4	6 v.	9.35
2C34	2	28 v.	8.90
2C36	4	28 v.	9.50
2C46	2	48 v.	9.60
2C48	4	48 v.	10.10

INDICATOR

2F10	2	....	$3.25
2F12	4	....	3.75

LONG FLANGE TYPE
PRODUCT CLASS 86
OPERATOR-INDICATOR

M.S. No.	No. of Sockets	Hold-in Coil DC	List Price
2C4	2	w/o	$ 4.05
2C6	4	w/o	4.55
2C16	2	6 v.	8.80
2C18	4	6 v.	9.35
2C28	2	28 v.	8.90
2C30	4	28 v.	9.50
2C40	2	48 v.	9.60
2C42	4	48 v.	10.10

INDICATOR

2F4	2	....	$ 3.25
2F6	4	....	3.75

MOUNTING BARRIERS
PRODUCT CLASS 85
SHORT

M.S. No.	Color	Panel Thick.	List Price
2B1	Gray	1/16–3/16″	$0.45
2B3	Black	1/16–3/16″	.45
2B10	White	1/16–3/16″	.45
2B11	Red	1/16–3/16″	.45
2B5	Gray	3/16–5/16″	.45
2B7	Black	3/16–5/16″	.45
2B12	White	3/16–5/16″	.45
2B13	Red	3/16–5/16″	.45

LONG

2B2	Gray	1/16–3/16″	$0.45
2B4	Black	1/16–3/16″	.45
2B14	White	1/16–3/16″	.45
2B15	Red	1/16–3/16″	.45
2B6	Gray	3/16–5/16″	.45
2B8	Black	3/16–5/16″	.45
2B16	White	3/16–5/16″	.45
2B17	Red	3/16–5/16″	.45

COLOR LAMP FILTERS
PRODUCT CLASS 88

M.S. No.	Color	Type	List Price
2G5	Red	Silicone	$0.22
2G6	Yellow	Silicone	.22
2G7	Green	Silicone	.22
2G8	Blue	Silicone	.22
2G10	Amber	Silicone	.22
2G11	White	Silicone	.22

SPACING BARRIERS
PRODUCT CLASS 85
LONG—1.360″

No.	Color	Spacer	List
2B9	Gray	.160 ± .005	$0.40
2B18	Black	.160 ± .005	.40
2B19	White	.160 ± .005	.40

SHORT—1.120″

2B23	Gray	.160 ± .005	$0.40
2B24	Black	.160 ± .005	.40
2B25	White	.160 ± .005	.40
2B26	Red	.160 ± .005	.40

DISPLAY SCREENS
PRODUCT CLASS 84
LATERALLY SPLIT

No.	Colors	List
2A36	Red/Red	$1.35
2A37	Red/Yellow	1.35
2A38	Red/Green	1.35
2A39	Red/Blue	1.35
2A40	Red/White	1.35
2A41	Yellow/Green	1.35
2A42	Yellow/Blue	1.35
2A43	Yellow/White	1.35
2A44	Yellow/Yellow	1.35
2A45	Green/Blue	1.35
2A46	Green/White	1.35
2A47	Green/Green	1.35
2A48	Blue/White	1.35
2A49	Blue/Blue	1.35
2A50	White/White	1.35

DISPLAY SCREENS (CONT'D)
SOLID SCREEN

No.	Color	List
2A1	Red	$0.56
2A2	Yellow	.56
2A3	Green	.56
2A4	Blue	.56
2A5	White	.56

3-PIECE SCREEN

2A66	Red	$0.72
2A67	Yellow	.72
2A68	Green	.72
2A69	Blue	.72
2A70	White	.72

LONGITUDINALLY SPLIT

2A51	Red/Red	$1.35
2A52	Red/Yellow	1.35
2A53	Red/Green	1.35
2A54	Red/Blue	1.35
2A55	Red/White	1.35
2A56	Yellow/Green	1.35
2A57	Yellow/Blue	1.35
2A58	Yellow/White	1.35
2A59	Yellow/Yellow	1.35
2A60	Green/Blue	1.35
2A61	Green/White	1.35
2A62	Green/Green	1.35
2A63	Blue/White	1.35
2A64	Blue/Blue	1.35
2A65	White/White	1.35

LAMP-FILTER TOOL

Permit changing of lamps and color filters from front of mounting panel without causing breakage or shorts.

M.S. No. 15PA32—Net Each........................... **$1.10**

SWITCHING UNITS—PRODUCT CLASS 87

TB Type Switch—Rating: 10 amps, 125–250 v. AC; 10 amps 30 v. DC.

No.	Contact Arrangement	Terminals	List
2D64	2 Circuit, Double Break	Screw (end)	$2.70
2D86	2 Circuit, Double Break	Solder (end)	2.95

SM Type Subminiature—Rating: UL Listed for 5 amps, 125 or 250 v. AC. 30 v. DC rating: Inductive, 3 amps at sea level, 2.5 amps at 25,000 ft.; resistive, 5 amps, at sea level and 50,000 ft., max. inrush 24 amps.

No.	SPDT Circ.	Type	Contacts	List
2D1	2	Momentary	Gold	$ 4.25
2D2	2	Momentary	Silver	3.45
2D4	3	Momentary	Gold	6.15
2D5	3	Momentary	Silver	5.00
2D8	4	Momentary	Gold	9.80
2D9	4	Momentary	Silver	8.20
2D25	2	Alternate Action	Gold	5.90
2D26	2	Alternate Action	Silver	5.10
2D32	4	Alternate Action	Gold	11.40
2D33	4	Alternate Action	Silver	9.80

M.S. No. 2D62 HS Type—Hermetically sealed. Rating: 1 amp, 125 v. AC inductive or resistive load; 10 amps, 28 v. DC inductive load; 25 amps, 28 v. DC resistive load. Contact arrangement, SPDT. Screw type terminals. List Price...... **$11.60**

M.S. No. 2D66 A Type—High capacity. Rating: 20 amps, 125, 250, 480 v. AC; 1 hp, 125 v. AC; 2 hp, 250 v. AC. Contact arrangement, SPDT. Screw type terminals. List Price... **$3.50**

M.S. No. 2D88 MT Type—Magnetic blow-out. Rating: 10 amps, 125 v. AC or DC resistive load; ½ hp, 125 v. DC polarized; ¼ hp, 125 v. nonpolarized. Contact arrangement, SPDT. Screw type terminals. List Price..................... **$5.85**

M.S. No. 2D89 DT Type—Rating: 10 amps, 125 or 250 v. AC: 0.3 amp, 125 v. DC; 0.15 amp, 250 v. DC. Contact arrangement, DPDT. Screw type terminals. List Price.......... **$8.25**

M.S. No. 2D68 Z Type—Long life. Rating: 15 amps, 125, 250, 480 v. AC; ½ amp, 125 v. DC; ¼ amp, 250 v. DC. Contact arrangement, SPDT. Screw type terminals. List Price. **$3.50**

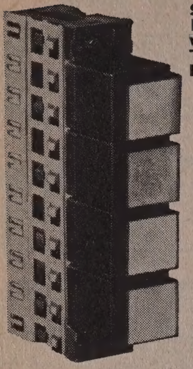
M.S. No. 2D70 V3 Type—Rating: 15 amps, 125 or 250 v. AC; 10 amps resistive or inductive load at 30 v. DC at sea level; 6 amps, inductive and 10 amps resistive load at 30 v. DC at 50,000 ft.; ⅛ hp, 125 v. AC. Contact arrangement, SPDT. Screw type terminals. List Price.......................... **$1.95**

M.S. No. 2D72 V3 Type—Same as above but DPDT contact. List Price................................ **$2.95**

WRITE OR CALL FOR QUANTITY DISCOUNTS.

OUR MODERN, UP-TO-DATE STOCKS ASSURE PROMPT DELIVERY—WRITE OR CALL US FOR FAST SERVICE.

MICRO SWITCH SERIES 3 LIGHTED PUSHBUTTON SWITCHES


Strip Mount with Type 3M Hardware

Individual Mount

MOUNTING STYLES

Types 3A, 3B and 3C: For matrix or strip mounting; require Type 3M hardware (listed below). Mount in a single cutout; two or more rows can be attached to form a matrix, or one row can be strip mounted. Termination for direct wiring (or plug-in to optional connector block; suffix -1). **Types 3G, 3H and 3J:** Two integral clips for snap-in mounting to panels .060″ to .150″ thick; can be strip mounted or individually mounted in single cutout. Size, .82″ x .86″ x 2.110″ deep overall.

POWER SWITCHES (PRODUCT CLASS 125)

Available with Form X (SPST-NO double-make), Form Y (SPST-NC double-break) or Form Z (SPDT double-make double-break, break-before-make) contacts. **Ratings:** 5 amps inductive/resistive at 115 VAC; 3 amps ind., 5 amps res. at 28 VDC. **Life:** 100,000 operations at rated load. **Operating Force:** 8.0 oz. approx. **Total Travel:** 0.250″ approx. **Series 3A:** For matrix or strip mounting; requires Type 3M hardware. **Series 3A-1:** Same as 3A, but with connector block. **Series 3G:** Individual or strip mounting; no additional hardware needed (To order, change prefix **3A** to **3G**).

Poles	Switch Circuit, Form	Action	Lamp Circuits	Series 3A† M.S. No.	Series 3A† List Price	Series 3A-1 M.S. No.	Series 3A-1 List Price
1	Z	Mom.	2	**3A10(*)**	**$3.50**	**3A10(*)-1**	**$4.90**
1	X	Mom.	2	**3A11(*)**	**3.00**	**3A11(*)-1**	**4.15**
1	Y	Mom.	2	**3A12(*)**	**3.00**	**3A12(*)-1**	**4.15**
1	Z	Mom.	1	**3A13(*)**	**3.35**	**3A13(*)-1**	**4.65**
1	X	Mom.	1	**3A14(*)**	**2.85**	**3A14(*)-1**	**3.90**
1	Y	Mom.	1	**3A15(*)**	**2.85**	**3A15(*)-1**	**3.90**
2	Z	Mom.	2	**3A20(*)**	**4.50**	**3A20(*)-1**	**6.40**
2	X	Mom.	2	**3A21(*)**	**3.50**	**3A21(*)-1**	**4.90**
2	Y	Mom.	2	**3A22(*)**	**3.50**	**3A22(*)-1**	**4.90**
2	1Z, 1Y	Mom.	2	**3A23(*)**	**4.00**	**3A23(*)-1**	**5.65**
2	1X, 1Z	Mom.	2	**3A24(*)**	**4.00**	**3A24(*)-1**	**5.65**
2	Z	Mom.	1	**3A25(*)**	**4.35**	**3A25(*)-1**	**6.15**
2	X	Mom.	1	**3A26(*)**	**3.35**	**3A26(*)-1**	**4.65**
2	Y	Mom.	1	**3A27(*)**	**3.35**	**3A27(*)-1**	**4.65**
2	1Z, 1Y	Mom.	1	**3A28(*)**	**3.85**	**3A28(*)-1**	**5.40**
2	1X, 1Z	Mom.	1	**3A29(*)**	**3.85**	**3A29(*)-1**	**5.40**
1	Z	Alt.	2	**3A30(*)**	**3.50**	**3A30(*)-1**	**4.90**
1	X	Alt.	2	**3A31(*)**	**3.00**	**3A31(*)-1**	**4.15**
1	Y	Alt.	2	**3A32(*)**	**3.00**	**3A32(*)-1**	**4.15**
1	Z	Alt.	1	**3A33(*)**	**3.35**	**3A33(*)-1**	**4.65**
1	X	Alt.	1	**3A34(*)**	**2.85**	**3A34(*)-1**	**3.90**
1	Y	Alt.	1	**3A35(*)**	**2.85**	**3A35(*)-1**	**3.90**
2	Z	Alt.	2	**3A40(*)**	**4.50**	**3A40(*)-1**	**6.40**
2	X	Alt.	2	**3A41(*)**	**3.50**	**3A41(*)-1**	**4.90**
2	Y	Alt.	2	**3A42(*)**	**3.50**	**3A42(*)-1**	**4.90**
2	1Z, 1Y	Alt.	2	**3A43(*)**	**4.00**	**3A43(*)-1**	**5.65**
2	1X, 1Z	Alt.	2	**3A44(*)**	**4.00**	**3A44(*)-1**	**5.65**
2	Z	Alt.	1	**3A45(*)**	**4.35**	**3A45(*)-1**	**6.15**
2	X	Alt.	1	**3A46(*)**	**3.35**	**3A46(*)-1**	**4.65**
2	Y	Alt.	1	**3A47(*)**	**3.35**	**3A47(*)-1**	**4.65**
2	1Z, 1Y	Alt.	1	**3A48(*)**	**3.85**	**3A48(*)-1**	**5.40**
2	1X, 1Z	Alt.	1	**3A49(*)**	**3.85**	**3A49(*)-1**	**5.40**
1	Z	Mom.	None	**3A50(*)**	**3.20**	**3A50(*)-1**	**4.40**
1	X	Mom.	None	**3A51(*)**	**2.70**	**3A51(*)-1**	**3.65**
1	Y	Mom.	None	**3A52(*)**	**2.70**	**3A52(*)-1**	**3.65**
2	Z	Mom.	None	**3A53(*)**	**4.20**	**3A53(*)-1**	**5.90**
2	X	Mom.	None	**3A54(*)**	**3.20**	**3A54(*)-1**	**4.40**
2	Y	Mom.	None	**3A55(*)**	**3.20**	**3A55(*)-1**	**4.40**
2	1Z, 1Y	Mom.	None	**3A56(*)**	**3.70**	**3A56(*)-1**	**5.15**
2	1X, 1Z	Mom.	None	**3A57(*)**	**3.70**	**3A57(*)-1**	**5.15**
1	Z	Alt.	None	**3A58(*)**	**3.20**	**3A58(*)-1**	**4.40**
1	X	Alt.	None	**3A59(*)**	**2.70**	**3A59(*)-1**	**3.65**
1	Y	Alt.	None	**3A60(*)**	**2.70**	**3A60(*)-1**	**3.65**
2	Z	Alt.	None	**3A61(*)**	**4.20**	**3A61(*)-1**	**5.90**
2	X	Alt.	None	**3A62(*)**	**3.20**	**3A62(*)-1**	**4.40**
2	Y	Alt.	None	**3A63(*)**	**3.20**	**3A63(*)-1**	**4.40**
2	1Z, 1Y	Alt.	None	**3A64(*)**	**3.70**	**3A64(*)-1**	**5.15**
2	1X, 1Z	Alt.	None	**3A65(*)**	**3.70**	**3A65(*)-1**	**5.15**

*Add suffix (**A** thru **P**) from table below to indicate color. †For series 3G, change prefix **3A** to **3G**; prices are the same.

*COLOR CODES

Add code letter as a suffix to Micro Switch Type No. (for switches or indicators with connector block, the code letter should be inserted before the **-1** in Type No.; e.g., 3A10**A**-1).

Color Code	Housing (Bezel‡)	Barrier	Color Code	Housing (Bezel‡)	Barrier
A	Black	None	**G**	Red	Red
F	Black	Black	**C**	Green	None
L	Gray	None	**H**	Green	Green
M	Gray	Gray	**D**	Blue	None
N	White	None	**J**	Blue	Blue
P	White	White	**E**	Yellow	None
B	Red	None	**K**	Yellow	Yellow

‡Bezel provided with types 3G, 3H and 3J only.

Lighted pushbutton switches and matching lighted indicators are available in a wide array of options for display and design flexibility. Choice of matrix, individual or strip mounting; designed for uniform panel appearance. Switches and lamps can be replaced from front of panel; buttons (order separately) are re-legendable. Available with momentary or two-level alternate action; as 5-amp power switches with Form X, Y or Z contacts; or Form A reed switches; all with audible "click click" feedback. Choice of five lighted display colors and seven housing colors.

REED SWITCHES (PRODUCT CLASS 125)

Form A (normally open) contacts; momentary or alternate action. **AC Ratings:** 12 VA max., inrush or resistive. Max. current, 250 mA at 12 VA. **DC Ratings:** 8 watts max. resistive only. Max. current, 250 mA at 8 watts. **Operating Force:** 3.0 oz. **Total Travel:** 0.250″ approx. **Termination:** Direct wire plug-in to connector blocks, or PC terminals. **Series 3B:** For matrix or strip mounting; requires 3M type hardware. **Series 3B-1:** Same as 3B, but with addition of connector block. **Series 3H:** Individual or strip mounting; no additional hardware required (change prefix **3B** to **3H**).

Poles	Action	Lamp Ckts.	Termination‡	Series 3B† M.S. No.	Series 3B† List	Series 3B-1 M.S. No.	Series 3B-1 List
1	Mom.	2	DW	**3B10(*)**	**$3.75**	**3B10(*)-1**	**$4.75**
1	Mom.	1	DW	**3B11(*)**	**3.60**	**3B11(*)-1**	**4.50**
2	Mom.	2	DW	**3B20(*)**	**4.85**	**3B20(*)-1**	**5.85**
2	Mom.	1	DW	**3B21(*)**	**4.70**	**3B21(*)-1**	**6.00**
1	Alt.	2	DW	**3B30(*)**	**3.75**	**3B30(*)-1**	**4.75**
1	Alt.	1	DW	**3B31(*)**	**3.60**	**3B31(*)-1**	**4.50**
2	Alt.	2	DW	**3B40(*)**	**4.85**	**3B40(*)-1**	**6.25**
2	Alt.	1	DW	**3B41(*)**	**4.70**	**3B41(*)-1**	**6.00**
1	Mom.	2	PC	**3B50(*)**	**3.75**	**3B50(*)-1**	**4.75**
1	Mom.	1	PC	**3B51(*)**	**3.60**	**3B51(*)-1**	**4.50**
2	Mom.	2	PC	**3B60(*)**	**4.85**	**3B60(*)-1**	**5.85**
2	Mom.	1	PC	**3B61(*)**	**4.70**	**3B61(*)-1**	**6.00**
1	Alt.	2	PC	**3B70(*)**	**3.75**	**3B70(*)-1**	**4.75**
1	Alt.	1	PC	**3B71(*)**	**3.60**	**3B71(*)-1**	**4.50**
2	Alt.	2	PC	**3B80(*)**	**4.85**	**3B80(*)-1**	**6.25**
2	Alt.	1	PC	**3B81(*)**	**4.70**	**3B81(*)-1**	**6.00**

*Add suffix (**A** thru **P**) from table below to indicate color. †For Series 3H, change prefix **3B** to **3H**; prices are the same. ‡DW—For direct wiring to switch; PC—For terminating on printed circuit board.

BUTTONS (PRODUCT CLASS 124)

Re-legendable one-section and two-section buttons are easily removed by pulling forward out of switch or indicator housing. Lamps and legends can be changed from front of panel. Transparent colorless insert fits over colored diffuser plate and snaps into button shell. Legends may be applied to diffuser plate, which can be easily changed. Display is provided by one or two T-1, 5 or 28-volt lamps. For hot stamp legends (up to six 7/64″ high letters in each or two rows) change **N** in Type No. to **L** and add **25c** to List Price.

Micro Switch Number	Display	Shell Color	Lamps (Assembled)	List Price
3D-11(**)1N-1	1-section	Black	One 5-volt	**$2.05**
3D-11(**)1N-2	1-section	Black	Two 5-volt	**2.85**
3D-11(**)1N-3	1-section	Black	One 28-volt	**2.60**
3D-11(**)1N-4	1-section	Black	Two 28-volt	**3.95**
3D-11(**)1N	1-section	Black	None	**1.25**
3D-21(**)1N-1	2-section	Black	One 5-volt	**2.65**
3D-21(**)1N-2	2-section	Black	Two 5-volt	**3.45**
3D-21(**)1N-3	2-section	Black	One 28-volt	**3.20**
3D-21(**)1N-4	2-section	Black	Two 28-volt	**4.55**
3D-21(**)1N	2-section	Black	None	**1.85**

Insert two letters to indicate display colors (W**—white; **R**—red; **G**—green; **B**—blue; **Y**—yellow). For two-section buttons, add letter for top section first, then for bottom section. For one-section buttons, add double letter (**RR, BB**, etc.).

LIGHTED INDICATORS (PRODUCT CLASS 125)

M.S. No.†	Lamp Circuits	Mounting Type	List Price
3C10	2	Matrix or strip mounting;	**$1.75**
3C11	1	requires 3M type hardware	**1.60**
3C10-1	2	Same as above, but with	**2.50**
3C11-1	1	addition of connector block	**2.25**
3J10	2	Individual or strip mounting;	**1.75**
3J11	1	no additional hardware needed	**1.60**

†Add suffix (**A** thru **P**) from table below to indicate color.

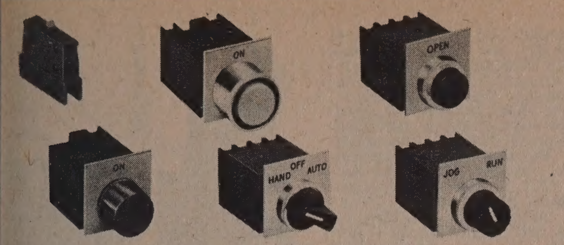
MOUNTING HARDWARE (PRODUCT CLASS 126)

For strip or matrix mounting of 3A, 3B and 3C modules. Consists of two mounting bars and two mounting blocks. **Type 3M1:** For use with connector blocks for plug-in wiring. **Type 3M2:** Narrow width type for direct wiring. To determine row length, add the number of switches and/or indicators; then convert the total to the proper suffix number (i.e., **09** for a 5-row unit).

Row Lgth., Units	Standard No. 3M1-	Standard List Price	Narrow No. 3M2-	Narrow List Price	Row Lgth., Units	Standard No. 3M1-	Standard List Price	Narrow No. 3M2-	Narrow List Price
1	**01**	**$1.80**	**01**	**$1.65**	9	**17**	**$2.35**	**17**	**$2.10**
2	**03**	**1.80**	**03**	**1.65**	10	**19**	**2.35**	**19**	**2.10**
3	**05**	**1.80**	**05**	**1.65**	11	**21**	**2.35**	**21**	**2.10**
4	**07**	**1.80**	**07**	**1.65**	12	**23**	**2.35**	**23**	**2.10**
5	**09**	**1.80**	**09**	**1.65**	13	**25**	**2.35**	**25**	**2.10**
6	**11**	**1.80**	**11**	**1.65**	14	**27**	**2.35**	**27**	**2.10**
7	**13**	**1.80**	**13**	**1.65**	15	**29**	**2.35**	**29**	**2.10**
8	**15**	**1.80**	**15**	**1.65**	16	**31**	**2.35**	**31**	**2.10**

WRITE OR CALL US FOR QUANTITY DISCOUNTS

MICRO SWITCH SERIES PW OILTIGHT PUSHBUTTONS



PWC CONTACT BLOCKS

Standard-duty contact block controls loads up through NEMA size 4 contactors and motor starters. Has double-break construction, chisel-shaped, fine silver contacts. **General-purpose electronic duty contact block** designed for controlling electronic and small magnetic loads up through NEMA size 1 contactors. Has single-break snap-acting design with silver contacts. **Low-level electronic duty contact block** for low energy loads usually under 50 volts. Has snap-acting design with gold bifurcated (two points in parallel) contacts. Contact blocks available with **Circuit Form X** (SPST-NO double-break), **Form Y** (SPST-NC double-break), or **Form C** (SPDT single-break) contacts. Any combination of four contact blocks may be used with one operator (two contact blocks with lighted pushbuttons).

ELECTRICAL RATINGS

Electrical Rating	Volts	Amperes Make	Amperes Break	Type Load
A	120 AC 125 DC 30 DC	30 1.1 10	3 1.1 10	.35 PF capacitive Inductive Inductive
B	120 AC 30 DC 30 DC	7.5 3 5	1.2 3 5	.35 PF capacitive Inductive Resistive
C	120 AC max. 30 DC max. 30 DC max.	1 0.5 1	1 0.5 1	Resistive Inductive Resistive

Micro-Switch No.	Contact Block Type	Term. Type	Elect. Rating	Circuit Form	Contacts	List Price
PWCD	Standard	Screw	A	X	Silver	$3.20
PWCE	Standard	Screw	A	Y	Silver	3.20
PWCK	Standard	Screw	A	X	Silver	3.20
PWCJ	Standard	Screw	A	Y	Silver	3.20
PWCF	Standard	Push-On	A	X	Silver	3.00
PWCG	Standard	Push-On	A	Y	Silver	3.00
PWCC	Gen. Purp.	Push-On	B	C	Silver	5.40
PWCB	Low Level	Push-On	C	C	Gold	8.00
PWCM	Gen. Purp.	Screw	B	C	Silver	5.70
PWCL	Low Level	Screw	C	C	Gold	8.30

PWP AND PWM UNLIGHTED PUSHBUTTONS

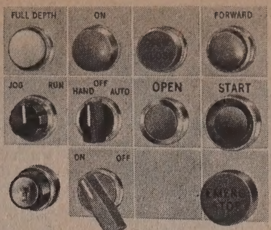
Unlighted pushbuttons with extended heads, full guard, and full guard (large opening), plus 1⅛″ and 1½″ mushroom heads. Full guards (large opening) provide opening as large as heavy duty oiltight devices and permit operation by a gloved finger. Any combination of standard duty or electronic duty contacts block (up to a maximum of four) may be used with these pushbuttons. Size, behind panel, 1 13/32″ w. x 1 15/16″ d. x 1 7/32″ h. Legend plates, 1 15/32″ w. x 1 15/32″ h.

M-S No.	Description†	List Pr.
PWP1	Unlighted pushbutton without ring	$ 4.40
PWP2	Unguarded, extended head pushbutton w/ring	5.40
PWP3	Full guard, ¾″ I.D., w/ring	5.40
PWP4	Full guard (large opening) 1″ I.D. w/ring	5.40
PWM2	Mushroom head unit, small, 1⅛″ dia.	11.40
PWM3	Mushroom head unit, large, 1½″ dia.	11.40

†Add suffix for button color: 2 (Black), **3** (Red), **4** (Orange), **5** (Yellow), **6** (Green), **7** (Blue), **8** (White); (e.g., PWP12, Operator with unlighted black button without ring). Mushroom head units in black, red and yellow only.

PWH LIGHTED PUSHBUTTONS

Combines function of an unlighted pushbutton and an indicator in one unit. Saves space and cost. Offers guarded lens and extended lens versions. Translucent pigmented nylon lens provides long operating life and high chemical resistance. Choice of lens colors. Transformer equipped units available for operation at 120 VAC, resistor units for 120 VAC/DC; and full voltage devices for operation at 6–8; 12–14; or 24–28 volts. Lighted pushbuttons accept one or two contact blocks. Size, behind panel, 1 13/32″ w. x 1 15/16″ d. x 1 7/32″ h. Legend plates, 1 15/32″ w. x 1 15/32″ h.



PWH LIGHTED PUSHBUTTONS (CONT'D)

PWH Lighted Pushbutton with Extended Lens, Choice of Lens Color†. To order Lighted Pushbutton with **Full Guard** instead of Extended Lens, change first numerical digit to **3** (e.g., PWH310). To order **Full Guard** (**Large Opening**), change first numerical digit to **4** (e.g., PWH410).

Micro-Switch No.	Term. Type	Micro-Switch No.	Term. Type	Voltage	List Price
PWH210	Screw	**PWH250**	Push-On	Full (less lamp)	$16.40
PWH212	Screw	**PWH252**	Push-On	6–8 Volts	17.40
PWH213	Screw	**PWH253**	Push-On	12–14 Volts	17.40
PWH215	Screw	**PWH255**	Push-On	24–28 Volts	17.40
PWH221	Screw	**PWH261**	Push-On	Trans. 120 VAC	21.40
PWH231	Screw	**PWH271**	Push-On	Res., 120 VAC/DC	17.40

PWL ONE-LAMP AND PUSH-TO-TEST INDICATORS AND PWD TWO-LAMP INDICATORS

Superior lens design gives brilliant indication from any angle. Indicating lights and push-to-test lenses have different shapes for easy recognition. Push-to-test form permits manual check of lamp. Lenses, in choice of colors, remove easily without disturbing units' mounting ring. Two-lamp indicators offer split lens and legends on insert to show dual status—OPEN/CLOSE, OFF/ON, UP/DOWN, IN/OUT, etc. Size, behind panel, 1 13/32″ w. x 1 15/16″ d. x 1 7/32″ h. Legend plates, 1 15/32″ w. x 1 15/32″ h. **To order PWD Two-Lamp Indicating Lights** write for ordering information and prices. **PWL One-Lamp Indicating Lights, Choice of Lens Color†.** To order **Push-to-Test Indicator** change letter B to **P** (e.g., PWLP10) and add **$6.00** to list price.

Micro-Switch No.	Term. Type	Micro-Switch No.	Term. Type	Voltage	List Price
PWLB10	Screw	**PWLB50**	Push-On	Full (less lamp)	$16.40
PWLB12	Screw	**PWLB52**	Push-On	6–8 Volts	17.40
PWLB13	Screw	**PWLB53**	Push-On	12–14 Volts	17.40
PWLB15	Screw	**PWLB55**	Push-On	24–28 Volts	17.40
PWLB21	Screw	**PWLB61**	Push-On	Trans. 120 VAC	21.40
PWLB31	Screw	**PWLB71**	Push-On	Res., 120 VAC/DC	17.40

†Add suffix for lens color: 3 (Red), **4** (Amber), **5** (Yellow), **6** (Green), **7** (Blue), **8** (White). (e.g., PWH2103, red lens.)

PWS AND PWK SELECTOR UNITS

Knob or wing lever selectors are offered in a choice of two, three, four, or five maintained position and two or three position spring return. Knobs and wing levers available in choice of colors with contrasting black or white indicating line. Wing levers provide large gripping area, ideally suited for gloved-hand operation and for frequent operation of spring return units. Key-operated selectors offered in a variety of lock and withdrawal positions. Two keys supplied with each operator. Selectors provide separate cam surface for each of four contact blocks. Selectors accept up to four contact blocks in any combination of standard and electronic duty for multiple-circuit flexibility. Complete information available on request.

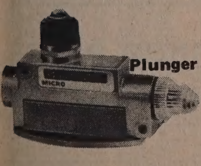
PWU SELECTOR-PUSH UNITS

Selector-push units offered in 2- or 3-position maintained with extended button. Many cam choices permit wide range of sequencing possibilities. Push features are accomplished by pins that extend through the turn cam. Accept up to four contact blocks in any combination of standard and electronic duty for multiple-circuit versatility. Complete information available on request.

PWN LEGEND PLATES

Standard aluminum legend plates have words with 9/64″ high characters except "STOP" which may be ordered in 13/64″ high also. Special and custom legends may be ordered. Plates available in aluminum or plastic. Complete information on request.

BZG/BZH ENCLOSED SWITCHES



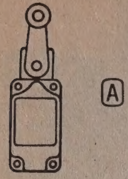
Roller Lever

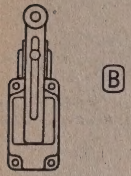
Completely sealed construction with a diecast aluminum housing form a NEMA 1 and 4 enclosure. SPST precision switching element is rated 15 amps at 125, 250 or 480 VAC. Choice of sturdy side and flange mounting. Sizes of side mount plunger models are: 3.391″ w. (single conduit), 3.902″ w. (double conduit) x 1.024″ d. x 3.022″ h.

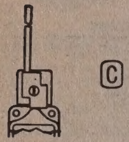
Operating Characteristics	Model Type: Plunger	Model Type: Rod Lever	Model Type: Roller Lever
Operating Force	9–24 oz.	3–7 oz.	10–20 oz.
Release Force	4 oz. min.	1 oz. min.	6 oz. min.
Pretravel	.078 max.	.718 max.	.188 max.
Differential Travel	.002 max.	.229 max.	.006 max.
Overtravel	.219 min.	.828 min.	.219 min.

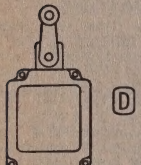
Micro-Switch No. Side Mount	Micro-Switch No. Flange Mount	No. Conduit Openings	Actuator Type	List Price
BZG1-2RN	**BZH1-2RN**	1	Plunger	$ 7.55
BZG2-2RN	**BZH2-2RN**	2	Plunger	8.75
BZG1-2RN62	**BZH1-2RN62**	1	Rod Lever	11.10
BZG2-2RN62	**BZH2-2RN62**	2	Rod Lever	12.25
BZG1-2RN2	**BZH1-2RN2**	1	Roller Lever	11.10
BZG2-2RN2	**BZH2-2RN2**	2	Roller Lever	12.25

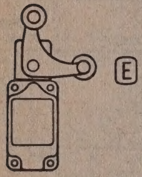
MICRO SWITCH "LS" Limit Switches

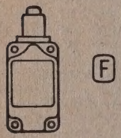


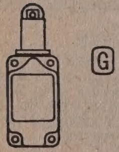


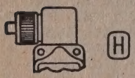


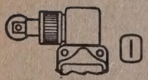


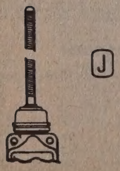












MICRO
MICRO SWITCH

Compact Type

Available in two types, compact and plug-in. Feature small size, rugged construction and complete versatility. Accurate repeatability through millions of operations. Switches are field adjustable and components are interchangeable to minimize limit switch inventory. O-rings on the actuator shaft, between the head and housing and around the cover plate or mounting block protect all moving parts from oil, coolants, water, dust and chips. **Contact Arrangements:** Two-circuit double-break, except as indicated. **Temperature Range:** To 160° F; high temperature types to 250° F. **Terminals:** Screw, except where noted. LS compact limit switches are available in versions listed by UL, CSA and Coast Guard. Types data and pricing on request.

ELECTRICAL RATINGS†

Code	Amps at VAC 120	Amps at VDC 115	Amps at VDC 230	Amps at VDC 550	hp at VAC 120	hp at VAC 240
A	10‡	0.8#	0.4	0.1	⅓	¾
B	10‡	....	....	....	¼	½
C	10	....	....	....	⅓	....
D	10§	....	....	....	....	¾
G	10‡	0.8#	0.4#	0.1#	¼	½
H	10‡	....	....	....	⅓	¾

‡At 120, 240, 480 VAC; 600 VAC max. pilot duty.
§At 240 VAC. #Resistive.

MICRO
MICRO SWITCH

201LS1 **18PA1**

Plug-In Type

ROTARY MOTION LEVER ACTUATOR—MOMENTARY CONTACT

ACTUATOR—¾" DIA. HARDENED STEEL ROLLER ON FORGED ALUMINUM ARM (FIG. A)

Compact Type M.S. No.	Compact Type List*	Plug-In Type* M.S. No.	Plug-In Type* List*	Features	†	Maximum Oper. Force	Maximum Pre-travel	Min. Over-travel	Max. Diff. Travel
1LS1	**$32.00**	**201LS1**	**$32.00**	Standard, 20° pretravel	A	3 lb.	20°	30°	12°
1LS19	**34.00**	**201LS19**	**34.00**	Low, 5° pretravel	B	3 lb.	5°	30°	......
1LS131	**34.00**	**None**	....	Low force, 5° pretravel	B	18 oz.	5°	30°	......
1LS501	**37.40**	**201LS501**	**37.40**	Light indicator, 120 VAC	C	3 lb.	20°	30°	12°
1LS501-A1	**37.40**	**201LS501-A1**	**37.40**	Light indicator, 240 VAC	D	3 lb.	20°	30°	12°
1LS6	**32.00**	**201LS6**	**32.00**	Low operating force	A	18 oz.	20°	30°	12°
7LS1	**31.20**	**None**	....	Cavity mount 1LS1	A	3 lb.	20°	30°	12°

ACTUATOR—ADJUSTABLE LENGTH (1"-3½") ROLLER LEVER (FIG. B)

1LS3	**$35.20**	**201LS3**	**$35.20**	¾" nylon roller; reversible	A	3 lb.	20°	30°	12°
1LS58	**37.20**	**None**	....	As above, 5° pretravel	B	3 lb.	5°	30°	......
1LS59	**37.20**	**None**	....	Low force, 5° pretravel	B	18 oz.	5°	30°	......

ACTUATOR—ADJUSTABLE LENGTH ALUMINUM ROD (FIG. C)

1LS10	**$34.00**	**201LS10**	**$34.00**	5" aluminum rod	A	5 oz.	20°	30°	12°
1LS47	**36.00**	**201LS47**	**36.00**	As above, 5° pretravel	B	5 oz.	5°	30°	......
1LS53	**36.90**	**201LS51**	**36.00**	Low force, 5° pretravel	B	3 oz.	5°	30°	......

ROTARY MOTION LEVER ACTUATOR—MAINTAINED CONTACT

ACTUATOR—TWO STEEL ROLLERS ON FORKED ALUMINUM ARM (FIG. E)

6LS1	**$40.00**	**206LS1**	**$38.00**	Rollers on opposite sides	A	2 lb.	55°	35°	20°
6LS3	**40.60**	**None**	....	Nylon rollers on same side	A	2 lb.	55°	35°	20°

PUSH MOTION PLUNGER ACTUATOR—MOMENTARY CONTACT

ACTUATOR—TOP STRAIGHT PLUNGER (FIG. F)

2LS1	**$32.30**	**202LS1**	**$28.00**	Std. inline motion actuator	A	7 lb.	.065"	.250"	.020"
2LS111	**37.50**	**202LS111**	**33.20**	Low force; plunger seal	H	36 oz.	.065"	.219"	.009"

ACTUATOR—ROLLER TOP PLUNGER (FIG. G)

5LS1	**$34.40**	**205LS1**	**$32.00**	Standard steel roller	A	7 lb.	.065"	.219"	.020"

ACTUATOR—SIDE STRAIGHT PLUNGER (FIG. H)

4LS1	**$34.60**	**204LS1**	**$34.00**	Inline motion actuation	A	9 lb.	.109"	.250"	.040"

ACTUATOR—SIDE ROLLER PLUNGER (FIG. I)

3LS1	**$39.00**	**203SL1**	**$38.00**	Steel roller	A	9 lb.	.109"	.219"	.040"

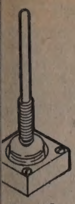
RANDOM MOTION SPRING OR WIRE ACTUATOR—MOMENTARY CONTACT (FIG. J)

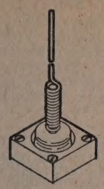
8LS1	**$32.20**	**208LS1**	**$28.00**	4½" flex. cad. plated cable actuator	G	5 oz.	......	......	......
8LS3	**32.20**	**208LS3**	**28.00**	4½" spring/rod actuator, anodized aluminum	G	5 oz.	......	......	......
8LS125	**35.90**	**208LS125**	**31.70**	6½" steel wire; low force, corrosion resistant	G	1 oz.	......	......	......
8LS152	**32.20**	**208LS152**	**28.00**	Stainless steel coilspring	G	5 oz.	......	......	......

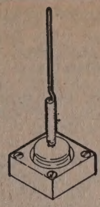
*Plug-in type requires one terminal block (18PA1 for "200LS" switches, List Price **$8.00**). †Electrical rating from chart above.

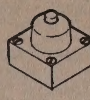
★WRITE OR CALL FOR DISCOUNT INFORMATION ON "LS" SWITCHES

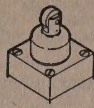
MICRO SWITCH "LS" SWITCHES WITH SPECIAL ACTUATORS

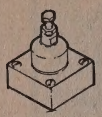

Plastic Rod

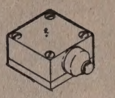

Spring Wire

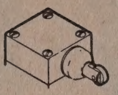

Cat Whisker

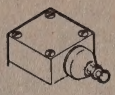

Top Plunger

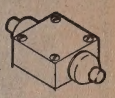

Top Roller


Adj. Top


Side Plunger


Side Roller


Adj. Side


Maintained

WOBBLE ACTUATED SWITCHES

atings and contacts same as rotary switches on preceding page. able (1.5″) and coil spring (2″) types also available.

WITH PLASTIC ROD ACTUATOR

retravel: 1″ max. **Operating Force:** 10 oz. max.

M.S. Number	Circuit	Body Style	Conduit	Indicator Light	List Price*
SJ1A-7A	SPDT	Plug-in	½″	None	$36.00
SJ1E-7A	SPDT*	Plug-in	½″	None	38.00
SJ5A-7A	SPDT†	Plug-in	½″	120 volt	42.00
SJ8A-7A	SPDT†	Plug-in	½″	240 volt	42.00
SJ3K-7A	SPDT	Non-plug-in	½″	None	32.00
SJ2B-7A	DPDT	Plug-in	¾″	None	43.00
SJ6B-7A	DPDT	Plug-in	½″	None	43.00
SJ4L-7A	DPDT	Non-plug-in	¾″	None	38.00
SJ7L-7A	DPDT	Non-plug-in	½″	None	38.00

WITH SPRING WIRE ACTUATOR

retravel: 4″ max. **Operating Force:** 5 oz.

SJ1A-7M	SPDT	Plug-in	½″	None	$35.00
SJ1E-7M	SPDT*	Plug-in	½″	None	37.00
SJ5A-7M	SPDT†	Plug-in	½″	120 volt	41.00
SJ8A-7M	SPDT†	Plug-in	½″	240 volt	41.00
SJ3K-7M	SPDT	Non-plug-in	½″	None	31.00
SJ2B-7M	DPDT	Plug-in	¾″	None	42.00
SJ6B-7M	DPDT	Plug-in	½″	None	42.00
SJ4L-7M	DPDT	Non-plug-in	¾″	None	37.00
SJ7L-7M	DPDT	Non-plug-in	½″	None	37.00

WITH CAT WHISKER ACTUATOR

retravel: 2″ max. **Operating Force:** 5 oz. max.

SK1A-8A	SPDT	Plug-in	½″	None	$33.00
SK1E-8A	SPDT*	Plug-in	½″	None	35.00
SK5A-8A	SPDT†	Plug-in	½″	120 volt	39.00
SK8A-8A	SPDT†	Plug-in	½″	240 volt	39.00
SK3K-8A	SPDT	Non-plug-in	½″	None	29.00
SK2B-8A	DPDT	Plug-in	¾″	None	40.00
SK6B-8A	DPDT	Plug-in	½″	None	40.00
SK4L-8A	DPDT	Non-plug-in	¾″	None	35.00
SK7L-8A	DPDT	Non-plug-in	½″	None	35.00

TOP PLUNGER ACTUATED MOMENTARY CONTACT SWITCHES

ssembled with roller parallel to mounting surface. For roller erpendicular to mounting surface, add suffix **6** to Micro Switch umber. Ratings and contacts same as rotary actuated types. **retravel:** .070″ max. **Differential Travel:** SPDT, .015″ max.; PDT, .020″ max. **Overtravel:** .190″ min. **Oper. Force:** 4 lbs. max.

TOP PLAIN PLUNGER ACTUATOR

perating point, 1.805″ (±.030″). Oiltight seals.

M.S. Number	Circuit	Body Style	Conduit	Indicator Light	List Price*
LSC1A	SPDT	Plug-in	½″	None	$36.00
LSC1E	SPDT*	Plug-in	½″	None	38.00
LSC5A	SPDT†	Plug-in	½″	120 volt	42.00
LSC8A	SPDT†	Plug-in	½″	240 volt	42.00
LSC3K	SPDT	Non-plug-in	½″	None	32.00
LSC2B	DPDT	Plug-in	¾″	None	43.00
LSC6B	DPDT	Plug-in	½″	None	43.00
LSC4L	DPDT	Non-plug-in	¾″	None	38.00
LSC7L	DPDT	Non-plug-in	½″	None	38.00

TOP ROLLER PLUNGER ACTUATOR

perating point, 2.200″ (±.040″). Roller adjusts to 90° angles.

LSD1A	SPDT	Plug-in	½″	None	$40.00
LSD1E	SPDT*	Plug-in	½″	None	42.00
LSD5A	SPDT†	Plug-in	½″	120 volt	46.00
LSD8A	SPDT†	Plug-in	½″	240 volt	46.00
LSD3K	SPDT	Non-plug-in	½″	None	36.00
LSD2B	DPDT	Plug-in	¾″	None	47.00
LSD6B	DPDT	Plug-in	½″	None	47.00
LSD4L	DPDT	Non-plug-in	¾″	None	42.00
LSD7L	DPDT	Non-plug-in	½″	None	42.00

ADJUSTABLE TOP PLUNGER ACTUATOR

perating point adjusts from 2.085–2.335″.

LSV1A	SPDT	Plug-in	½″	None	$38.00
LSV1E	SPDT*	Plug-in	½″	None	40.00
LSV5A	SPDT†	Plug-in	½″	120 volt	44.00
LSV8A	SPDT†	Plug-in	½″	240 volt	44.00
LSV3K	SPDT	Non-plug-in	½″	None	34.00
LSV2B	DPDT	Plug-in	¾″	None	45.00
LSV6B	DPDT	Plug-in	½″	None	45.00
LSV4L	DPDT	Non-plug-in	¾″	None	40.00
LSV7L	DPDT	Non-plug-in	½″	None	40.00

SIDE PLUNGER ACTUATED MOMENTARY CONTACT SWITCHES

Assembled with plunger to front of switch. For plunger to right side, add suffix **3** to Micro Switch Number; for plunger to left side, add suffix **4**; for plunger toward back, add suffix **5**. Ratings and contacts same as rotary actuated switches. **Pretravel:** .100″ max. **Differential:** SPDT, .025″; DPDT, .035″ max. **Overtravel:** .190″ min. **Operating Force:** 6 lbs. max.

SIDE PLAIN PLUNGER

Operating point, 1.300″ (±.030″). Actuating head may be faced in any of four positions, 90° apart. Boot and gasket seals.

M.S. Number	Circuit	Body Style	Conduit	Indicator Light	List Price*
LSE1A	SPDT	Plug-in	½″	None	$38.00
LSE1E	SPDT*	Plug-in	½″	None	40.00
LSE5A	SPDT†	Plug-in	½″	120 volt	44.00
LSE8A	SPDT†	Plug-in	½″	240 volt	44.00
LSE3K	SPDT	Non-plug-in	½″	None	34.00
LSE2B	DPDT	Plug-in	¾″	None	45.00
LSE6B	DPDT	Plug-in	½″	None	45.00
LSE4L	DPDT	Non-plug-in	¾″	None	40.00
LSE7L	DPDT	Non-plug-in	½″	None	40.00

SIDE ROLLER PLUNGER

Operating point, 1.735″ (±.040″). Head may be faced in any of four positions, 90° apart. Roller turns vertical or horizontal.

LSF1A	SPDT	Plug-in	½″	None	$42.00
LSF1E	SPDT*	Plug-in	½″	None	44.00
LSF5A	SPDT†	Plug-in	½″	120 volt	48.00
LSF8A	SPDT†	Plug-in	½″	240 volt	48.00
LSF3K	SPDT	Non-plug-in	½″	None	38.00
LSF2B	DPDT	Plug-in	¾″	None	49.00
LSF6B	DPDT	Plug-in	½″	None	49.00
LSF4L	DPDT	Non-plug-in	¾″	None	44.00
LSF7L	DPDT	Non-plug-in	½″	None	44.00

ADJUSTABLE SIDE PLUNGER

Operating point adjusts from 1.615″ to 1.865″.

LSW1A	SPDT	Plug-in	½″	None	$40.00
LSW1E	SPDT*	Plug-in	½″	None	42.00
LSW5A	SPDT†	Plug-in	½″	120 volt	46.00
LSW8A	SPDT†	Plug-in	½″	240 volt	46.00
LSW3K	SPDT	Non-plug-in	½″	None	36.00
LSW2B	DPDT	Plug-in	¾″	None	47.00
LSW6B	DPDT	Plug-in	½″	None	47.00
LSW4L	DPDT	Non-plug-in	¾″	None	42.00
LSW7L	DPDT	Non-plug-in	½″	None	42.00

MAINTAINED CONTACT SWITCHES WITH SIDE PLAIN PLUNGER

Available with same head options as momentary contact types. **Pretravel:** .170″ max. **Differential:** .090″ max. **Overtravel:** .080″ min. **Oper. Force:** 10 lbs. max. **Oper. Point:** 1.480″ (±.030″).

LSG1A	SPDT	Plug-in	½″	None	$44.00
LSG1E	SPDT*	Plug-in	½″	None	46.00
LSG5A	SPDT†	Plug-in	½″	120 volt	50.00
LSG8A	SPDT†	Plug-in	½″	240 volt	50.00
LSG3K	SPDT	Non-plug-in	½″	None	40.00
LSG2B	DPDT	Plug-in	¾″	None	51.00
LSG6B	DPDT	Plug-in	½″	None	51.00
LSG4L	DPDT	Non-plug-in	¾″	None	46.00
LSG7L	DPDT	Non-plug-in	½″	None	46.00

SPECIAL SIDE ROTARY SWITCHES

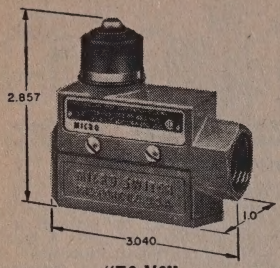
Type LSM Center Neutral: Pole 1 operates counter-clockwise, pole 2 clockwise. SPDT double break contacts in each direction. Ratings same as standard DPDT types. Pretravel, 22° max. Differential, 10° max. Overtravel, 53° min. Operating torque, 4 in.-lbs. max. **Type LSL Sequential:** Pole 1 operates first, pole 2 operates second; either clockwise or counter-clockwise, or both. Two SPDT double break contacts with 8° between operation. Ratings same as standard DPDT types. Pretravel, 1st pole 15° max., 2nd pole 10° max. Differential, 5° for each pole. Overtravel, 48° min. Operating torque, 4 in.-lbs. max.

Body Style	Conduit	Center Neutral		Sequential	
		M.S. No.	List*	M.S. No.	List*
Plug-in	¾″	LSM2D	$42.00	LSL2C	$46.00
Plug-in	½″	LSM6D	42.00	LSL6C	46.00
Non-plug-in	¾″	LSM4N	37.00	LSL4M	41.00
Non-plug-in	½″	LSM7N	37.00	LSL7M	41.00

*Gold plated contacts for low-energy circuits. Electronic duty rated 5 VAC or VDC, .01 amp, recommended minimum load. May also be used at same electrical ratings shown for SPDT type switches listed on preceding page. †Use at voltage indicated for light; upper operating temperature limit for lighted units is 200° F.

★WRITE OR CALL FOR QUANTITY DISCOUNTS

MICRO SWITCH Precision Switches



"E6-V6"

7025
2.160
2.120

"ML"

TYPES "E6" AND "V6" ENCLOSED SWITCHES

Extra convenient switches are interchangeable with older "E" and "V" types, but offer more flexible, utilitarian design. Easier access to terminals permits quick connection. Molded elastomer insulator-seal is bonded to inside of bottom housing. Available with or without actuator seal boots. Rugged cast aluminum housing. Temperature range, −25° to +160° F. **"E6"** indicates side mounting types; **"V6"** indicates bottom flange mounting.

SPDT MOMENTARY CONTACT TYPES

UL rated 15 amps at 125, 250 or 480 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC; ⅛ hp, 125 VAC; ¼ hp, 250 VAC. **Overtravel:** .219″ minimum except -2RQ8 and -2RQ81, .140″; -2RQ62, .838″.

Micro Switch Number BZE6- or BZV6-	Actuator	Oper. Force, Oz.	Max. Pre-travel	List Price*
2RN	Plunger*	9–24	.078″	$ 7.35
2RN7	Plunger*†	9–24	.078″	7.65
2RQ	Plunger	9–13	.015″	5.70
2RN80	Roller plunger*‡	9–24	.078″	10.95
2RQ8	Roller plunger§	9–13	.015″	9.65
2RQ81	Roller plunger#	9–13	.015″	9.65
2RN2	Roller arm*	10–20	.188″	10.95
2RQ2	Roller arm	10–18	.188″	9.65
2RN18*	Flexible rod	7 max.	15°	11.45
2RN28	1-way roller arm*	8–20	.234″	12.65
2RN4	1.5″ dia. button*	10–20	.188″	11.30
2RQ62	Low-force rod	2–5	.718″	9.65

DPDT MOMENTARY CONTACT TYPES

UL rated 10 amps, 125 or 250 VAC; 0.3 amp, 125 VDC; 0.15 amp, 250 VDC. **Overtravel:** -2RN, .125″ min.; -2RN2, .219″.

Micro Switch Number	Actuator	Oper. Force, Oz.	Max. Pre-travel	List Price*
DTE6-2RN	Plunger*	26–59	.110″	$16.35
DTV6-2RN	Plunger*	26–59	.110″	16.35
DTE6-2RN2	Roller arm*	10–30	.266″	19.25
DTV6-2RN2	Roller arm*	10–30	.266″	19.25

SPDT MAINTAINED CONTACT TYPES

Rated 15 amps at 125, 250 or 480 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC; ¼ hp, 125 VAC; ½ hp, 250 VAC. **Overtravel:** .187″ minimum except -RN2X1 and -RQ2X2, .219″ minimum; -RQ8X2, .140″ minimum.

BZE6-RNX1	Plunger*	6–20	.078″	$13.40
BZV6-RNX1	Plunger*	6–20	.078″	13.45
BZE6-RQX2	Plunger	6–9.5	.012″	10.50
BZV6-RQX2	Plunger	6–9.5	.012″	10.50
BZE6-RN2X1	Roller arm*	16 max.	.188″	17.65
BZV6-RN2X1	Roller arm*	16 max.	.188″	17.65
BZE6-RQ2X2	Roller arm	10–18	.188″	13.35
BZV6-RQ2X2	Roller arm	10–18	.188″	13.30
BZE6-RQ8X2	Roller plunger‡	6–9.5	.012″	15.25

*Sealed against moisture and dirt with elastomer boot around actuator. †Side mounting only (prefix BZE6-) with #8 screws. ‡Roller parallel to long axis of switch (side mounting type only, prefix BZE6-). §Roller parallel to long axis of switch. #Cross roller plunger, perpendicular to long axis.

SPECIAL ACTUATORS FOR "ML" AND "ML-E1"

Nylon and steel roller-lever actuators (use nylon roller type only for ML-E1 explosion-proof switches).

	Micro Switch No.			Micro Switch No.		
Lgth.	Nylon Roller	Steel Roller	Lgth.	Nylon Roller	Steel Roller	List Price*
4.5″	6PA109	6PA117	2.5″	6PA105	6PA113	$4.30
4″	6PA108	6PA116	2″	6PA104	6PA112	4.30
3.5″	6PA107	6PA115	1.78″	6PA103	6PA111	4.30
3″	6PA106	6PA114	1.78″*	6PA110	6PA118	4.30

*Reversible.

Micro Switch No. 6PA19 Aluminum Rod Actuator—0.125″ dia. x 5¼″ l. rod can be cut and formed. List Price.....**$3.60***

"ML" HEAVY DUTY LIMIT SWITCHES

Rugged oiltight construction with precision operation; seale against liquid splash; cast aluminum housing. Prefixes 1, 10 indicate regular types; all others have additionally sealed operating heads preventing entry of dirt, dust, abrasives or liquids Adjustable rotary or plunger operation; also available withou actuator. Momentary contacts. SPDT and 2-circuit types no interchangeable. UL and CSA listed.

SPDT TYPES WITH ACTUATOR

Rated: 20 amps, 120, 240, 480 or 600 VAC; ½ amp, 115 VDC ¼ amp, 230 VDC; ¾ hp, 120 VAC; 1½ hp, 240 VAC. **Pilo Duty Rating:** 600 volts AC maximum.

Micro Switch No.	Actuator	Oper. Force Max.	Pre-travel	Over-travel	List Price*
1ML1	Roller lever	2 lbs.	12°	60°	$36.90
51ML1	Roller lever	3 lbs.	12°	60°	43.50
2ML1	Plunger	6 lbs.	.025″	.500″	28.90
5ML1	Roller plunger	6 lbs.	.025″	.500″	37.40
1ML10	Aluminum rod	2.5 oz.	12°	60°	38.80
51ML10	Aluminum rod	5 oz.	12°	60°	43.20
51ML17	Roller lever*	3 lbs.	12°	60°	45.40

*Magnetic blow-out type rated 10 amps, 125 VAC or 125 VDC resistive; ¼ hp, 125 VDC non-polarized; ½ hp, 125 VD polarized. Not UL and CSA listed.

TWO CIRCUIT, DOUBLE BREAK TYPES WITH ACTUATO

Rated: 10 amps, 120, 240, 480 or 600 VAC; 0.8 amp, 115 VDC 0.4 amp, 230 VDC; ½ hp, 120 VAC; 1 hp, 240 VAC. **Pilo Rated:** 600 volts AC maximum.

101ML1	Roller lever	2 lbs.	15°	60°	$40.60
151ML1	Roller lever	3 lbs.	15°	60°	47.20
102ML1	Plunger	6 lbs.	.040″	.500″	32.80
105ML1	Roller plunger	6 lbs.	.040″	.500″	40.40
101ML10	Aluminum rod	4 oz.	15°	60°	41.10
151ML10	Aluminum rod	5 oz.	15°	60°	47.50

DPDT TYPES WITH ACTUATOR

Rated: 10 amps, 125 or 250 VAC; 0.3 amp, 125 VDC; 0.15 amp 250 VDC. 51ML7 has sealed operating head.

1ML7	Roller lever	2 lbs.	18°	55°	$46.80
51ML7	Roller lever	3 lbs.	18°	55°	53.60

LIMIT SWITCHES WITHOUT ACTUATOR

Rotary motion. Electrical ratings same as equivalent actuato types, above. Roller lever actuators listed below.

Micro Switch Number	Type	Oper. Torque	Pre-travel	Over-travel	List Price*
101ML2	2-circuit	3.56 in.-lb.	15°	60°	$36.10
151ML2	2-circuit	5.34 in.-lb.	15°	60°	42.70
1ML2	SPDT	3.56 in.-lb.	12°	60°	32.40
1ML22	SPDT	13 in.-oz.†	12°	60°‡	34.30
51ML2	SPDT	5.34 in.-lb.	12°	60°	39.00
51ML22	SPDT	25 in.-oz.†	12°	60°‡	42.60
1ML72	DPDT	3.56 in.-lb.	18°	....	42.30
51ML72	DPDT	5.34 in.-lb.	18°	55°	49.10
106ML21	2-circ.*	3 in.-lb.	60°	....	37.50

*Maintained contacts; others momentary. †Maximum. ‡Minimum.

TYPE "ML-E1" EXPLOSION-PROOF LIMIT SWITCHES

SPDT contacts. Rugged cast aluminum enclosures. Available with or without actuator.

20-AMP TYPES

UL and CSA listed: 20 amps, 120, 240 or 480 VAC; ½ amp, 115 VDC; ¼ amp, 230 VDC; ½ hp, 120 VAC; 1¼ hp, 240 VAC. **Pilot Duty Rating:** 600 VAC max.

Micro Switch No.	Actuator	Oper. Force	Pre-travel	Over-travel	List Price*
1ML1-E1	Roller lever	2 lbs.	12°	60°	$60.20
51ML1-E1	Roller lever*	3 lbs.	12°	60°	64.30
2ML1-E1	Plunger*	6 lbs.	.025″	.500″	53.00
5ML1-E1	Roller plunger*	6 lbs.	.025″	.500″	56.40
1ML10-E1	Low-force rod	2.5 oz.	12°	60°	54.40
51ML10-E1	Low-force rod*	5 oz.	12°	60°	64.00
1ML2-E1	None	3.56†	12°	60°	55.70
51ML2-E1	None*	3.56†	12°	60°	59.80

10-AMP TYPES

UL and CSA listed: 10 amps, 120, 240 or 480 VAC; 0.8 amp, 115 VDC; 0.4 amp, 230 VDC; ½ hp, 120 VAC; 1 hp, 240 VAC. **Pilot Duty Rating:** 600 VAC max.

101ML1-E1	Roller lever	2 lbs.	15°	60°	$64.00
151ML1-E1	Roller lever*	3 lbs.	15°	60°	67.90
102ML1-E1	Plunger*	6 lbs.	.040″	.500″	57.00
105ML1-E1	Roller plunger*	6 lbs.	.040″	.500″	60.10
101ML10-E1	Low-force rod	4 oz.	15°	60°	65.70
151ML10-E1	Low-force rod*	5 oz.	15°	60°	67.60
101ML2-E1	None	3.56†	15°	60°	59.50
151ML2-E1	None*	5.34†	15°	60°	63.40
106ML21-E1	None*	3†	60°	......	59.50

*Sealed operating head. †Inch-lbs. of operating torque (see listing at left for special actuators).

★**Switches of same product class only may be grouped for quantity discount.**

WRITE OR CALL FOR QUANTITY DISCOUNTS

MICRO SWITCH Precision Switches

TYPE "EX" EXPLOSION-PROOF SWITCHES

esigned for limits, safeties and interlocks in explosive atmo-
here. Compact NEMA housings with ample wiring space.
or Class I Group C and D; Class II, Groups E, F and G atmo-
heres. Mount from top, bottom, back or end. Captive cover
rews; replaceable switching unit. Roller arm actuators adjust-
le through 360°. Clockwise actuation, except as indicated.
vertravel plunger actuators (-Q, -Q800 and -N15) have case-
rdened plunger, withstand steady load of 100 lbs. without
jury. **Cross-roller arm (EX-CR) has roller perpendicular to**
ng axis. Manual actuator (EX-AR50) type has large paddle
r fast, easy operation. **Contacts:** SPDT except EXD series,
PDT. **EX Series UL Rated:** 15 amps, 125, 250 or 480 VAC;
amp, 125 VDC; ¼ amp, 250 VDC; ⅛ hp, 125 VAC; ¼ hp,
0 VAC. **EXA Series UL Rated:** 20 amps, 125, 250 or 480
AC; 10 amps, 125 VAC "L"; ½ amp, 125 VDC; ¼ amp,
0 VDC; 1 hp, 125 VAC; 2 hp, 250 VAC. **EXD Series UL**
ated: 10 amps, 125 or 250 VAC; 0.3 amp, 125 VDC; 0.15 amp,
0 VDC. **EXH Series Rated:** 10 amps induct. and 25 amps
sis., 28 VDC; 1 amp, 125 VAC; U/L, 1 amp, 125 VAC. **Type**
X-N15 Rated: UL, 10 amps, 125, 250 or 480 VAC; ½ amp,
5 VDC; ¼ amp, 250 VDC; includes elastomer plunger boot.
l types include mounting bracket, except as indicated. EXH
ries has hermetically-sealed switching unit.

Micro Switch Number	Actuator	Oper. Force	Maximum		List Price*
			Pre-travel	Over-travel	
X-AR	Roller arm	8–20 oz.	.219″	90°	**$23.50**
X-AR800	Roller arm*	8–20 oz.	.219″	90°	**25.30**
X-AR30	Roller arm†	2.5 lb.	.065″	25°	**23.50**
X-AR16	Roller arm‡	2 oz.	......	......	**25.05**
X-AR20	None	§	.219″	90°	**21.85**
X-CR	Cross-roller	8–20 oz.	.219″	90°	**23.50**
X-AR128	1-way roller	8–20 oz.	.219″	90°	**25.85**
X-AR1613	Rod#	2 oz.	18°	40°•	**27.65**
X-AR50	Manual	2.5 lb.	......	......	**24.85**
X-Q	Plunger	3 lb.	.078″	.188″•	**23.50**
X-Q800	Plunger*	3 lb.	.078″	.188″•	**25.30**
X-N15	Plunger	3 lb.	.078″	.188″•	**24.90**
XA-AR	Roller arm	12–32 oz.	.219″	25°	**23.80**
XA-Q	Plunger	2 lb.	.050″	.125″•	**23.80**
XD-AR	Roller arm	8–24 oz.	.250″	25°	**28.50**
XD-Q	Plunger*	3 lb.	.156″	.141″•	**28.50**
XH-AR3	Roller arm*	8–24 oz.	.219″	25°	**40.40**
XH-AR33	Roller arm*†	2.5 lb.	.065″	25°	**40.40**

isted for UL Class I, Group B (hydrogen) atmospheres.
ounter-clockwise actuation. ‡Clockwise or counter-clockwise;
w-force; no lever return spring or mounting bracket. §31.25
-oz. maximum; see listing of auxiliary actuators below. #Low-
rce rod; no mounting bracket included. •Minimum.

AUXILIARY ACTUATORS FOR "EX" SWITCHES

r type EX-AR20 switch, listed above.

icro Sw. No.	Type	Material	List*
6PA5-EX	Roller arm	Bronze	**$2.30**
6PA127-EX	Roller arm	Nylon	**2.30**
6PA130-EX	One-way roller arm	Bronze	**5.25**
6PA131-EX	Cross-roller arm	Bronze	**7.25**
6PA136-EX	Rod	Aluminum	**2.00**
6PA138-EX	Adjust. roller arm	Bronze	**5.05**
6PA142-EX	CCW 6PA130-EX	Bronze	**5.25**

TYPE "EXMN" EXPLOSION-PROOF SWITCHES

milar to "EX" series above, but 2-circuit double-break contacts.
racket included. **Actuator:** EXMN-AR, clockwise roller arm;
XMN-AR30, counter-clockwise roller arm; EXMN-Q, straight
unger. Listed for UL Class I, Group B (hydrogen) atmospheres,
ated: UL and CSA listed: 10 amp, 125, 250 or 480 VAC; 0.8 amp.
5 VDC; 0.4 amp, 250 VDC; ½ hp, 125 VAC, 1 hp, 250 VDC.

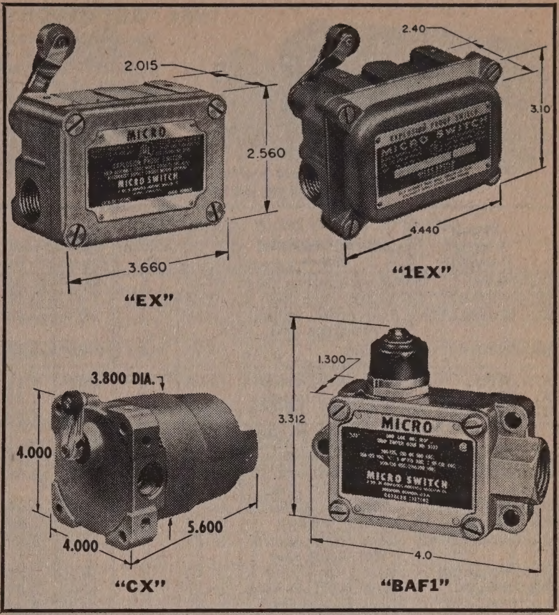
Micro Switch No.	Oper. Force	Pre-travel	Over-travel	List Price*
EXMN-AR	6–20 oz.	.250″	90° max.	**$26.60**
EXMN-AR30	2.5 lb. max.	.085″	25° max.	**26.60**
EXMN-Q	2 lb. max.	.078″	.141″ min.	**26.60**

TYPE "CX" EXPLOSION-PROOF SWITCHES

ill withstand pressure of internal explosion, cool exploded
ses. For outdoor use in hazardous atmospheres. Rugged cast
uminum housings with two ¾″ diameter conduit openings.
onsist of two switching units. **Type A:** Both switching units
erate either side of center. **Type B:** One switching unit operates
her side of center. Non-sparking roller arm actuators; mo-
entary action. Mount from either of four sides, or front. **2CX**
atings: SPDT contacts, U/L rated, 20 amps, 125, 250 or
0 VAC; 10 amps, 125 VAC "L"; ½ amp, 125 VDC; ¼ amp,
0 VDC; 1 hp, 125 VAC; 2 hp, 250 VAC. **4CX Ratings:** DPDT
ntacts, UL rated 10 amps, 125 or 250 VAC; 0.3 amp, 125
DC; 0.15 amp, 250 VDC. **Actuator:** Adjustable (1″ to 3½″)
standard roller arm; rotates and locks in any position through
0°. No actuating arm types available.

Micro witch No.	Type	Actuator	Maximum		Min. Over-travel	List Price*
			Oper. Force	Pre-travel		
CX6	A*	Adjustable roller arm	10 lbs.	25°	35°	**$72.85**
CX3	B		7 lbs.	12°	45°	**72.85**
CX3	B		7 lbs.	20°	35°	**87.45**
CX6	A		10 lbs.	30°	30°	**86.90**
CX1	B	Standard roller arm	7 lbs.	12°	45°	**71.30**
CX5	A		10 lbs.	25°	35°	**71.30**
CX1	B		7 lbs.	20°	35°	**85.90**
CX5	A		10 lbs.	30°	30°	**85.90**

orrosion-resistant bearings.



"DOUBLE-DUTY" EXPLOSION-PROOF SWITCHES

Conduit opening at both ends of switch housing permits through wiring; saves on installation problems. **Actuator:** Roller arm except 4EX5, roller rod; 22EX22, side plunger. **1EX1 (SPDT) Rating:** UL, 15 amps, 125, 250 or 480 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC; ⅛ hp, 125 VAC; ¼ hp, 250 VAC. **2EX1** (SPDT) and **22EX22** (Two SPNC circuits) **Rating:** UL, 20 amps, 125, 250 or 480 VAC; 10 amps, 125 VAC "L"; ½ amp, 125 VDC; ¼ amp, 250 VDC; 1 hp, 125 VAC; 2 hp, 250 VAC. **4EX1** and **4EX5** (DPDT) **Rating:** UL, 10 amps, 125 or 250 VAC; 0.3 amp, 125 VDC; 0.15 amp, 250 VDC.

Micro Switch No.	Oper. Force	Max. Pre-travel	Over-travel	Conduit 14NPT Dia.	List Price*
1EX1	8–20 oz.	.219″	90° max.	½″	**$22.00**
2EX1	12–32 oz.	.219″	25° max.	½″	**22.20**
4EX1	8–24 oz.	.250″	25° max.	¾″	**26.25**
4EX5	8–24 oz.	.250″	25° max.	¾″	**29.00**
22EX22	1.75 lb.	.140″	.125″ min.	½″	**22.45**

TYPE "F" HIGH CAPACITY, ENCLOSED SWITCHES

For applications requiring a small switch that will handle a large electrical load. Built-in overtravel mechanism insures repeatability. Basic switch sealed against moisture and dust by gasket between cover plate and housing. Actuators are sealed with elastomer boot (except roller plunger types). Aluminum housing with conduit type internally tapped ½″ hub. Mounts using three .265″ holes. Roller arm actuator (-2RN2) adjustable 360° horizontally, 225° vertically. One-way roller arm (-2RN28) adjustable 360° horizontally, 180° vertically. Flexible rod (-2RN18) operates from any direction except pull. Momentary contacts. Add Suffix **RH** for right-hand (location of actuator) or, **LH** for left-hand mounting.

SPDT 20-AMP TYPES

UL rated 20 amps, 125, 250 or 480 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC; 1 hp, 125 VAC; 2 hp, 250 VAC. Lamp load, 10 amps, 125 VAC.

Micro Switch Number*	Actuator	Max. Oper. Force	Max. Pre-travel	Min. Over-travel	List Price*
BAF1-2RN	Plunger	2½ lbs.	.094″	.219″	**$11.50**
BAF1-2RN2	Roller arm	2 lbs.	.219″	.250″	**14.65**
BAF1-2RQ9	Roller plunger‡	2½ lbs.	.094″	.156″	**14.70**
BAF1-2RQN8	Roller plunger†	8 lbs.	.125″	.187″	**19.60**
BAF1-2RN28	1-way roller arm	2 lbs.	.219″	.250″	**16.35**
BAF1-2RN18	Flexible rod	....	15°	......	**16.25**
BAF1-2RN4	1½″ button	2 lbs.	......	......	**15.70**
BAF1-3RNX1	Reset plunger§	1.75 lbs.	.094″	.219″	**16.20**

DPDT 10-AMP TYPES

UL rated 10 amps at 125 or 250 VAC; 0.3 amp, 125 VDC; 0.15 amp, 250 VDC.

DTF2-2RN	Plunger	2½ lbs.	.141″	.156″	**$17.95**
DTF2-2RN2	Roller arm	2½ lbs.	.312″	.219″	**20.70**

*Add suffix RH or LH, as indicated above. †O-ring actuator seal. ‡Plunger adjustable 360° horizontally. §Maintained contact switch with elastomer boots on both plungers (right-hand actuator position only).

★WRITE OR CALL FOR QUANTITY DISCOUNTS

MICRO SWITCH Precision Switches

TYPE "BZ" PRECISION 15-AMP SWITCHES

Basic Switch

Phenolic enclosed, general-purpose switches combine long life with accurate repeatability SPDT contacts may be wired either normally-open or normally-closed. Momentar contacts. **Temperature Range:** −65° F to +180° F except as indicated. **UL and CS Listed:** 15 amps at 125, 250 or 480 VAC; ⅛ hp, 125 VAC; ¼ hp, 250 VAC; ½ amp, 12 VDC; ⅛ amp, 250 VDC. High temperature types (to +400° F) are rated 5 amps, 12 250 or 480 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC. **Terminals:** A2 type, botto facing 6-32NC x .218″ screw with cup washers. **Mechanical Life:** 20 million operations **Mounting:** Two .140″ dia. holes on 1″ centers for fixed position mounting. **Size:** 1.940″ w. .687″ d. x .950″ h., less terminals. Types also available for applications requiring gol alloy contacts.

PIN PLUNGER ACTUATOR

Micro Switch Number	Recommended For—	Oper. Force, Oz.	Min. Rel. Force, Oz.	Min. Over-travel	List Price
BZ-2R-A2	Most applications	9–13	4	.005″	$2.05
BZ-2R24-A2	Temp. to +250° F	9–13	4	.005″	2.25
BZ-2R5551-A2	Dustproof, splash resistant seal	9–15	4	.005″	3.00
BZ-2R55-A2	Sealed construction	9–15	4	.005″	4.15
BZ-2RT04	Meet MIL-S-8805	9–13	6	.005″	2.55
BZ-2R05-A2	Varying humidity	9–13	4	.005″	2.35
BZ-2R244-A2	Temp. to +400° F	9–13	4	.005″	2.55

OVERTRAVEL PLUNGER ACTUATOR

BZ-2RD-A2	For 20° rise cams	9–13	4	.060″	$2.55
BZ-2RDS5551-A2	Dustproof, splash resistant seal	13–19	4	.060″	3.50
BZ-2RD24-A2	Temp. to +250° F	9–13	4	.060″	2.65
BZ-2RS-A2	In-line motion	9–13	4	.060″	2.55
BZ-2RS5551-A2	Dustproof, splash resistant seal	9–15	4	.060″	3.50
BZ-2RS24-A2	Temp. to +250° F	9–13	4	.060″	2.70
BZ-2RST04	Meet MIL-S-8805	9–13	6	.060″	2.80
BZ-2RQ-A2	In-line, slow 30° rise cams	9–13	4	.219″	3.65
BZ-2RQ24-A2	Temp. to +250° F	9–13	4	.219″	3.75
BZ-2RQ1-A2	As BZ-2RQ-A2 w/bshg. mount	9–13	4	.219″	4.30
BZ-2RQ1T04	Meet MIL-S-8805	9–13	6	.219″	4.30
BZ-2RQ124-A2	Temp. to +250° F	9–13	4	.219″	4.50
BZ-2RQ18-A2	Roller plunger, rapid 30° rise cams, slide operation	9–13	4	.140″	7.40
BZ-2RQ1824-A2	Temp. to +250° F	9–13	4	.140″	7.50
BZ-2RQ181-A2	Roller plunger	9–13	4	.140″	7.40

STRAIGHT LEVER ACTUATOR

BZ-2RW80-A2	2.5″ lever	2.5	0.50	.219″	$2.50
BZ-2RW84-A2	Lower force	1	0.125	.219″	2.50
BZ-2RW-A2	Repeatability	1–2.5	0.50	.188″	2.50
BZ-2RW899-A2	Adjustable from .670″ to .880″	2.5	0.50	.125″	3.15
BZ-2RW863-A2	6″ lever	1	....	.578″	2.70
BZ-2RW805551-A2	Dustproof, splash resistant seal	2.5	0.50	.219″	3.45

STRAIGHT LEVER ACTUATOR (CONT'D)

Micro Switch Number	Recommended For—	Oper. Force, Oz.	Min. Rel. Force, Oz.	Min. Over-travel	List Price
BZ-2RWT04	Meet MIL-S-8805	1–3.25	0.75	.172″	$2.75
BZ-2RW824-A2	Temp. to +250° F	2.5	0.50	.219″	2.70
BZ-2RW8244-A2	Temp. to +400° F	2.5	0.50	.219″	3.15

ROLLER LEVER ACTUATOR

BZ-2RW822-A2	1.05″ roller lever	6	1.5	.094″	$3.15
BZ-2RW82224-A2	Temp. to +250° F	6	1.5	.094″	3.35
BZ-2RW82299-A2	Adjustable from 1.172″ to 1.203″	6	1.5	.040″	3.75
BZ-2RW80147-A2	1.05″ roller lever	6	1.5	.094″	2.60
BZ-2RW82-A2	1.90″ roller lever	3.5	0.75	.156″	3.15
BZ-2RW825551-A2	Dustproof, splash resistant seal	3.5	0.75	.156″	4.10
BZ-2RW8224-A2	Temp. to +250° F	3.5	0.75	.156″	3.25
BZ-2RW8299-A2	Adjustable from 1.150″ to 1.240″	3.5	0.75	.085″	3.75
BZ-2RW80196-A2	1.90″ roller lever	3.5	0.75	.156″	2.60
BZ-2RW826-A2	One-way roller, .37″ dia. x .15″ w.	6	1.5	.094″	3.75
BZ-2RW825-A2	One-way roller, .19″ dia. x .19″ w.	8	1.5	.060″	3.75

FLEXIBLE LEAF ACTUATOR*

BZ-2RL-A2	Force & stability	5	0.50	.060″	$2.40
BZ-2RL5551-A2	Dustproof, splash resistant seal	7	0.50	.060″	3.35
BZ-2RLT04	Meet MIL-S-8805	5	0.50	.060″	2.50
BZ-2RL24-A2	Temp. to +250° F	5	0.50	.060″	2.50
BZ-2RL244-A2	Temp. to +400° F	5	0.50	.060″	2.85

FLEXIBLE LEAF WITH ROLLER ACTUATOR*

BZ-2RL2-A2	Force & stability	5	0.50	.060″	$3.00
BZ-2RL25551-A2	Dustproof, splash resistant seal	7	0.50	.060″	3.90
BZ-2RL2T04	Meet MIL-S-8805	3.75–5	0.50	.060″	3.25
BZ-2RL224-A2	Temp. to +250° F	5	0.50	.060″	3.10
BZ-2RL2244-A2	Temp. to +400° F	5	0.50	.060″	3.45

*Over-travel values given are maximum.

TYPE "BA" PRECISION 20-AMP SWITCHES

Same size and appearance as "BZ' switches above, but higher current capacity. **UL Electrical Rating:** 20 amps at 125, 250 or 480 VAC; 10 amps, 125 VAC "L" (AC tungsten lamp load); ¼ amp, 250 VDC; ½ amp, 125 VDC; 1 hp, 125 VAC, 2 hp, 250 VDC. **Temperature Range:** −65° F to +180° F. **Contacts** SPDT, momentary. **Mechanical Life:** 10 million operations. **Terminals:** A2 type, bottom facing 6-32NC x .218″ screw with cu washers.

PIN PLUNGER ACTUATOR

Micro Switch Number	Recommended For—	Oper. Force, Oz.	Min. Rel. Force, Oz.	Min. Over-travel	List Price
BA-2R24-A2	Temp. to +250° F	14–22	10	.010″	$2.25
BA-2R-A2	To 20 A load	14–22	10	.010″	2.05

OVERTRAVEL PLUNGER ACTUATOR

BA-2RB-A2	To 20 A load	14–22	10	.094″	$2.55
BA-2RQ1-A2	To 20 A load	14–22	10	.219″	4.30

STRAIGHT LEVER ACTUATOR

BA-2RV-A2	To 20 A load	2.5	0.50	.078″	$2.60

ROLLER LEVER ACTUATOR

Micro Switch Number	Recommended For—	Oper. Force, Oz.	Min. Rel. Force, Oz.	Min. Over-travel	List Price
BA-2RV22-A2	To 20 A load	6	1.5	.030″	$3.25
BA-2RV2-A2	To 20 A load	3.5	0.50	.060″	3.25

FLEXIBLE LEAF ACTUATOR*

BA-2RL-A2	To 20 A load	9	1	.062″	$2.40

FLEXIBLE LEAF WITH ROLLER ACTUATOR*

BA-2RL2-A2	To 20 A load	9	1	.060″	$3.00

TYPE "BM" 22-AMP AND "BE" 25-AMP PRECISION SWITCHES

Identical to "BZ" switches above in size and appearance, with special contact materials for higher electrical capacity. Type "BE" is ideal for motors, solenoids and tungsten lamps. **UL Electrical Ratings:** Type "BM" switches rated 22 amps, 125, 250 or 480 VAC; ¼ hp, 125 VAC; ½ hp, 250 VAC. Type "BE" switches rated 25 amps, 125, 250 or 480 VAC; 1 hp, 125 VAC 2 hp, 250 VAC; pilot duty, 750 VA, 125 or 250 VAC. **Temperatur Range:** −65° F to +180° F. **Mechanical Life:** "BM", 20 millio operations; "BE", 10 million operations. **Terminals:** A2 type bottom facing 6-32NC x .218″ screw with cup washers.

PIN PLUNGER ACTUATOR

BM-1R-A2	Up to 22 A load	7–10	4	.005″	$2.20
BE-2R-A4†	Up to 25 A load	14–22	10	.010″	2.35

OVERTRAVEL PLUNGER ACTUATOR

BE-2RB-A4†	Up to 25 A load	14–22	10	.094″	$2.85
BM-1RD-A2	Up to 22 A load	7–10	4	.060″	2.70
BM-1RS-A2	Up to 22 A load	7–10	4	.060″	2.70
BM-1RQ1-A2	Up to 22 A load	7–10	4	.219″	4.45
BM-1RQ18-A2	Up to 22 A load	7–10	4	.140″	7.60

STRAIGHT LEVER ACTUATOR

BM-1RW84-A2	Up to 22 A load	1	0.125	.219″	$2.65
BE-2RV-A4†	Up to 25 A load	2.5	0.50	.078″	3.00

ROLLER LEVER ACTUATOR

BM-1RW822-A2	Up to 22 A load	6	1.5	.094″	$3.30
BE-2RV22-A4†	Up to 25 A load	6	1.5	.030″	3.55
BM-1RW82-A2	Up to 22 A load	3.5	0.75	.156″	3.30
BE-2RV2-A4†	Up to 25 A load	3.5	0.50	.060″	3.55

FLEXIBLE LEAF ACTUATOR*

BM-1RL-A2	Up to 22 A load	5	0.50	.060″	$3.15
BE-2RL-A4†	Up to 25 A load	9	1	.062″	2.85

FLEXIBLE LEAF WITH ROLLER ACTUATOR*

BM-1RL2-A2	Up to 22 A load	5	0.50	.060″	$2.55
BE-2RL2-A4†	Up to 25 A load	9	1	.060″	3.45

*Overtravel values given are maximum. †Terminals same as A2 except #8 screws.

WRITE OR CALL FOR QUANTITY DISCOUNTS

MICRO SWITCH Precision Switches

TYPE "1SX" SUBMINIATURE BASIC SWITCHES

nallest SPDT snap-action switches from Micro Switch. Withand temperatures from −65° F to +250° F. Silver contacts nless otherwise listed. **Release Force:** 1 oz. min. **Pretravel:** .020" ax. **Overtravel:** .004" min. **Operating Position:** .320" ±.015". **lounting:** Accept pins or screws of .087" max. dia. on .188" enters. T and T2 terminals for wrap around soldering of lead ires. UL and CSA listed. **Size:** .500" w. x .200" d. x .350" h. verall. less terminals. Write or phone for information covering ype 1SX switches with integral lever and auxiliary actuators.

Ref.	Electrical Data
A	5 amps res., 3 amps ind., sea level, 4 amps res., 2 amps ind., 50,000 feet, 28 VDC; 5 amps res. or ind., 115 VAC, 60 Hz. UL and CSA Listed: 5 amps, 250 VAC.
B	7 amps res., 4 amps ind., sea level, 7 amps res., 2.5 amps ind., 50,000 ft., 28 VDC. UL, CSA Listed: 7 amps, 250 VAC.
C	3.5 amps res., 2 amps ind., sea level, 3.5 amps res., 1.5 amps ind., 50,000 ft., 28 VDC. UL Listed: 7 amps, 250 VAC.
D	1 amp res., ½ amp ind., 28 VDC.
E	3 amps res., 2 amps ind., 28 VDC. UL Listed: 3 amps, 250 VAC.
F	7 amps res., 4 amps ind., 2.5 amps lamp load, sea level, 4 amps res., 2.5 amps ind., 2.5 amps lamp load, 50,000 ft., 28 VDC. 7 amps res., 7 amps ind., 2 amps lamp load, 115 VAC, 60 Hz, sea level.
G	1 amp res., 0.5 amp ind., sea level and 50,000 ft., 28 VDC. 1.5 amps res., 1 amp ind., sea level, 115 VAC, 60 Hz.
H	.010 amp res. and ind., sea level, 28 VDC.

STRAIGHT PLUNGER ACTUATOR

Micro Switch Number	Recommended For—	*	Max. Oper. Force	Max. Diff. Travel	List Price
1SX21-T	Most applications	A	5 oz.	.002"	$2.10
3SX21-T	Applications requiring gold contacts	D	5 oz.	.003"	2.85
7SX21-T	Varying humidity	A	5 oz.	.003"	2.15
1SX22-T	For sealed enclosures	A	5 oz.	.003"	2.15
SX1-T	Up to 7 A load handling	B	5 oz.	.005"	2.35
SX1-T	Lower force	B	3 oz.	.005"	2.90
SX12-T	Reduced diff. travel	C	5 oz.	.002"	3.25
1SX1-T	Lowest diff. travel‡	E	5 oz.	.001"	2.35
2SX3-T	Lowest diff. travel§	H	5 oz.	.001"	3.20
SX48-T	0.010 overtravel	B	5 oz.	.005"	2.75
1SX1-T	Varying humidity	B	5 oz.	.005"	2.95
SX1-T	Applications requiring gold contacts	D	5 oz.	.005"	3.35
1SX39-T	Meet MIL-S-8805	F	5 oz.	.005"	2.45
1SX39-T2	+180° F max. use	F	5 oz.	.005"	2.60
3SX39-T	MIL-S-8805 gold con-	G	5 oz.	.005"	3.65
3SX39-T2	tacts, +180° F max.	G	5 oz.	.005"	3.80
SX1-T	Temp. to +400° F	†	5 oz.	.005"	2.60
2SX2-T	Best reliability§	H	5 oz.	.003"	3.00
2SX1-T	Higher current rating§	D	5 oz.	.003"	3.65

Electrical data reference. †Electrical data on request. ‡0.75 lease force. §With bifurcated gold contacts.

TYPE "SM" SUBMINIATURE SWITCHES

M series are slightly larger than the 1SX switches. SPDT cir-uitry; contacts are silver except as noted. **Operating Temp. ange:** −100° F to +180° F. **Mechanical Life:** 10,000,000 cycles, 5% survival for 11SM series. **Operating Force:** 3–5 oz. except s noted. **Release Force:** 1 oz. min. except 11SM701-T, 14 grams. ower load switching capability to 11 amps, VAC. Motor load andling capacity to ¼ hp, VAC. T terminals for wrap around oldering of lead wires; others available. Series 21SM284 meet IIL-S-8805 requirements. UL and CSA listed. **Mounting:** Accept ins or screws of .087" max. dia. Write or phone for information overing SM switches with integral leaf and aux actuators.

Ref.	Electrical Data
J	5 amps res., 3 amps ind., sea level; 5 amps res., 2.5 amps ind., 50,000 ft., 28 VDC. UL Listed, 5 amps, 250 VAC.
K	UL Listed: 5 amps, 125 or 250 VAC.
M	UL Listed: 11 amps and ¼ hp, 125 or 250 VAC.
N	1 amp res., 0.5 amp ind., 30 VDC. UL Listed: 1 amp, 125 VAC.
P	1 amp res., 0.5 amp ind., 30 VDC. UL Listed: 1 amp, 125 VAC.
R	5 amps res., 3 amps ind., 2.4 amps lamp load, sea level, 5 amps res., 2.5 amps ind., 2.4 amps lamp load, 50,000 ft., 28 VDC. 5 amps res., 5 amps ind., 1.5 amps lamp load, 115 VAC, 60 Hz, sea level.
S	UL Listed: 4 amps, 250 VAC.

PIN PLUNGER ACTUATORS

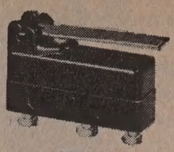
ize: .781" w. x .250" d. x .565" h., overall.

Micro Switch Number	Recommended For—	*	Max. Pre-travel	Min. Over-travel	List Price
1SM1-T	Most applications	J	.020"	.005"	$1.25
1SM3-T	Temp. to +250° F	J	.020"	.005"	1.25
1SM244-T	Temp. to +400° F	†	.020"	.005"	1.65
2SM1-T	Varying humidity	J	.020"	.005"	1.65
1SM401-T	Less differential travel‡	K	.020"	.005"	2.50
1SM701-T	Lower force§	S	.020"	.005"	1.25
1SM1-T	Up to 11 amps ¼ hp AC load handling	M	.030"	.005"	1.45
1SM23-T	Gold contacts	N	.020"	.005"	2.35
2SM4-T	Bifurcated gold contacts	P	.020"	.003"	3.85
11SM1	Sealed plunger#	. . .	.020"	.005"	2.25

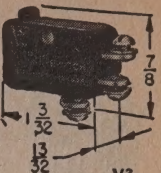
Electrical data reference. †Electrical data on request. Max. perating Force: ‡3.5 oz.; §56 grams; #3–7.5 oz.

SX

SM



311SM



V3

PIN PLUNGER ACTUATORS (CONT'D)

Micro Switch Number	Recommended For—	*	Max. Pre-travel	Min. Over-travel	List Price
51SM1-T	Center plunger position‡	J	.030"	.010"	$1.50
21SM284	Meet MIL-S-8805, solder terminals	R	.030"	.005"	1.55
21SM284-T2	Meet MIL-S-8805	R	.030"	.005"	1.55

*Electrical data reference. †Max. operating force, 2–5 oz.

INTEGRAL LEVER ACTUATORS

Electrical Data: 311SM1-T thru 311SM7-T, reference J; balance, reference S. **Size:** .781" w. x .250" d. x .586" h., overall.

Micro Switch No.	*	Force, Grams Max. Oper.	Force, Grams Min. Rel.	Max. Pre-travel	Min. Over-travel	Actu-ator Lgth.	List Price
311SM1-T	A	40	7	.085"	.011"	.285"	$1.35
311SM2-T	A	30	5	.120"	.015"	.565"	1.35
311SM3-T	A	15	2	.310"	.034"	1.765"	1.35
311SM4-T	B	40	7	.085"	.011"	.251"	1.45
311SM5-T	B	30	5	.120"	.015"	.535"	1.45
311SM6-T	C	40	7	.085"	.011"	.251"	1.60
311SM7-T	C	30	5	.120"	.015"	.535"	1.60
311SM701-T	A	16	3	.085"	.011"	.285"	1.35
311SM702-T	A	12	2	.120"	.015"	.565"	1.35
311SM703-T	A	6	1	.310"	.034"	1.765"	1.35
311SM704-T	B	16	3	.085"	.011"	.251"	1.45
311SM705-T	B	12	2	.120"	.015"	.535"	1.45
311SM706-T	C	16	3	.085"	.011"	.251"	1.60

*Actuator: A, lever; B, simulated roller lever; C, roller lever.

TYPE "V3" MINIATURE BASIC SWITCHES

SPDT circuitry; silver contacts unless otherwise noted. Power load switching capability up to 15 amps, motor handling capacity of ⅓ hp. Long mechanical life of 10,000,000 cycles, 95% survival for V3-100 series. **Pretravel Time:** .047" max. **Overtravel Time:** .040", min., except V3-1101-D8, V3-2101-D8, V3-3001-D8, .050" min. UL and CSA Listed. Solder terminals except as noted; other types available. **Size:** 1.094" w. x .400" d. x .625" h., less terminals. Write or phone for information covering "V3" switch with straight lever; roller lever, simulated roller and aux actuators.

Ref.	Electrical Data
T	10 amps res., 6 amps ind., 6 amps motor load, 3.6 amps lamp load, 30 VDC. UL and CSA Listed: 10 amps and ⅓ hp, 125 or 250 VAC, ½ amp, 125 VDC; ¼ amp, 250 VDC; 4 amps, 125 VAC "L" lamp load.
U	10 amps res., 10 amps ind., sea level, 6 amps ind., 50,000 ft., 6 amps motor load, 30 VDC. UL and CSA Listed: 15 amps and ⅓ hp, 125 or 250 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC; 5 amps, 120 VAC "L" lamp load.
V	UL and CSA Listed: 10 amps and ¼ hp, 125 or 250 VAC; ½ amp, 125 VDC; ¼ amp, 250 VDC. 3 amps, 125 VAC "L" lamp load.
W	10 amps, 250 VAC or 28 VDC; ½ amp, 125 VDC; ¼ amp, 250 VDC.
X	UL Listed: 1 amp, 125 VAC.

PLUNGER ACTUATORS

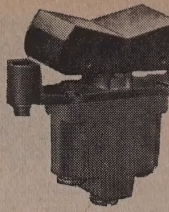
Micro Switch Number	Recommended For—	*	Max. Oper. Force	Min. Release Force	List Price
V3-101-D8	Most applications	T	8 oz.	2 oz.	$ 0.85
V3-101	General use, screw terminals	T	8 oz.	2 oz.	1.15
V3-1101-D8	Added overtravel	T	75 gms	10 gms	.85
V3-2101-D8	Lowest force, added overtravel	V	50 gms	5 gms	.90
V3-3001-D8	Lower force, up to 15 amps load handling	U	135 gms	15 gms	1.00
V3-1-D8	Up to 15 amps load handling	U	6–14 oz.	4 oz.	.85
V3-1	Up to 15 amps load hndlg., screw term.	U	6–14 oz.	4 oz.	1.15
V3-154-D8	Less diff. travel	T	6 oz.	1 oz.	.95
V3-343-D8	Gold alloy contacts	X	8 oz.	2 oz.	1.25
V3-1001	MIL-S-8805 application requirements	U	6–14 oz.	4 oz.	1.55
V3-1002†		U	6–14 oz.	4 oz.	1.45
V3-1003‡		U	6–14 oz.	4 oz.	1.45
V3-129§	Temp. to +302° F	T	8 oz.	2 oz.	1.35
V3-245§	Temp. to +400° F	W	10–25 oz.	6 oz.	1.75
V3-1301§	Temp. to +600° F	W	6–14 oz.	4 oz.	37.25

*Electrical data reference. †SPNC. ‡SPNO. §Actuators available on request.

WRITE OR CALL FOR QUANTITY DISCOUNTS

MICRO SWITCH Precision Switches

TL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TW

SERIES TL PRECISION TOGGLE SWITCHES

Versatile toggle switches feature greater over-surface creepage and clearance distance; double silicon sealing (between cover and case as well as between bushing and toggle lever); integral terminals for stronger wiring connections; step construction for more space between terminals to reduce the possibility of shorting. Single hole bushing mounted. Meet MIL-S-3950 (Immersion) requirements. **Electrical Rating:** (†) Shown in rating table below. **Operating Temperature:** −85° to +160° F. **Contacts:** Silver cadmium oxide. **Toggle:** Standard; write for information and prices on pull-to-unlock types that prevent accidental toggle movement.

2-POSITION TOGGLE SWITCHES

No. of Poles	Micro Switch No.	Military Number MS-	Rating †	Circuit with Toggle At: One Side	Circuit with Toggle At: Other Side	List Price*
1	1TL1-2	24523-22	1	Off	On	$ 4.40
	1TL1-4	24523-29	2	Off*	On	4.40
	1TL1-6	24523-30	2	On*	Off	4.40
	1TL1-3	24523-23	1	On	On	4.40
	1TL1-8	24523-26	2	On*	On	4.40
2	2TL1-2	24524-22	3	Off	On	7.20
	2TL1-4	24524-29	4	Off*	On	7.20
	2TL1-6	24524-30	4	On*	Off	7.20
	2TL1-3	24524-23	3	On	On	7.20
	2TL1-8	24524-26	4	On*	On	7.20
4	4TL1-2	24525-22	5	Off	On	11.45
	4TL1-4	24525-29	6	Off*	On	11.45
	4TL1-6	24525-30	6	On*	Off	11.45
	4TL1-3	24525-23	5	On	On	11.45
	4TL1-8	24525-26	6	On*	On	11.45

3-POSITION TOGGLE SWITCHES

No. of Poles	Micro Switch No.	Military Number MS-	Rating †	Circuit with Toggle At‡: One Side	Circuit with Toggle At‡: Center	Circuit with Toggle At‡: Other Side	List Price*
1	1TL1-1	24523-21	1	On	Off	On	$ 4.40
	1TL1-5	24523-31	2	On*	Off	On	4.40
	1TL1-7	24523-27	2	On*	Off	On*	4.40
	1TL1-21	24523-24	1	None	Off	On	5.10
	1TL1-41	24523-25	2	None	Off*	On	5.10
	1TL1-31	24523-33	1	None	On	On	5.10
	1TL1-51	24523-32	2	None	On	On*	5.10
	1TL1-61	24523-28	2	On*	Off	None	5.10
2	2TL1-1	24524-21	3	On	Off	On	7.20
	2TL1-5	24524-31	4	On*	Off	On	7.20
	2TL1-7	24524-27	4	On*	Off	On*	7.20
	2TL1-21	24524-24	3	None	Off	On	7.20
	2TL1-41	24524-25	4	None	Off*	On	7.20
	2TL1-31	24524-33	3	None	On	On	7.20
	2TL1-51	24524-32	4	None	On	On*	7.20
	2TL1-61	24524-28	4	On*	Off	None	7.20
	2TL1-10	27407-4	3	On	On	On	7.20
	2TL1-50	27407-5	4	On*	On	On	7.20
	2TL1-70	27407-6	4	On*	On	On*	7.20
4	4TL1-1	24525-21	5	On	Off	On	11.45
	4TL1-5	24525-31	6	On*	Off	On	11.45
	4TL1-7	24525-27	6	On*	Off	On*	11.45
	4TL1-21	24525-24	5	None	Off	On	11.45
	4TL1-31	24525-33	5	None	On	On	11.45
	4TL1-51	24525-32	6	None	On	On*	11.45
	4TL1-61	24525-28	6	On	Off	None	11.45
	4TL1-10	....	5	On	On§	On	11.45
	4TL1-50	27409-2	6	On*	On	On	11.45
	4TL1-70	....	6	On*	On§	On*	11.45
	4TL1-12	27406-1	5	On	On	On	11.45
	4TL1-72	27406-3	6	On*	On	On*	11.45

*Momentary positions; all others are maintained positions. †See rating chart below. ‡"None" indicates toggle lever is blocked from these positions, leaving only two usable positions. §Only two circuits are completed in this position; all other types complete 1 circuit per pole in "on" position.

SERIES TL AND TP ELECTRICAL RATINGS†

All ratings in amperes.

Code †	28 Volts DC: Ind.	28 Volts DC: Res.	28 Volts DC: Lamp	115 VDC Res.	250 VDC Res.	115 VAC, 60 and 400 Hz: Ind.	115 VAC, 60 and 400 Hz: Res.	115 VAC, 60 and 400 Hz: Lamp	230 VAC Res.
1	15	20	5	0.75	0.5	10	15	3	6
2	10	15	4	0.75	0.5	7	15	2	6
3	15	20	7	0.75	0.5	15	15	4	6
4	10	18	5	0.75	0.5	8	11	2	6
5	12	20	5	0.75	0.5	15	15	4	6
6	10	18	4	0.75	0.5	8	11	2	6

★WRITE OR CALL FOR QUANTITY DISCOUNTS

SERIES TP ROCKER-ACTUATED SWITCHES

Precision switches combine the advantages of toggle switch circuitry and current capacity with versatile pushbutton-type manual control and styling. Internal mechanism identical to "TL" toggle switches. **Buttons:** Transparent button accepts under-the-surface legend insert; Translucent button is ideal for edge lighting. **Mounting:** Flush Panel for low profile and edge lighting; Above Panel for distinctive appearance. 3-hole mtg. in .935″ x 1.510″ hole. **Operating Temperature:** −65° to +160° F.

2-POSITION ROCKER BUTTON SWITCHES

No. of Poles	Rating †	Circuit with Button At: One Side	Circuit with Button At: Other Side	Flush Panel: Translucent	Flush Panel: Transparent	Above Panel: Translucent	Above Panel: Transparent
				Micro Switch No. (Prices Below)			
1	1	Off	On	1TP1-2	1TP12-2	1TP16-2	1TP4-2
	2	Off*	On	1TP1-4	1TP12-4	1TP16-4	1TP4-4
	2	On*	Off	1TP1-6	1TP12-6	1TP16-6	1TP4-6
	1	On	On	1TP1-3	1TP12-3	1TP16-3	1TP4-3
	2	On*	On	1TP1-8	1TP12-8	1TP16-8	1TP4-8
2	3	Off	On	2TP1-2	2TP12-2	2TP16-2	2TP4-2
	4	Off*	On	2TP1-4	2TP12-4	2TP16-4	2TP4-4
	4	On*	Off	2TP1-6	2TP12-6	2TP16-6	2TP4-6
	3	On	On	2TP1-3	2TP12-3	2TP16-3	2TP4-3
	4	On*	On	2TP1-8	2TP12-8	2TP16-8	2TP4-8
4	5	Off	On	4TP1-2	4TP12-2	....	4TP4-2
	6	Off*	On	4TP1-4	4TP12-4	4TP16-4	4TP4-4
	6	On*	On	4TP1-6	4TP12-6	....	....
	5	On	On	4TP1-3	4TP12-3	4TP16-3	4TP4-3
	6	On*	On	4TP1-8	4TP12-8	4TP16-8	....

3-POSITION ROCKER BUTTON SWITCHES

1TP is 1-pole switch; 2TP, 2-pole; 4TP, 4-pole.

Rating †	Circuit with Button At‡: One Side	Circuit with Button At‡: Center	Circuit with Button At‡: Other Side	Flush Panel: Translucent	Flush Panel: Transparent	Above Panel: Translucent	Above Panel: Transparent
				Micro Switch No. (Prices Below)			
1	On	Off	On	1TP1-1	1TP12-1	1TP16-1	1TP4-1
2	On*	Off	On	1TP1-5	1TP12-5	1TP16-5	1TP4-5
2	On*	Off	On*	1TP1-7	1TP12-7	1TP16-7	1TP4-7
1	None	Off	On	1TP1-21	1TP12-21	....	1TP4-21
2	None	Off*	On	....	1TP12-41	....	1TP4-41
1	None	On	On	1TP1-31	1TP12-31	....	1TP4-31
2	None	On	On*	1TP1-51	1TP12-51	1TP16-51	1TP4-51
2	On*	Off	None	1TP1-61	1TP12-61	1TP16-61	1TP4-61
3	On	Off	On	2TP1-1	2TP12-1	2TP16-1	2TP4-1
4	On*	Off	On	2TP1-5	2TP12-5	2TP16-5	2TP4-5
4	On*	Off	On*	2TP1-7	2TP12-7	2TP16-7	2TP4-7
3	None	Off	On	2TP1-21	2TP12-21	2TP16-21	2TP4-21
4	None	Off*	On	2TP1-41	2TP12-41	2TP16-41	....
3	None	On	On	2TP1-31	2TP12-31	2TP16-31	2TP4-31
4	None	On	On*	2TP1-51	2TP12-51	2TP16-51	2TP4-51
4	On*	Off	None	2TP1-61	2TP12-61	2TP16-61	2TP4-61
3	On	On	On	2TP1-10	2TP12-10	2TP16-10	2TP4-10
4	On*	On	On	2TP1-50	2TP12-50	2TP16-50	2TP4-50
4	On*	On	On*	2TP1-70	2TP12-70	2TP16-70	2TP4-70
5	On	Off	On	4TP1-1	4TP12-1	4TP16-1	4TP4-1
6	On*	Off	On	4TP1-5	4TP12-5	....	4TP4-5
6	On*	Off	On*	4TP1-7	4TP12-7	4TP16-7	4TP4-7
5	None	Off	On	4TP1-21	4TP12-21	4TP16-21	4TP4-21
6	None	Off*	On	4TP1-41	4TP12-41	4TP16-41	4TP4-41
5	None	On	On	4TP1-31	....	4TP16-31	4TP4-31
6	None	On	On*	4TP1-51	....	4TP16-51	4TP4-51
6	On*	Off	None	4TP1-61	4TP12-61	4TP16-61	4TP4-61
5	On	On§	On	4TP1-10	4TP12-10	....	4TP4-10
6	On*	On	On	4TP1-50	4TP12-50	4TP16-50	4TP4-50
6	On*	On§	On*	4TP1-70	4TP12-70	4TP16-70	4TP4-70

*Momentary positions; all others are maintained positions. †See rating chart below. ‡"None" indicates toggle lever is blocked from these positions, leaving only two usable positions. §Only two circuits are completed in this position; all other types complete 1 circuit per pole in "on" position.

PRICES FOR SERIES TP ROCKER SWITCHES

Prefix	List*	Prefix	List*	Prefix	List*
1TP1	$6.75	2TP1	$7.75	4TP1	$9.15
1TP12	6.65	2TP12	7.75	4TP12	9.15
1TP16	6.65	2TP16	7.75	4TP16	9.15
1TP4	6.75	2TP4	7.75	4TP4	9.15

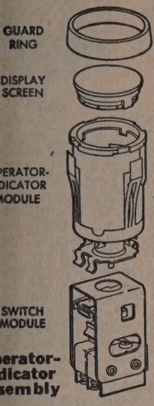
SERIES TW TOGGLE SWITCHES

Small in size, light in weight, with the versatility of larger toggle switches. Meet requirements of MIL-S-83731. Nickel-plated brass housing on high-dielectric thermoset plastic switching base. Molded-in plated terminals. With lockwasher, keying washer, two hex nuts. **Electrical Rating:** 5 amps resistive, 2 amps inductive, 1 amp lamp rating, at 115 VAC or 30 VDC. **Circuit:** Two-position switches have On-On circuit; three-position, On-Off-On. Two-pole switches have two separate SPDT circuits. Write for prices on pull-to-unlock 15/32″ bushing types only.

Positions	No. of Poles	With 1/4″ Bushing: Micro Number	With 1/4″ Bushing: List Price*	With 15/32″ Bushing: Micro Number	With 15/32″ Bushing: List Price*
2	1	1TW1-3	$2.95	11TW1-3	$4.25
2*	1	1TW1-8	3.50	11TW1-8	4.80
2	2	2TW1-3	3.85	12TW1-3	5.15
2*	2	2TW1-8	4.85	12TW1-8	6.15
3	1	1TW1-1	3.05	11TW1-1	4.35
3*	1	1TW1-5	3.50	11TW1-5	4.80
3†	1	1TW1-7	3.50	11TW1-7	4.80
3	2	2TW1-1	4.30	12TW1-1	5.60
3*	2	2TW1-5	4.85	12TW1-5	6.15
3†	2	2TW1-7	4.85	12TW1-7	6.15

*One momentary position. †Two momentary positions; all others are maintained positions.

SERIES 2M, ROUND FORM ILLUMINATED DISPLAY PUSHBUTTON SWITCHES



Similar to Rectangular Form Series 2 except in shape. Available with or without a magnetic detent.

Operator-Indicator Assembly provides both control and display.

Indicator Assembly is for display only.

How to order: All Series 2M modules are furnished unassembled. For each indicator assembly desired, specify one guard ring, one display screen and one indicator unit. For each operator-indicator assembly, specify one guard ring, one display screen, one operator-indicator unit and one switch unit. For switch units, lamps and color filters, see Rectangular Form Series 2 listing.

GUARD RINGS—PRODUCT CLASS 85

Encircle the display screens and help prevent accidental operation. Attach to the housing from panel front and turn to lock.

.315″ High			.475″ High		
No.	Color	List*	No.	Color	List*
2K1	Red	$0.28	2K6	Red	$0.34
2K2	White	.28	2K7	White	.34
2K3	Gray	.28	2K8	Gray	.34
2K4	Black	.28	2K9	Black	.34
2K5	Blue	.28	2K10	Blue	.34

DISPLAY SCREENS—PRODUCT CLASS 84

e-piece screens may be engraved on front surface. **Three-piece** eens consist of cap (colored or colorless), legend insert (colorless), and base (colored). For color filters and lamps see Rectangular Form Series 2.

DISPLAY SCREENS (CONTINUED)

Color	1-Piece Screen	3-Piece Screens	
		With Colored Cap*	With Colorless Cap
Red	2J1	2J6	2J10
Yellow	2J2	2J7	2J11
Green	2J3	2J8	2J12
Blue	2J4	2J9	2J13
White	2J5	....	2J14

*Caps colored to match base.

All Screens—Specify Model No. List Price............ **$0.90***

OPERATOR-INDICATORS—PRODUCT CLASS 86

Micro Switch Number	No. of Sockets	Holding Coil DC	List Price*
2M1	2	w/o	$3.55
2M2	4	w/o	4.15
2M3	2	6 V	8.35
2M4	4	6 V	8.90
2M5	2	28 V	8.50
2M6	4	28 V	9.00

INDICATORS—PRODUCT CLASS 86

2R1	2	....	$2.80
2R2	4	....	3.35

SERIES 500TS TOGGLE SWITCHES

ON OFF ON
MICRO

512TS

A—Greater over-surface creepage (and clearance distances). **B**—Toggle lever sealed (against moisture, dust, etc.). **C**—Riveted solid silver contacts (for maximum contact and heat dissipation). **D**—Copper moving contact carrier (for maximum conductivity and minimum temperature rise). **E**—Momentary versions built without return springs (eliminating source of early failure). **F**—All screw terminals are plated to permit solder connections.

SINGLE POLE SWITCHES

ers **Features** A through F. **Current Capacity:** Continuous, amps; resistive: 6 amps at 220 VAC, 15 amps at 115 VAC. pplied with lock washer, nut and locking ring that locks switch ainst rotation by means of keyway and tab. Max. Wt., 1½ oz.

Screw Terminals		Circuit With Toggle At			List Price*
Micro No.	MS No.	One Side	Center	Other Side	
ITS1-1	MS35058-21	On	Off	On	$3.00
ITS1-2	MS35058-22	On	None	Off	2.50
ITS1-3	MS35058-23	On	None	On	3.00
ITS1-21	MS35058-24	On	Off	None	2.50
ITS1-41	MS35058-25	On	Off*	None	2.75
ITS1-8	MS35058-26	On	None	On*	3.25
ITS1-7	MS35058-27	On*	Off	On*	3.25
ITS1-61	MS35058-28	None	Off	On*	2.75
ITS1-4	MS35058-29	On	None	Off*	2.75
ITS1-6	MS35058-30	Off	None	On*	2.75
ITS1-5	MS35058-31	On	Off	On*	3.25

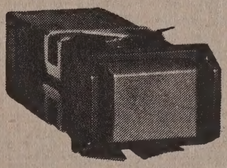
TWO-POLE SWITCHES

ovides **Features** A through F. **Current Capacity:** Continuous, 30 ps; resistive: Models 512TS1-1 through 512TS1-21—9 amps 220 VAC, 25 amps at 115 VAC; Models 512TS1-41 through TS1-5—6 amps at 220 VAC, 15 amps at 115 VAC. Supplied h lock washer, nut and locking ring that locks switch against ation. Maximum Weight, 1.6 oz.

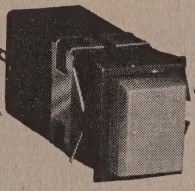
TS1-1	MS35059-21	On	Off	On	$3.95
TS1-2	MS35059-22	On	None	Off	3.30
TS1-3	MS35059-23	On	None	On	3.95
TS1-10	MS25201-4	On	On	On	4.70
TS1-21	MS35059-24	On	Off	None	3.30
TS1-41	MS35059-25	On	Off*	None	3.95
TS1-8	MS35059-26	On	None	On*	4.30
TS1-7	MS35059-27	On*	Off	On*	4.30
TS1-61	MS35059-28	None	Off	On*	3.95
TS1-50	MS25201-5	On	On	On*	4.70
TS1-70	MS25201-6	On*	On	On*	4.70
TS1-4	MS35059-29	On	None	Off*	3.95
TS1-6	MS35059-30	Off	None	On*	3.95
TS1-5	MS35059-31	On	Off	On*	4.30

omentary positions; all others are maintained positions.

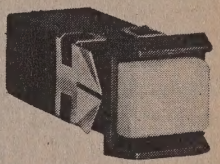
SERIES 4 LIGHTED PUSHBUTTON SWITCHES AND INDICATORS



Short Barriers



Bezel Type



Long Barriers

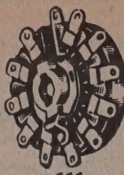
- **LOW INSTALLED COST**
  Snap-in mounting for panels up to .200″ thick. Standard price includes assembled product, with lamp, ready to install in your panels. Front of panel mounting and relamping.
- **EASY WIRING**
  Lead wires are readily attached to .110″ QC terminals. Lamp and switch terminals are on same level.
- **PRECISION SWITCHING RELIABILITY**
  Long life dependability assured by time-proven SM basic switches. Choice of momentary or alternate action, 1 or 2 basic switches. UL Listed low energy (1 amp, 125 VAC) and power load (5 and 10 amp, 250 VAC) versions.
- **DISTINCTIVE LIGHTED DISPLAY COLORS**
  Transmitted color, projected color, and hidden legend/hidden color options.
- **VERSATILITY IN PANEL ARRANGEMENT**
  Choice of bezel or barrier style housings, which may be mounted individually or in vertical and horizontal strips.
- **MATCHING INDICATORS**
  Indicators feature the same buttons and housing styles as the pushbutton switches.

CONTACT US FOR CATALOG INFORMATION AND PRICES ON SERIES 4 SWITCHES

★WRITE OR CALL FOR QUANTITY DISCOUNTS

OHMITE Power Tap Switches

711



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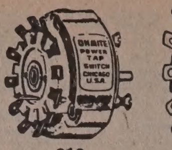

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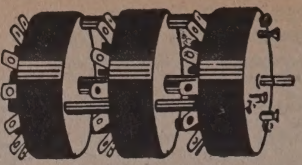


Tandem Assembly

T-10012

Dial

MODEL 711 MINIATURE SWITCH

Single pole, non-shorting selector switch with stationary and movable solid silver alloy contacts. Slow-break, quick-make action achieved with cam and cam follower. Breaks 7 amps at 125 VAC (or 20 VDC); carries 15 amps at 125 VAC/DC. Molded melamine phenolic body 1⅛″ dia. x 13/16″ depth behind panel; ¼″ flatted shaft. Mounts by ⅜-32 bushing and hex nut. Model number suffix indicates taps (711-3, 3 taps). Use No. 5103 knob.

Ohmite No.	Net Each 1-4	Net Each 5-9	Net Each 10 Up	Ohmite No.	Net Each 1-4	Net Each 5-9	Net Each 10 Up
711-3	$5.00	$4.25	$3.00	711-8	$5.80	$4.93	$3.48
711-4	5.10	4.34	3.06	711-9	6.00	5.10	3.60
711-5	5.30	4.51	3.18	711-10	6.10	5.19	3.66
711-6	5.50	4.68	3.30	711-11	6.20	5.27	3.72
711-7	5.60	4.76	3.36				

CERAMIC HIGH-CURRENT ROTARY SWITCHES

Non-shorting, single pole, rotary, multi-position unit with 2 or 3 in tandem available. **Bodies:** High grade, arc proof ceramic bodies. **Contacts:** Large, solid, silver alloy contacts. **Action:** Positive cam and roller mechanism provides slow-break quick make action. **Shaft:** Insulated by strong ceramic hubs. **Enclosed Mechanism:** Contacts and mechanism are entirely enclosed and protected except Model 111. **Applications:** Switchboards, arc welders, spot welders, battery chargers, motor controls, tapped transformers, X-ray equipment, diathermy equipment, radio transmitters, electrical machine tools, etc. Many variations from the basic switch design to meet your special switch requirements are available on request.

Model	AC Rating	Dia. In.	Shaft Dia.	Depth Behind Panel: Single	Depth Behind Panel: Double	Depth Behind Panel: Triple	Single Unit Wt., Lbs.
111	15 A, 125 V	1¾	¼″	1⅛″	2¾″	......	.16
212	20 A, 150 V	2¼	¼″	1¾″	4 3/16″	6 3/16″	.4
312	30 A, 300 V*	3 5/16	¼″	2¼″	4⅝″	7″	.75
412	50 A, 300 V*	4 3/16	¼″	2 7/16″	5 1/16″	7⅝″	1.4
608	100 A, 300 V	6	⅜″	3 5/16″	6 13/16″	10 5/16″	5

*150 V between taps.

TOTAL ROTATION

No. of Taps	3	4	5	6	7	8	9	10	11	12
Total Rotation*	60°	90°	120°	150°	180°	210°	240°	270°	300°	330°

*For Model 608: 3 taps, 80°; 4 taps, 120°; 5 taps, 160°; 6 taps, 200°; 7 taps, 240°; 8 taps, 280°.

MODEL 111 TAP SWITCHES

No. of Taps	Total Rotation	Single Unit: No. 111	Single Unit Net Each: 1-4	5-9	10Up	2 in Tandem: No. 111	2 in Tandem Net Each: 1-2	3 Up
3	60°	-3	$4.25	$3.61	$2.55	-3-T2	$12.25	$10.54
4	90°	-4	4.40	3.74	2.64	-4-T2	12.50	10.75
5	120°	-5	4.50	3.83	2.70	-5-T2	12.75	10.97
6	150°	-6	4.65	3.95	2.79	-6-T2	13.00	11.18
7	180°	-7	4.75	4.04	2.85	-7-T2	13.25	11.40
8	210°	-8	4.95	4.21	2.97	-8-T2	13.50	11.61
9	240°	-9	5.00	4.25	3.00	-9-T2	13.75	11.83
10	270°	-10	5.20	4.42	3.12	-10-T2	14.00	12.04
11	300°	-11	5.30	4.51	3.18	-11-T2	14.25	12.26
Use knob		No. 5150 or 5116				5109 or 5110		

MODEL 212 TAP SWITCHES

No. of Taps	Single Unit: No. 212	Single Unit Net Each: 1-4	5-9	10 Up	2in Tandem† Net Each: 1-2	3 Up	3in Tandem† Net Each: 1	2 Up
3	-3	$ 8.50	$7.23	$5.10	$20.25	$17.42	$30.50	$26.54
4	-4	8.70	7.40	5.22	20.50	17.63	31.00	26.97
5	-5	8.90	7.57	5.34	21.00	18.06	31.50	27.41
6	-6	9.20	7.82	5.52	21.50	18.49	32.00	27.84
7	-7	9.40	7.99	5.64	21.75	18.71	33.00	28.71
8	-8	9.60	8.16	5.76	22.25	19.14	33.50	29.15
9	-9	9.80	8.33	5.88	22.50	19.35	34.00	29.58
10	-10	10.00	8.50	6.00	23.00	19.78	34.50	30.02
11	-11	10.20	8.67	6.12	23.25	20.00	35.00	30.45
12	-12	10.30	8.76	6.18	23.75	20.43	36.00	31.32
Knob	No. 5150 or 5116				5111 or 5112		5111 or 5112	

MODEL 608 TAP SWITCHES

No. of Taps	Single Unit: No. 608	Single Unit Net Each: 1-4	5 Up	2 in Tandem: No. 608	2 in Tandem Net Each: 1-2	3 Up	3 in Tandem: No. 608	3 in Tandem Net Each: 1	2 Up
3	-3	$26.50	$22.53	-3-T2	$60.00	$51.60	-3-T3	$89.00	$77.43
4	-4	27.00	22.95	-4-T2	62.00	53.32	-4-T3	92.00	80.04
5	-5	27.50	23.38	-5-T2	64.00	55.04	-5-T3	95.00	82.65
6	-6	28.00	23.80	-6-T2	66.00	56.76	-6-T3	98.00	85.26
7	-7	28.50	24.23	-7-T2	68.00	58.48	-7-T3	101.00	87.37
8	-8	29.00	24.65	-8-T2	70.00	60.20	-8-T3	104.00	90.48
Knob	5104 or 5105			5104, 5105, 5115			No. 5115		

MODEL 312 TAP SWITCHES

No. of Taps	Single Unit: No. 312	Single Unit Net Each: 1-4	5-9	10 Up	2in Tandem* Net Each: 1-2	3 Up	3in Tandem† Net Each: 1	2 Up
3	-3	$11.25	$ 9.56	$6.75	$27.00	$23.22	$41.00	$35.67
4	-4	11.50	9.78	6.90	27.50	23.65	41.50	36.11
5	-5	11.75	9.99	7.05	28.00	24.08	42.00	36.54
6	-6	12.00	10.20	7.20	28.50	24.51	42.50	36.98
7	-7	12.25	10.41	7.35	29.00	24.94	43.00	37.41
8	-8	12.50	10.63	7.50	29.50	25.37	43.50	37.85
9	-9	12.75	10.84	7.65	30.00	25.80	44.50	38.72
10	-10	13.00	11.05	7.80	30.50	26.23	45.00	39.15
11	-11	13.25	11.26	7.95	31.00	26.66	45.50	39.59
12	-12	13.50	11.48	8.10	31.50	27.09	46.00	40.02
Knob	No. 5109 or 5110				5111 or 5112		5111 or 5112	

MODEL 412 TAP SWITCHES

No. of Taps	Single Unit: No. 412	Single Unit Net Each: 1-4	5-9	10 Up	2in Tandem* Net Each: 1-2	3 Up	3in Tandem† Net Each: 1	2 Up
3	-3	$14.75	$12.54	$ 8.85	$34.00	$29.24	$51.00	$44.37
4	-4	15.00	12.75	9.00	34.50	29.67	52.00	45.24
5	-5	15.25	12.96	9.15	35.00	30.10	53.00	46.11
6	-6	15.50	13.18	9.30	36.00	30.96	54.00	46.98
7	-7	15.75	13.39	9.45	36.50	31.39	55.00	47.85
8	-8	16.00	13.60	9.60	37.00	31.82	56.00	48.72
9	-9	16.25	13.81	9.75	37.50	32.25	57.00	49.59
10	-10	16.75	14.24	10.05	38.00	32.68	58.00	50.46
11	-11	17.00	14.45	10.20	38.50	33.11	59.00	51.33
12	-12	17.25	14.66	10.35	39.50	33.97	60.00	52.20
Knob	No. 5111 or 5112				5111 or 5112		5111 or 5112	

ALL CERAMIC OPEN TYPE TAP SWITCHES

Rated 7 amps max., 3 amps interrupted, at 120 VAC. Less for all DC circuits above 20 V for inductive circuits and high voltages. Body 3¼″ dia. (up to 8 taps, 9–12 taps are 4¼″ dia.) including lugs. Shaft, ¼″ dia. **Knob:** No. 5150 knob recommended. **Shorting Type:** Moving contact bridges closely spaced taps completing a new circuit before breaking the previous one. Switch arm is not indexed and can be left in any position. **Non-Shorting Type:** Positively indexed, moving contact completely disconnects from one tap before contacting succeeding tap.

No. of Contacts	Shorting Type: No.	Shorting Type Net Each: 1-4	5-9	10Up	Non-Shorting Type: No.	Non-Shorting Type Net Each: 1-4	5-9	10Up
3	....	......	......	......	T-503	$6.00	$5.10	$4.02
4	T-504-S	$5.70	$4.85	$3.82	T-504	6.50	5.53	4.36
5	T-505-S	6.40	5.44	4.29	T-505	7.00	5.95	4.69
6	T-506-S	7.00	5.95	4.69	T-506	7.50	6.38	5.03
7	T-507-S	7.70	6.55	5.16	T-507	8.00	6.80	5.36
8	T-508-S	8.40	7.14	5.63	T-508	8.50	7.23	5.70
9	T-1009-S	9.00	7.65	6.03	T-1009	9.00	7.65	6.03
10	T-10010-S	9.70	8.25	6.50	T-10010	9.50	8.08	6.37
11	T-10011-S	10.40	8.84	6.97	T-10011	10.00	8.50	6.70
12	T-10012-S	11.00	9.35	7.37	T-10012	10.50	8.93	7.04

TAP SWITCH DIALS

Made of aluminum, etched and enameled black. Bright aluminum dial markings agree with actual number of positions on switch.

No.	Dial Dia.	For Model	For Knob	Net Each 1-9	10-49	50 Up
5002-‡	2¾″	111	5109	49c	42c	32c
		212 (Single) 312 (Single)	5116 5150			
5003-‡	3¾″	212 (Tandem) 312 (Tandem) 412	5111 5152A	73c	62c	47c
5004-‡	5½″	608	5104, 5115	82c	70c	53c

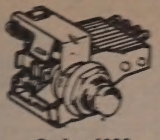
TAP SWITCH KNOBS

No.	Description	Dia., In.: Hole	Dia., In.: Knob	Net Each 1-9	10-49	50 Up
5102	Bar knob, 2¼″ long	¼	......	$0.58	$0.49	$0.38
5103	Bar knob, 1¼″ long	¼	......	.24	.20	.16
5104	Handwheel, pointer	⅜	3¼	1.60	1.36	1.04
5105	5104 less pointer	⅜	3¼	1.35	1.15	.88
5106	Handwheel, pointer	¼	3¼	1.60	1.36	1.04
5107	5106 less pointer	¼	3¼	1.35	1.15	.88
5109	Finger-grip, pointer	¼	1⅝	1.00	.85	.65
5110	5109 less pointer	¼	1⅝	.95	.81	.62
5111	Finger-grip, pointer	¼	2⅜	1.55	1.32	1.01
5112	5111 less pointer	¼	2⅜	1.40	1.19	.91
5115§	Bar knob, 4¾″ long	⅜	......	3.45	2.93	2.24
5116	Bar knob, 1¼″ long	¼	......	.58	.49	.38
5150	Finger-grip	¼	1½	.33	.28	.21
5151	Finger-grip	⅛	¾	.33	.28	.21
5152A	Handwheel, short pointer	¼	3¼	1.85	1.57	1.30

*For 2 in Tandem type add suffix **-T2** to single unit number (e.g., 212-3-**T2**). †For 3 in Tandem type add suffix **-T3** to single unit number (e.g., 212-3-**T3**). ‡Specify number of positions as a suffix. §Requires pin and tapped hole in shaft.

ILLUMINATED "NF-LITE" SWITCHES

Series 4100

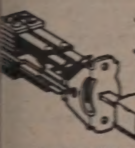

Series 4200

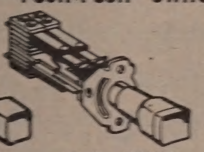
Indicate switching and circuit functions at a glance. Flat frame construction provides multiple pole momentary action switching. Lighting circuit independent of switching circuit. For control panel or press-to-test applications. Fine silver contacts, rated 3 amps, 300 tts max., AC, non-inductive. **Series 4100** uses a single miniature np, 6 or 28 V. Light is filtered through color chip to clear plastic shbutton; different chips can be inserted as needed from kit of r (red, amber, green, yellow) furnished. **Series 4200** similar cept uses two lamps for greater illumination or for color-coding o circuit conditions; two color chip kits furnished. Both series quire 11/16" min., 1 5/16" max. depth behind panel, depending on e of stack, and mount in 3/8" hole in panels up to 1/4" thick. mps must be purchased separately; see lamp listing below.

SERIES 4100

Part No.	Schematic Circuit	Action	Net Each, Lots of 1-24	25-49	50-99	100-249*
4106	2 "C"	DPDT	$1.65	$1.51	$1.38	$1.10
4109	3 "C"	3PDT	2.13	1.95	1.78	1.42
SERIES 4200						
4206	2 "C"	DPDT	$2.34	$2.15	$1.95	$1.56
4209	3 "C"	3PDT	2.70	2.48	2.25	1.80

"PUSH-PUSH" SWITCHES


Series 5000


Series 15000

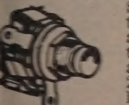
Push-to-lock, push-to-release or momentary action pushbutton switches. Available in numerous multiple pole circuits. Welded cross bar palladium contacts rated at 2 amps, 200 watts max., non-inductive AC load. Mount with two 3-48 screws on " centers. Depth behind panel, 2 7/8". **Series 5000** non-illuminated shbutton switch, supplied with square, brown button. **Series 000** illuminated pushbutton switch, supplied with modern white, uare button with front and side illumination; white lamp ffuser provides uniform lighting; knurled retaining collar for sy lamp replacement. Use 6 or 28 V lamp (not supplied; see tings). Lighting circuits are isolated from switching stacks.

NON-ILLUMINATED

5006*	2 "C"	DPDT	$4.32	$3.96	$3.60	$2.88
5012*	4 "C"	4PDT	5.76	5.28	4.80	3.84
ILLUMINATED						
5003*	1 "C"	SPDT	$5.43	$4.98	$4.53	$3.62
5012*	4 "C"	4PDT	7.32	6.71	6.10	4.88

'art Nos. shown are for momentary types; add suffix **L** for cking types. †Add letter **"L"** here if pushbuttons are to light "IN" position only; add **"M"** if to light in "OUT" position ly; add **"N"** to light in both "IN" and "OUT" positions.

ILLUMINATED "LITTEL-LITE" SWITCHES



Small momentary contact, illuminated pushbutton switches. Require minimum panel space, thus are ideal for limited space applications and press-to-test circuits. One-piece, clear plastic button and shaft illuminated by single miniature 6 or 28 V lamp. Lamps are not furnished; see lamp listing below. Includes kit of 4 color chips (red, amber, green, and yellow); can be inserted in itch at any time. Nickel silver spring contacts are recommended r low level circuits where contact resistance is not important. so available, fine silver contacts (Part No. with suffix **"S"**) ted at 3 amps, 300 watts, max., AC non-inductive load. Lighting rcuit is independent of switching circuit. Mount in single 3/8" le in panels up to 1/4" thick; depth behind panel 1 1/8".

211	1 "A"	SPST-NO	$1.17	$1.07	$0.975	$0.78
213	1 "C"	SPDT	1.44	1.32	1.20	.96
211S	1 "A"	SPST-NO	1.35	1.24	1.13	.90
213S	1 "C"	SPDT	1.59	1.46	1.33	1.06

LAMPS FOR ILLUMINATED SWITCHES

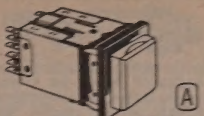
NF-Lite", "Littel-Lite", "Push-Lite" and Series 15000 "Push-sh" switches are not supplied with lamps; all lamps must be dered separately by the following part numbers.

AMPS FOR "NF-LITE" AND "LITTEL-LITE" SWITCHES

Part No.	V	Lamp Base	Net Each, Lots of 1-24	25-49	50-99	100-249*
-1217	6 V	Screw	$0.81	$0.743	$0.675	$0.54
-1218	28 V	Screw	1.35	1.24	1.13	.90
AMPS FOR "PUSH-LITE" AND "PUSH-PUSH" SWITCHES						
-1593-1	28 V	Flange	$0.90	$0.825	$0.75	$0.60
-1593-2	6 V	Flange	.72	.66	.60	.48
-1593-5	6 V	Flange	.90	.825	.75	.60
-1593-6	28 V	Flange	.75	.688	.625	.50
-1593-7	6 V	Flange	.93	.853	.775	.62
-1890*	6 V	Flange	2.10	1.93	1.75	1.40
-1 Lamp Adapter for P-1890†			.45	.413	.375	.30

T-1 subminiature lamp for "Push-Lite" only; requires Part No. -1 lamp adapter. †Converts T-1 lamp base to T-1¾ base.

"PUSH-LITE" SWITCHES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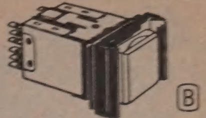

B

First completely enclosed lighted pushbutton switch to feature highly reliable, long-life, leaf-spring switching. Available in momentary or push-lock/push-release functions with single or twin lamps, with or without barriers, and with full or split-face display, 1 "C" to 4 "C" switching and black or gray housing. Standard pushbutton color is white; other colors available on special order. Molded crossbar palladium contacts are standard; rated 2 amps, 200 watts max., AC non-inductive load. Power switching up to 5 amps available on special order. Switches mount with clamp-type bracket requiring no screws, washers or nuts. Can be flange-mounted (Fig. A) in 1" x 7/8" panel cutout or barrier-mounted (Fig. B) in 1 3/16" x 7/8" cutout. Depth behind panel only 1¾"; can be mounted in vertical or horizontal rows and in matrices. Switch accepts standard T-1¾ flange base lamps (not furnished) with 6 volt or 28 volt ratings; see listing at left below. Specify one for single lamp type or two lamps for twin lamp type when redundant or split-face lighting is required. Barriers and colored filter snap inserts are optional.

MOMENTARY ACTION—SINGLE LAMP

Part Numbers: Black Housing	Gray Housing	Schem.	Action	Net Each, Lots of 1-24	25-49	50-99	100-249*
PL-1032-05	PL-4032-05	1 "C"	SPDT	$5.55	$5.09	$4.63	$3.70
PL-1062-05	PL-4062-05	2 "C"	DPDT	5.70	5.23	4.75	3.80
PL-1122-05	PL-4122-05	4 "C"	4PDT	6.15	5.64	5.13	4.10
MOMENTARY ACTION—TWIN LAMP							
PL-2032-05	PL-5032-05	1 "C"	SPDT	$5.70	$5.23	$4.75	$3.80
PL-2062-05	PL-5062-05	2 "C"	DPDT	5.85	5.36	4.88	3.90
PL-2122-05	PL-5122-05	4 "C"	4PDT	6.30	5.78	5.25	4.20
PUSH-LOCK/PUSH-RELEASE—SINGLE LAMP							
PL-1037-05	PL-4037-05	1 "C"	SPDT	$5.85	$5.36	$4.88	$3.90
PL-1067-05	PL-4067-05	2 "C"	DPDT	6.00	5.50	5.00	4.00
PL-1127-05	PL-4127-05	4 "C"	4PDT	6.45	5.91	5.38	4.30
PUSH-LOCK/PUSH-RELEASE—TWIN LAMP							
PL-2037-05	PL-5037-05	1 "C"	SPDT	$6.45	$5.91	$5.38	$4.30
PL-2067-05	PL-5067-05	2 "C"	DPDT	6.60	6.05	5.50	4.40
PL-2127-05	PL-5127-05	4 "C"	4PDT	7.05	6.46	5.88	4.70

COLOR FILTER SNAP-INSERTS

Translucent filters for color coding in "Push-Lite" switches. Use white or clear pushbuttons. Std. pkg., 25; split-face, 50.

Full Display Color Filters

Part No.	Color	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
PL-301	Red	$0.066	$0.061	$0.055	$0.044	$0.042	$0.04
PL-303	Green	.066	.061	.055	.044	.042	.04
PL-304	Blue	.066	.061	.055	.044	.042	.04
PL-305	White	.066	.061	.055	.044	.042	.04
PL-308	Yellow	.066	.061	.055	.044	.042	.04
Split-Face Display Color Filters							
PL-401	Red	$0.048	$0.044	$0.04	$0.032	$0.03	$0.029
PL-403	Green	.048	.044	.04	.032	.03	.029
PL-404	Blue	.048	.044	.04	.032	.03	.029
PL-405	White	.048	.044	.04	.032	.03	.029
PL-408	Yellow	.048	.044	.04	.032	.03	.029

OPTIONAL MOUNTING BARRIERS

Molded plastic barriers can be used to separate "Push-Lite" switches to prevent accidental operation of adjacent switches. **Series PL-100 End Barriers**—One required when switches are mounted adjacently; two when mounted individually. **Series PL-200 Center Barriers**—Two required between switches when mounted adjacently. Standard package is 10.

PL-102	Black	$0.09	$0.083	$0.075	$0.06	$0.057	$0.054
PL-111	Gray	.09	.083	.075	.06	.057	.054
PL-202	Black	.09	.083	.075	.06	.057	.054
PL-211	Gray	.09	.083	.075	.06	.057	.054
REPLACEMENT PUSHBUTTONS							
PL-501	Red	$0.15	$0.138	$0.125	$0.10	$0.095	$0.09
PL-503	Green	.15	.138	.125	.10	.095	.09
PL-504	Blue	.15	.138	.125	.10	.095	.09
PL-505	White	.15	.138	.125	.10	.095	.09
PL-508	Yellow	.15	.138	.125	.10	.095	.09
PL-512	Clear	.15	.138	.125	.10	.095	.09
PL-513	Amber	.15	.138	.125	.10	.095	.09

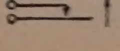
LIGHT DIVIDER

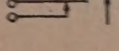
For use in standard "Push-Lite" switch pushbuttons to separate lighting from twin-lamps. Order one for each Series PL-2000 or PL-5000 switch specified where split-face lighting is desired. Standard package is 25.

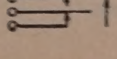
Part No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
PL-551	$0.06	$0.055	$0.05	$0.04	$0.038	$0.036

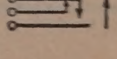
★LARGER QUANTITY PRICES ON REQUEST

BASIC CONTACT FORMS

A 

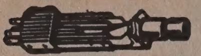
B 

C 

D 

SWITCHCRAFT® INC. Pushbutton Switches

"T-SWITCH"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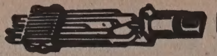
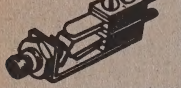

B

Rugged, long frame switches for quality communication equipment. Welded cross bar palladium contacts rated at 2 amps, 200 watts max., AC non-inductive load. Require minimum of panel space, only 9/16" x 13/16"; 2 7/8" depth behind panel. **Series 11000 (Fig. A)**, pushbutton T-Switch available in momentary action and push-to-lock, pull-to-release action. **Series 11200 (Fig. B)**, two position turn button T-Switch available in non-locking and locking action. Black button with white arrow indicates switching position. Prefix **W** indicates wire-wrapping terminals.

Part Number		Schematic Circuit	Net Each, Lots of					
Push-button*	Turn Button*		1-24	25-49	50-99	100-249	250-499	500-999
11003	11203	1 "C"†	$2.79	$2.56	$2.33	$1.86	$1.77	$1.67
11006	11206	2 "C"‡	3.48	3.19	2.90	2.32	2.20	2.09
11006D	11206D	2 "D"‡	3.48	3.19	2.90	2.32	2.20	2.09
11012	11212	4 "C"§	4.74	4.35	3.95	3.16	3.00	2.84
W11003	W11203	1 "C"†	2.88	2.64	2.40	.....	.....	.....
W11006	W11206	2 "C"‡	3.66	3.36	3.05	.....	.....	.....
W11012	W11212	4 "C"§	5.10	4.68	4.25	.....	.....	.....

*Add Suffix **"L"** to Part Number to indicate Locking Type desired; price remains the same. †SDPT. ‡DPDT. §4PDT.

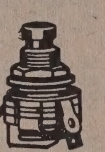
MINIATURE "TF" BUTTON SWITCHES



Small, sturdily constructed "Tiny Frame" switches. Provide simple, direct acting pushbutton switching for use where space is at a premium. Available as **Type 976L**, push-to-lock, pull-to-release; or **Type 976**, momentary action. Nickel silver springs, integral contacts, recommended for low level circuits where contact resistance is unimportant. Require only 1 19/32" depth behind panel; mount in single 1/4" hole in panels up to 3/32" thick.

Part No.	Schematic Circuit	Action	Net Each, Lots of			
			1-24	25-49	50-99	100-249*
976	2 "C"	DPDT	$1.02	$0.935	$0.85	$0.68
976L	2 "C"	DPDT	1.17	1.07	.975	.78

"LITTEL-SWITCH"

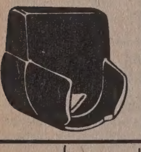


Series 100, 200, tiny, momentary contact, pushbutton switches. Rugged, dependable action. All contacts insulated from panel bushing with interlocking phenolic washers. Nickel silver springs; recommended only for low level circuits where contact resistance is unimportant. **Series 100S and 200S** have fine silver contacts rated at 3 amps or 300 watts max., AC, non-inductive load. One-piece plastic button and shaft in red or black. Mount in 3/8" hole in panels up to 1/4".

Part Number		Schematic Circuit	Net Each, Lots of			
Red Button	Black Button		1-24	25-49	50-99	100-249*
101	201	1 "A"*	$0.63	$0.578	$0.525	$0.42
101S	201S	1 "A"*	.81	.743	.675	.54
102	202	1 "B"†	.63	.578	.525	.42
102S	202S	1 "B"†	.81	.743	.675	.54
103	203	1 "C"‡	.75	.688	.625	.50
103S	203S	1 "C"‡	.93	.853	.775	.62

*SPST-NO. †SPST-NC. ‡SPDT.

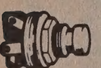
"CRADLE-SWITCH"



Holds W.E. and other standard telephone industry handsets. Housing is sturdy, yet flexible enough to withstand shocks and vibrations. Housing includes specially designed Hook Switch with 4PDT contact arrangement. Switch has long silver springs with gold alloy contacts rated 1 amp, 100 watts max., AC non-inductive load. Ideal for use in critical low-level audio ciruits. Housing color as indicated.

Part No.	Color	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
14412G	Black	$5.04	$4.62	$4.20	$3.36	$3.19	$3.02
14512G	Beige	5.04	4.62	4.20	3.36	3.19	3.02
14612G	White	5.04	4.62	4.20	3.36	3.19	3.02

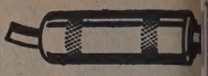
"TINY-SWITCH"



Sub-miniature pushbutton switches for limited space applications. **Series 950,** red button; **Series 960,** black button. Integral contacts suitable for low level circuits where contact resistance is not important. Mount in 1/4" hole in panels up to 3/32" thick; depth behind panel 3/8".

Part No.	Schematic Circuit	Action	Net Each, Lots of			
			1-24	25-49	50-99	100-249*
951	1 "A"	SPST-NO	$0.63	$0.578	$0.525	$0.42
952	1 "B"	SPST-NC	.63	.578	.525	.42
953	1 "C"	SPDT	.75	.688	.625	.50
961	1 "A"	SPST-NO	.63	.578	.525	.42
962	1 "B"	SPST-NC	.63	.578	.525	.42
963	1 "C"	SPDT	.75	.688	.625	.50

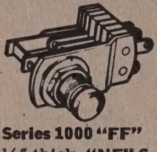
"CORD-SWITCH"

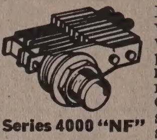


Series 903 or **913** button switch ideal as cord mounted or pendant switch in remote control applications. Prefix **E** in Part No. indicates bright nickel plated brass housing, **EP** is molded black plastic. Housing 1 1/16" dia., 2 3/16" lg. All switches are momentary SPDT, break before make (1 "C"). Rated 250 mA, 30 W max., AC non-inductive load.

Part Numbers		Net Each, Lots of					
Red Button	Black Button	1-24	25-49	50-99	100-249	250-499	500-999
E-903	E-913	$1.50	$1.38	$1.25	$1.00	$0.95	$0.90
EP-903	EP-913	1.35	1.24	1.13	.90	.855	.81

NON-LOCKING FLAT FRAME SWITCHES


Series 1000 "FF"


Series 4000 "NF"

"FF" Switches, Series 1000—Flat frame construction provides multiple pole switching with minimum depth behind panel. Fine silver contact rated at 3 amps, 300 watt max., AC, non-inductive load One-piece black button and shaft, 3/8" diameter threaded shank, mount in panels up to 1/4" thick. **"NF" Switches, Series 4000**—Same as "FF" but smalle spring design; for mounting in ultra-compact equipment. Only 1/2" w.; 1 5/8" lg.; mount in 3/8" hole in panels up to 5/32" thick

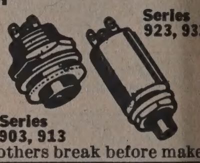
SERIES 1000 "FF" SWITCHES

Part No.	Schematic Circuit	Action	Net Each, Lots of			
			1-24	25-49	50-99	100-249*
1001	1 "A"	SPST-NO	$0.84	$0.77	$0.70	$0.56
1003	1 "C"	SPDT	.93	.853	.775	.62
1004	2 "A"	DPST-NO	1.02	.935	.85	.68
1006	2 "C"	DPDT	1.17	1.07	.975	.78
1009	3 "C"	3PDT	1.68	1.54	1.40	1.12

SERIES 4000 "NF" SWITCHES

Part No.	Schematic Circuit	Action	1-24	25-49	50-99	100-249*
4001	1 "A"	SPST-NO	$0.84	$0.77	$0.70	$0.56
4003	1 "C"	SPDT	.93	.853	.775	.62
4004	2 "A"	DPST-NO	1.02	.935	.85	.68
4006	2 "C"	DPDT	1.17	1.07	.975	.78
4009	3 "C"	3PDT	1.68	1.54	1.40	1.12

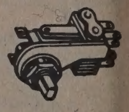
"BUTTON-SWITCH"



Unusually small, momentary action pushbutton switches. Enclosed in metal housing; black or red plastic button. **Series 903** and **913,** back panel mounting, 15/32" hole, mount in panels up to 19/64" thick. **Series 923** and **933,** front panel mounting; 1/4" hole, mount in panels up to 5/32" thick. All rated at 250 mA, AC, non-inductive load, 30 watts max.; SPDT, suffix **D** types make before break, others break before make

Part Numbers		Schematic Circuit	Net Each, Lots of			
Red Button	Black Button		1-24	25-49	50-99	100-249*
903	913	1 "C"	$0.93	$0.853	$0.775	$0.62
903D	913D	1 "D"	.93	.853	.775	.62
923	933	1 "C"	.99	.908	.825	.66
923D	933D	1 "D"	.99	.908	.825	.66

"RS" SWITCHES

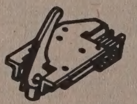


Rugged rotary switches, available in various multiple circuits, 2- and 3-position types, locking (add suffix **"L"** to No.; price remains the same) or non-locking action. Ideal for communication, musical and test equipment applications. Fiber cam actuates long, leaf-type springs resulting in easy action; good wiping action of contacts. Fine silver contacts rated at 3 amps, 300 watts max., AC, non-inductive load. Require only 7/8" depth behind panel mount in single 3/8" hole in panels up to 1/4" thick.

Part No.	Schematic Circuit		Action, Each Section	Net Each, Lots of			
	Pos. 1	Pos. 2		1-24	25-49	50-99	100-249*
2003*	1 "C"		SPDT	$1.23	$1.13	$1.03	$0.82
2006*	2 "C"		DPDT	1.65	1.51	1.38	1.10
2036†	1 "C"	1 "C"	SPDT	1.65	1.51	1.38	1.10

*Two-position type. †Three-position type.

"HOOK SWITCH"

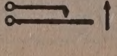


Leaf-type switches ideal for equipment where i is necessary to actuate a circuit by hanging an accessory on a "hook", such as a headset telephone or microphone. **No. 14006** is actuated by a hook (or hanger) and has fine silver contacts rated 3 amps, 300 watts max., AC non inductive load. **No. 14106G** is actuated by nylon actuator and has welded crossbar gold alloy contacts rated 1 amp 100 watts max., AC non-inductive load.

Part No.	Schematic Circuit	Action	Net Each, Lots of*			
			1-24	25-49	50-99	100-24
14006	2 "C"	DPDT	$2.10	$1.93	$1.75	$1.40
14106G	2 "C"	DPDT	2.31	2.12	1.93	1.54

★LARGER QUANTITY PRICES ON REQUEST

BASIC CONTACT FORMS

A


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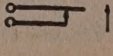

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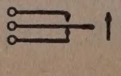

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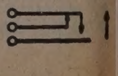
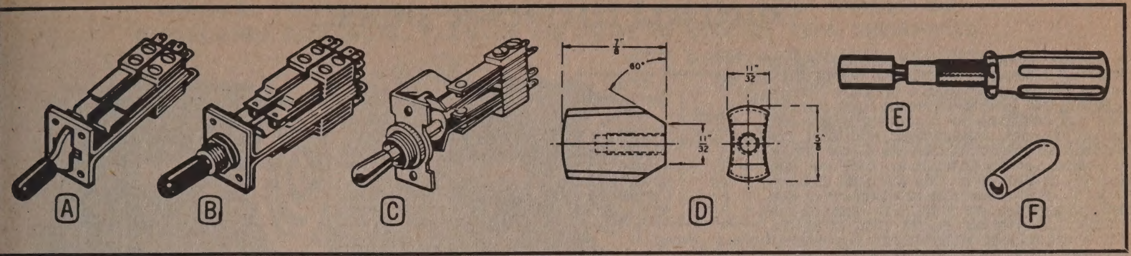


SWITCHCRAFT® INC. Lever Switches



"TELEVER" SWITCHES

B Telephone type lever switches. Feature relatively light but rugged "T-Beam" frame construction. Available in two d three positions, locking and non-locking types. With black ob. Nylon rollers provide smooth action; assure long dependable ring life. Welded cross bar palladium contacts rated 3 amps, 0 watts, max., AC, non-inductive load. **Series 6000 (Fig. A)** ounts with four #3-48 machine screws in panels up to ¼" thick. ounting centers, 17/32" x 13/16". **Series 16000 (Fig. B)** single ½" a. hole mounting in panels up to ¼" thick with 15/32"-32 threaded shing. Can be converted to locking type by removing "Stop ate". **Part No. 530 Escutcheon Plate** for Series 6000 has four ounting screws. **Part No. 540 Stop Plate** converts Series 16000 om locking to non-locking or momentary action. **Part No. 545 top Plate** converts Series 16000 from three-position to two-sition. Both stop plates can be changed in the field with two ounting screws supplied.

TWO-POSITION TYPES

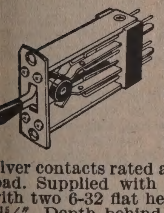
Part No.*	Schematic Cir.		Action	Net Each, Lots of*			
	Pos. 1	Pos. 2		1-24	25-49	50-99	100-249
06	2 "C"		DPDT	$3.33	$3.05	$2.78	$2.22
0012	4 "C"		4PDT	4.44	4.07	3.70	2.96
0012D	4 "D"		4PDT	4.98	4.57	4.15	3.32
0024	8 "C"		8PDT	6.78	6.22	5.65	4.52
6006	2 "C"		DPDT	3.48	3.19	2.90	2.32
6006D	2 "D"		DPDT	3.90	3.58	3.25	2.60
6008	4 "A"		4PST-NO	3.90	3.58	3.25	2.60
6009	3 "C"		3PDT	4.17	3.82	3.48	2.78
60012	4 "C"		4PDT	4.74	4.35	3.95	3.16
60012D	4 "D"		4PDT	5.22	4.79	4.35	3.48
60024	8 "C"		8PDT	6.93	6.35	5.78	4.62

THREE-POSITION TYPES†

36	1 "C"	1 "C"	SPDT	$3.33	$3.05	$2.78	$2.22
0312	2 "C"	2 "C"	DPDT	4.44	4.07	3.70	2.96
0312D	2 "D"	2 "D"	DPDT	5.01	4.59	4.18	3.34
0316	4 "A"	4 "A"	4PST-NO	5.85	5.36	4.88	3.90
0324	4 "C"	4 "C"	4PDT	6.78	6.22	5.65	4.52
6036	1 "C"	1 "C"	SPDT	3.48	3.19	2.90	2.32
6036D	1 "D"	1 "D"	SPDT	3.90	3.58	3.25	2.60
6038	2 "A"	2 "A"	DPST-NO	3.90	3.58	3.25	2.60
60312	2 "C"	2 "C"	DPDT	4.74	4.35	3.95	3.16
60312D	2 "D"	2 "D"	DPDT	5.22	4.79	4.35	3.48
60316	4 "A"	4 "A"	4PST-NO	6.12	5.61	5.10	4.08
60324	4 "C"	4 "C"	4PDT	6.93	6.35	5.78	4.62
30	Escutcheon plate			.63	.578	.525	.42
40	Stop plate			.21	.193	.175	.14
45	Stop plate			.21	.193	.175	.14

Add suffix **L** to number (i.e., 6006**L**) for locking type; same price.
Action shown is per section.

"LO-CAP" SWITCHES



Low-capacity lever actuated switches (previously referred to as Federal Anti-Capacity switches). Specially designed flat actuator springs and round contact springs are wide spaced in a large molded insulating block. This construction eliminates the build-up of induced alternating current between springs. Rugged "U" shaped aluminum frame. Roller actuation for easy lever operation. Available in 2 and 3 position models, locking and non-locking types. Actuator springs have fine lver contacts rated at 1 amp, 100 watts, max., AC, non-inductive ad. Supplied with polished chrome escutcheon plate. Mounts ith two 6-32 flat head screws (not supplied). Mounting centers, 15/16". Depth behind panel, 3 7/16".

TWO-POSITION TYPES

Part No.*	Old Federal No.	Schematic Circuit†		Net Each, Lots of*			
		Pos. 1	Pos. 2	1-24	25-49	50-99	100-249
0206L‡	....	2 "C"		$5.04	$4.62	$4.20	$3.36

THREE-POSITION TYPES

0307L§	1425	1 "C"	1 "C"	$ 5.04	$ 4.62	$ 4.20	$3.36
0313L#	1424	2 "C"	2 "C"	5.52	5.06	4.60	3.68
0325L•	12494	4 "C"	4 "C"	12.60	11.55	10.50	8.40

For non-locking type, omit **"L"** in part no. †All center position off. DPDT. §SPDT-NO, each sec. #DPDT-NO, each sec. •4PDT-O, each sec.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST

"FEATHER LEVER" SWITCHES

C Lightweight, miniature lever switches: Locking or non-locking types; two or three positions. Nylon roller actuator for smoother, easier operation. Rugged steel frame withstands rough usage, shock and vibration. Nickel silver springs with fine silver contacts, rated at 2 amps, 200 watts, max., AC, non-inductive load. Mount in 5/16" O.D. panel hole on 7/16" centers in panels up to ⅛" thick. Depth behind panel, 1 9/32". Supplied with black plastic push-on knob and locknut; other colors available.

TWO POSITION TYPES

Part No.*	Schematic Cir.		Action	Net Each, Lots of*			
	Pos. 1	Pos. 2		1-24	25-49	50-99	100-249
29201	1 "A"		SPST-NO	$1.38	$1.27	$1.15	$0.92
29203	1 "C"		SPDT	1.59	1.46	1.33	1.06
29206	2 "C"		DPDT	1.92	1.76	1.60	1.28

THREE POSITION TYPES†

29303	1 "C"		SPDT-NO‡	$1.74	$1.60	$1.45	$1.16
29304	1 "A"	1 "A"	SPST-NO	1.80	1.65	1.50	1.20
29306	1 "C"	1 "C"	SPDT	2.04	1.87	1.70	1.36
29307	1 "C"	1 "C"	SPDT-NO‡	2.07	1.90	1.73	1.38
29312	2 "C"	2 "C"	DPDT	2.64	2.42	2.20	1.76

INTERCOM TALK-LISTEN SWITCHES

Lever locks on one side of neutral and operates non-locking on the other side.

29303T	1 "C"		SPDT-NO‡	$1.74	$1.60	$1.45	$1.16
29307T	1 "C"	1 "C"	SPDT-NO†	2.07	1.90	1.73	1.38

*Add suffix **L** to number (i.e., 29201**L**) for locking type; same price.
†Action shown is per section. ‡NO, center position off.

CONTOUR KNOBS FOR LEVER SWITCHES

D Attractive contour knobs designed for today's modern equipment. **Series M-1177** knobs have 8-32" tapped hole for use with "LEV-R" switches Series 3000, 12000 and 13000. **Series M-1178** knobs have 6-32" tapped hole for use with "TELEVER" switches Series 6000 and 16000.

Part Numbers		Color	Net Each, Lots of*			
			1-24	25-49	50-99	100-249
M-1177-1	M-1178-1	Red	$0.27	$0.248	$0.225	$0.18
M-1177-2	M-1178-2	Black	.27	.248	.225	.18
M-1177-15	M-1178-15	White	.27	.248	.225	.18

SPECIAL WRENCHES

E Designed to assemble knurled locknuts normally furnished with lever and button switches and jacks. **No. A-1070** wrench fits 15/32"-32 locknuts; **A-1071** for use with ¼"-32 knurled locknuts.

Part No.	Net Each, Lots of					
	1-24	25-49	50-99	100-249	250-499	500-999
A-1070	$4.74	$4.35	$3.95	$3.16	$3.00	$2.84
A-1071	4.74	4.35	3.95	3.16	3.00	2.84

PUSH-ON COLOR KNOBS

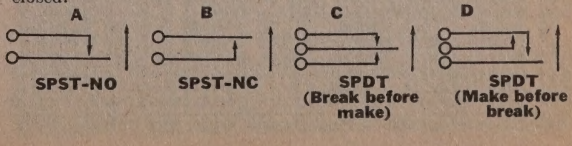
F Kit of molded plastic knobs for "Feather-Lever" switches; available in 10 colors as indicated. Knobs can be changed quickly by pulling off the present knob and pushing on new one; can be permanently mounted with plastic cement.

Part No.	Color	Net per Package of 10					
		1-24	25-49	50-99	100-249	250-499	500-999
K-108	*	$0.54	$0.50	$0.45	$0.36	$0.34	$0.32
K-109	Red	.54	.50	.45	.36	.34	.32
K-110	Black	.54	.50	.45	.36	.34	.32
K-111	Green	.54	.50	.45	.36	.34	.32
K-112	Blue	.54	.50	.45	.36	.34	.32
K-113	White	.54	.50	.45	.36	.34	.32
K-114	Brown	.54	.50	.45	.36	.34	.32
K-115	Orange	.54	.50	.45	.36	.34	.32
K-116	Yellow	.54	.50	.45	.36	.34	.32
K-117	Ivory	.54	.50	.45	.36	.34	.32
K-118	Gray	.54	.50	.45	.36	.34	.32

*One each of each color.

BASIC CONTACT FORMS

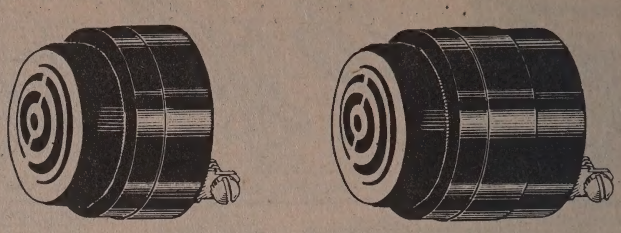
Switch circuitry can be described as combinations of the following basic schematic circuits. **NO**—normally open: **NC**—normally closed.



Alarms, Relays and Ballasts

SONALERT® ELECTRONIC SIGNALS

A major advance in the audible signal warning devices. Produces a penetrating sound of either 2900 Hz or 4500 Hz by utilizing the piezoelectric principle. All circuitry is solid state for maximum efficiency, lowest current requirement and high reliability. Silicon transistor oscillator drives piezoelectric transducer to produce the desired output tone. The physical characteristics of the transducer determines the output frequency; and, this cannot be altered by external means. Output intensity is directly proportional to input voltage and ranges from 68 dB at 6 VDC to 80 dB at 28 VDC. Draws only 14 mA max. (less than an indicator lamp), there are no mechanical points to arc and require maintenance, and there is no RF field generated. The Sonalert will operate in ambient temperatures from −20° C to +65° C; and, because of its solid state design, it is reliable, with a life expectancy of 10,000 hours. Used in computer systems in which stray RF could cause false readouts; in portable mine detectors in which ruggedness, minimum current and maximum reliability are prime considerations; also in aerospace projects requiring maximum efficiency and reliability. Sonalert is also used in volatile atmospheres where high density gas vapor could cause explosion. All have special silicon transistors and nylon case. Screw can be removed and solder or arkless quick-connect connections can be made. Max. panel thk. ¼″. No detailed MIL spec but widely used in military and aerospace applications; ask for Bulletin 9-398 for additional details. For a 48-page booklet on Sonalert uses, request Mallory Form 9-406.



STANDARD SONALERT SIGNALS

Catalog Number#	Sound Freq., Hz*	Operating Volts DC	Operating Volts AC	Oper. Cur., mA	Sound Intensity dB	Oper. Temp., ° C•	Case Lgth., In.	Wt., Oz.	Net Each
SC628	2900	6–28	....	3–14	68–80	−20+65	.812	1.25	$ 5.50
SC628H	4500	6–28	....	3–14	68–80	−20+65	.812	1.25	6.35
SC628P	2900†	6–28	....	3–14	68–80†	−20+65	1.375	2	9.95
SC628A	2900	6–28	6–28	3–14	68–80	−20+65	1.375	2	8.75
SC110	2900	30–110	30–110	4–16	68–80	−20+65	1.375	2	8.75
SC628HP	4500	6–28	....	3–14	68–80	−20+65	1.375	2	10.80
SC628AH	4500	6–28	6–28	3–14	68–80	−20+65	1.375	2	9.65
SC628AP	2900†	6–28	6–28	3–14	68–80†	−20+65	1 937	2.75	13.20
SC628AHP	4500†	6–28	6–28	3–14	68–80†	−20+65	1.937	2.75	14.10
SC110H	4500	30–110	30–110	4–16	68–80	−20+65	1.375	2	9.65
SC110P	2900†	30–110	30–110	4–16	68–80†	−20+65	1.937	2.75	13.20
SC110HP	4500†	30–110	30–110	4–16	68–80†	−20+65	1.937	2.75	14.10
SC628W‡	2900†	6–28	....	3–14	68–80†	−20+65	1.375	2	10.85
SC648	2900	48	....	14	80	−20+65	.812	1.25	6.95
SC250	2900	250	250	14	80	−20+65	1.375	2	9.45
SC6A24§	2900	6–28	....	3–14	68–80	−20+65	.812	1.25	5.95

*Tolerance: ±500 Hz. †Pulsating 2 to 5 Hz. ‡Warbler unit; use SC628 or SC628H. §With wire leads for automotive applications. #Suffix indicates: None=2900 Hz; **H**=4500 Hz; **A**=AC/DC model; **P**=Pulsating model; **W**=Warbling model. All are complete with special silicon transistors, standard black nylon nose ring and nylon case. •−40° C to +85° C available on special order. Order no. **CNRI** at **27c** for natural aluminum nose ring; **BNRI** at **58c** for black anodized aluminum ring or **PNRI** at **24c** for black plastic nose ring.

AMPERITE DELAY RELAYS, FLASHERS AND BALLAST TUBES

ALL RELAYS LISTED ARE UL RECOGNIZED

DELAY RELAYS

AMPERITE
DELAY
RELAY

Glass Enclosed—Hermetically Sealed—AC, DC or Pulsating Current. Circuits: SPST only—normally open or normally closed. Heater Wattage: The wattage consumed is approx. 2 W. Heaters can be operated continuously. **Contact Rating, Non-Inductive:** Standard Relays, 115 V, 3 amps AC; 220 V, 1 amp. Miniatures, 115 V, 2 amps; 220 V, 1 amp. For 220 V, use a 6500Ω, 5 W resistor in series with 115 V heater. **DC Voltage Breakdown:** 2–10 sec. types, 250 V contact-to-contact, 500 V heater-to-contact; 15–180 sec. types, 800 V. **Contact Drop:** 0.1 V, prox. at 1 amp. **Ambient Temperature:** Compensated for −55° C to +80° C; operable from −80° C to +125° C. Heaters of 26 V or less have better compensation than 115 V heater relays. **Life:** With 115 V, 2 amp AC non-inductive load, at least 250,000 operations. **Bases:** Standard, standard octal. Miniature, 9-pin miniature. Miniature types (designated by suffix T, e.g., 6N05T) available in delays from 2 to 120 sec. Net Each.................................... **$2⁴⁰**

DELAY TOLERANCES (AT 20° C)

Delay Seconds	Tol., Sec.	Delay Seconds	Tol., Sec.	Delay Seconds	Tol., Sec.	Delay Seconds	Tol., Sec.
2	±1½	10	±4	45	±10	120	±35
3	±1½	15	±4	60	±15	150	±35
5	±2½	20	±5	75	±15	180	±45
8	±3	30	±10	90	±20		

NORMALLY OPEN CONTACTS *

Del. Sec.†	HEATER VOLTAGES 2.5 V	5.0 V	6.3 V	12.6 V	26 V (22-30)	50 V	115 V
2	2N02	5N02	6N02	12N02	26N02	50N02	115N02
3	2N03	5N03	**6N03**	12N03	**26N03**	50N03	**115N03**
5	2N05	5N05	**6N05**	12N05	**26N05**	50N05	**115N05**
8	2N08	5N08	**6N08**	12N08	**26N08**	50N08	**115N08**
10	2N010	5N010	**6N010**	12N010	**26N010**	50N010	**115N010**
15	2N015	5N015	**6N015**	12N015	**26N015**	50N015	**115N015**
20	2N020	5N020	**6N020**	12N020	**26N020**	50N020	**115N020**
30	**2N030**	**5N030**	**6N030**	**12N030**	**26N030**	50N030	**115N030**
45	2N045	5N045	**6N045**	12N045	**26N045**	50N045	**115N045**
60	**2N060**	5N060	**6N060**	12N060	**26N060**	50N060	**115N060**
75	2N075	5N075	**6N075**	12N075	**26N075**	50N075	**115N075**
90	2N090	5N090	**6N090**	12N090	**26N090**	50N090	**115N090**
120	2N0120	5N0120	**6N0120**	12N0120	**26N0120**	50N0120	**115N0120**
150	2N0150	5N0150	**6N0150**	12N0150	**26N0150**	50N0150	**115N0150**
180	2N0180	5N0180	**6N0180**	12N0180	**26N0180**	50N0180	**115N0180**

*Bold face type indicates most popular types. †See tolerance table.

NORMALLY CLOSED CONTACTS *

Del. Sec.†	HEATER VOLTAGES 2.5 V	5.0 V	6.3 V	12.6 V	26 V (22-30)	50 V	115 V
2	2C2	5C2	6C2	12C2	26C2	50C2	115C2
3	2C3	5C3	**6C3**	12C3	**26C3**	50C3	**115C3**
5	2C5	5C5	**6C5**	12C5	**26C5**	50C5	**115C5**
8	2C8	5C8	**6C8**	12C8	**26C8**	50C8	**115C8**
10	2C10	5C10	**6C10**	12C10	**26C10**	50C10	**115C10**
15	2C15	5C15	**6C15**	12C15	**26C15**	50C15	**115C15**
20	2C20	5C20	**6C20**	12C20	**26C20**	50C20	**115C20**
30	2C30	5C30	**6C30**	12C30	**26C30**	50C30	**115C30**
45	2C45	5C45	**6C45**	12C45	**26C45**	50C45	**115C45**
60	2C60	5C60	**6C60**	12C60	**26C60**	50C60	**115C60**
75	2C75	5C75	**6C75**	12C75	**26C75**	50C75	**115C75**
90	2C90	5C90	**6C90**	12C90	**26C90**	50C90	**115C90**
120	2C120	5C120	**6C120**	12C120	**26C120**	50C120	**115C120**
150	2C150	5C150	**6C150**	12C150	**26C150**	50C150	**115C150**
180	2C180	5C180	**6C180**	12C180	**26C180**	50C180	**115C180**

*Bold face type indicates most popular types. †See tolerance table.

FLASHER RELAYS

Glass-enclosed, hermetically sealed. Operate approximately ⅓ on, ⅔ off. Percentage time on can be increased by reducing heater voltage. **Heater Wattage:** 1 watt. **Contact Rating, Non-Inductive:** ½ amp AC. **DC Voltage Breakdown:** 250 V contact-to-contact; 500 V heater-to-contact. **Bases:** Standard octal and 9-pin miniature. 115 V flashers obtainable in replacement quantities of 6 or less. Net Each.................................... **$2⁴⁰**

Flashes per Minute*	6.3 V Heater Octal	6.3 V Heater Min.	26 V Heater Octal	26 V Heater Min.	115 V Heater Octal	115 V Heater Min.
30±15	6F30	6F30T	26F30	26F30T	115F30	115F30T
45±15	6F45	6F45T	26F45	26F45T	115F45	115F45T
60±20	6F60	6F60T	26F60	26F60T	115F60	115F60T
75±20	6F75	6F75T	26F75	26F75T	....	....
90±25	6F90	6F90T	26F90	26F90T	....	....

*Flashes tolerance at 20° C.

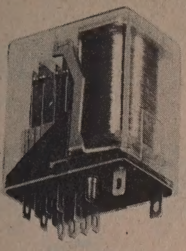
AC-DC BALLAST TUBES

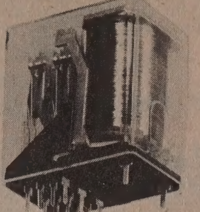
Light, compact, with no moving parts. Will withstand vibrations of 10G min. Hermetically sealed; unaffected by altitude or humidity changes. Current values of 60 mA to 5 amps. Threshold voltage 0.4 to 40 volts. Any number of tubes with the same voltage range can be operated in parallel; DO NOT use in series. Approx. average life, 2,000 hours. Will change up to 3% in current if aged 4–8 hours; very little thereafter.

STANDARD BALLAST TUBES—NET EACH $1.80
WRITE FOR COMPLETE LISTING

Arco Siemens GENERAL PURPOSE CRADLE RELAYS

GENERAL PURPOSE DC OPERATED CRADLE RELAYS WITH SINGLE OR BIFURCATED CONTACTS, PLUG-IN OR PRINTED CIRCUIT TYPE TERMINALS





ıe cradle relay originally designed by Siemens is now one of the
ost successful and widely used relays. Developed as a com-
unications relay sensitive enough to operate with minimum
ıwer consumption, but capable of switching up to 5 amp loads.
perfect interface for such applications as computer peripherals,
mmunications, industrial controls, alarms and signal equipment,
edical electronics and office machines. Versatile, compact relays
ature numerous contact configurations, high reliability, long life
low cost, plug-in and solder, or PC terminals. Interchangeable
th standard cradle relays. Magnetic latching and sensitive
rsions available. Silver gold-flashed contacts, single or bifurcated
pes. Brass gold-flashed terminals. Dust cover housing. **Rating:
or 5 Amps:** 28 VDC, 115 VAC resistive. **Max. Switching Rate:**
amps, 50/sec; 5 amps, 10/sec. **Contact Pressure:** 2 amps, 9 to 12
ams; 5 amps, 12 grams. **Test Voltage:** 1000 V rms. **Approx.
perate Time:** 7.5 msec. **Approx. Release Time:** 3 msec. **Mechani-
l Life:** 2 amps, 10^8; 5 amps, 10^7. **Max. Cont. Coil Power Dissipa-
on:** 2 watts. **Operating Ambient Temperature:** −55° C to
80° C. UL Listed, File No. E48393.

2-POLE GENERAL PURPOSE CRADLE RELAYS

art numbers listed are for relays with plug-in type terminals. To
der relays with printed circuit type terminals, change 7th char-
ter in part number from A to **G.** Example: V23028-**G**0412B104;
me prices. **Overall Sizes:** Plug-in terminals, .9448″ w. x .7480″ d.
1.4448″ h.; printed circuit terminals, .9448″ w. x .7480″ d. x
368″ h.

2PDT, 2-AMP, SINGLE CONTACTS RELAYS

Arco Siemens No. /23028-	DC Coil at 25° C			Net Each, Lots of				
	Nom. Volts	Pick-Up, VDC	Resis., Ohms	1-9	10-49	50-99	100-249	250-499
0412B104	6	4.5	52	$3.47	$3.12	$2.77	$2.59	$2.43
0417B104	12	9.0	185	3.47	3.12	2.77	2.59	2.43
0421B104	24	18.0	700	3.47	3.12	2.77	2.59	2.43
0426B104	48	36.0	2500	3.47	3.12	2.77	2.59	2.43
0403B104	115	86.0	15000	4.52	4.06	3.61	3.39	3.16

2PDT, 2-AMP, BIFURCATED CONTACTS RELAYS

0412C104	6	4.5	52	$3.83	$3.45	$3.07	$2.88	$2.68
0417C104	12	9.0	185	3.83	3.45	3.07	2.88	2.68
0421C104	24	18.0	700	3.83	3.45	3.07	2.88	2.68
0426C104	48	36.0	2500	3.83	3.45	3.07	2.88	2.68
0403C104	115	86.0	15000	4.88	4.40	3.91	3.66	3.42

2PDT, 5-AMP, SINGLE CONTACTS RELAYS

0412W089	6	4.5	52	$3.57	$3.21	$2.86	$2.68	$2.50
0417W089	12	9.0	185	3.57	3.21	2.86	2.68	2.50
0421W089	24	18.0	700	3.57	3.21	2.86	2.68	2.50
0426W089	48	36.0	2500	3.57	3.21	2.86	2.68	2.50
0403W089	115	86.0	15000	4.62	4.16	3.70	3.47	3.23

SOCKET TERMINALS, RETAINER FOR 2-POLE RELAYS

verall Sizes: Solder terminals, 1.041″ w. x .756″ d. x .339″ h.;
rinted circuit terminals, 1.047″ w. x .756″ d. x .496″ h.

Arco iemens No. V23154-	Description	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
Z1005	Socket solder terms.	$0.56	$0.50	$0.45	$0.42	$0.39
Z1001	Socket PC terminals	.56	.50	.45	.42	.39
Z1021	Retainer	.10	.09	.08	.07	.06

4-POLE GENERAL PURPOSE CRADLE RELAYS

art numbers listed are for 4-pole relays with plug-in type ter-
ninals. To order relays with printed circuit type terminals, change
th character in part number from B to **H.** Example: V23028-
I0412B110; same prices. **Overall Sizes:** Plug-in type, 1.1811″ w. x
480″ d. x 1.4448″ h.; printed circuit type, 1.811″ w. x .7480″ d. x
.368″ h.

4PDT, 2-AMP, SINGLE CONTACTS RELAYS

Arco Siemens No. V23028-	DC Coil at 25° C			Net Each, Lots of				
	Nom. Volts	Pick-Up, VDC	Resis., Ohms	1-9	10-49	50-99	100-249	250-499
0412B110	6	4.5	52	$3.78	$3.40	$3.02	$2.84	$2.65
0417B110	12	9.0	185	3.78	3.40	3.02	2.84	2.65
0421B110	24	18.0	700	3.78	3.40	3.02	2.84	2.65
0426B110	48	36.0	2500	3.78	3.40	3.02	2.84	2.65
0403B110	115	86.0	15000	4.83	4.35	3.86	3.62	3.38

4PDT, 2-AMP, BIFURCATED CONTACTS RELAYS

Arco Siemens No. V23028-	DC Coil at 25° C			Net Each, Lots of				
	Nom. Volts	Pick-Up, VDC	Resis., Ohms	1-9	10-49	50-99	100-249	250-499
B0412C110	6	4.5	52	$4.20	$3.78	$3.36	$3.15	$2.94
B0417C110	12	9.2	182	4.20	3.78	3.36	3.15	2.94
B0421C110	24	19.0	700	4.20	3.78	3.36	3.15	2.94
B0426C110	48	37.0	2500	4.20	3.78	3.36	3.15	2.94
B0403C110	115	106.0	15000	5.25	4.73	4.20	3.94	3.68

4PDT, 5-AMP, SINGLE CONTACTS RELAYS

B0412W075	6	4.5	52	$3.99	$3.59	$3.19	$2.99	$2.79
B0417W075	12	9.0	185	3.99	3.59	3.19	2.99	2.79
B0421W075	24	18.0	700	3.99	3.59	3.19	2.99	2.79
B0426W075	48	36.0	2500	3.99	3.59	3.19	2.99	2.79
B0403W075	115	86.0	15000	5.04	4.54	4.03	3.78	3.53

SOCKET TERMINALS, RETAINER FOR 4-POLE RELAYS

Overall Sizes: Solder terminals, 1.279″ w. x .756″ d. x .339″ h.; printed circuit terminals, 1.28″ w. x .756″ d. x .496″ h.

Arco Siemens No. V23154-	Description	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
Z1006	Socket solder terms.	$0.92	$0.83	$0.75	$0.69	$0.65
Z1002	Socket PC terminals	.92	.83	.75	.69	.65
Z1022	Retainer	.10	.09	.08	.07	.06

6-POLE GENERAL PURPOSE CRADLE RELAYS

Part numbers listed are for 6-pole relays with plug-in type terminals. To order relays with printed circuit type terminals, change 7th character in part number from C to **J.** Example: V23028-**J**0039B133; same prices. **Overall Sizes:** Plug-in type, 1.3779″ w. x .7480″ d. x 1.448″ h.; printed circuit type, 1.3779″ w. x .7480″ d. x 1.368″ h.

6PDT, 2-AMP, SINGLE CONTACTS RELAYS

Arco Siemens No. V23028-	DC Coil at 25° C			Net Each, Lots of				
	Nom. Volts	Pick-Up, VDC	Resis., Ohms	1-9	10-49	50-99	100-249	250-499
C0039B133	6	4.5	25	$4.62	$4.16	$3.70	$3.47	$3.23
C0040B133	12	9.0	90	4.62	4.16	3.70	3.47	3.23
C0041B133	24	18.0	430	4.62	4.16	3.70	3.47	3.23
C0042B133	48	36.0	1500	4.62	4.16	3.70	3.47	3.23
C0064B133	115	86.0	9000	5.15	4.63	4.12	3.86	3.60

6PDT, 5-AMP, SINGLE CONTACTS RELAYS

C0039W090	6	4.5	25	$5.04	$4.54	$4.03	$3.78	$3.53
C0040W090	12	9.0	90	5.04	4.54	4.03	3.78	3.53
C0041W090	24	18.0	430	5.04	4.54	4.03	3.78	3.53
C0042W090	48	36.0	1500	5.04	4.54	4.03	3.78	3.53
C0064W090	115	86.0	9000	5.57	4.94	4.45	4.18	3.90

6PDT, 5-AMP, BIFURCATED CONTACTS RELAYS

C0039C133	6	4.5	25	$5.15	$4.63	$4.12	$3.86	$3.60
C0040C133	12	9.0	90	5.15	4.63	4.12	3.86	3.60
C0041C133	24	18.0	430	5.15	4.63	4.12	3.86	3.60
C0042C133	48	36.0	1500	5.15	4.63	4.12	3.86	3.60
C0064C133	115	86.0	9000	5.67	5.10	4.54	3.97	3.97

SOCKET TERMINALS, RETAINER FOR 6-POLE RELAYS

Overall Sizes: Solder terminals, 1.576″ w. x .756″ d. x .339″ h.; printed circuit terminals, 1.516″ w. x .756″ d. x .496″ h.

Arco Siemens No. V23154-	Description	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
Z1006	Socket solder terms.	$0.92	$0.83	$0.75	$0.69	$0.65
Z1002	Socket PC terminals	.92	.83	.75	.69	.65
Z1022	Retainer	.10	.09	.08	.07	.06

CURRENT SENSITIVE RELAYS

2-POLE CURRENT SENSITIVE, PLUG-IN RELAYS

Arco Siemens No. V23028-	Contacts	Coil, Ohms, ±15%	Pick-Up, mA	Net Each, Lots of				
				1-9	10-49	50-99	100-249	250-499
A0536B104S	2PDT	1000	8.5	$3.81	$3.43	$3.05	$2.86	$2.67
A0426B104S	2PDT	2500	5.8	3.81	3.43	3.05	2.86	2.67
A0664B104S	2PDT	4750	4.1	4.39	3.95	3.51	3.30	3.08
A0004B104S	2PDT	9200	3.1	4.39	3.95	3.51	3.30	3.08
A0403B104S	2PDT	15000	2.6	5.19	4.67	4.15	3.90	3.63

4-POLE CURRENT SENSITIVE, PLUG-IN RELAYS

B0536B110S	4PDT	1000	13.0	$4.16	$3.74	$3.33	$3.12	$2.91
B0426B110S	4PDT	2500	8.4	4.16	3.74	3.33	3.12	2.91
B0664B110S	4PDT	4750	6.2	4.74	4.26	3.79	3.55	3.32
B0004B110S	4PDT	9200	4.5	4.74	4.26	3.79	3.55	3.32
B0403B110S	4PDT	15000	3.5	5.55	5.00	4.44	4.17	3.89

6-POLE CURRENT SENSITIVE, PLUG-IN RELAYS

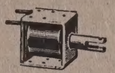
C0536B133S	6PDT	1000	16.0	$5.08	$4.58	$4.06	$3.81	$3.56
C0426B133S	6PDT	2500	10.0	5.08	4.58	4.06	3.81	3.56
C0664B133S	6PDT	4750	7.2	5.66	5.09	4.53	4.24	3.96
C0004B133S	6PDT	9200	5.0	5.66	5.09	4.53	4.24	3.96
C0403B133S	6PDT	15000	4.2	5.92	5.33	4.74	4.44	4.15

GUARDIAN® ELECTRIC Solenoids

Solenoids for intermittent or continuous duty. Intermittent types should not be energized for over 5 consecutive minutes, or be permitted to rise more than 85° C above 24° C ambient without sufficient cooling time. Plunger has slotted end with ⅛" dia. hole for coupling. In charts, (I) indicates intermittent duty type, (C) indicates continuous duty. **To Order, Specify:** Solenoid number; voltage and AC or DC; continuous or intermittent (for intermittent give cycle of operation, length of time current will pass through coil, etc.); max. stroke and pull required.

PULL TYPE AC AND DC SOLENOIDS

1A1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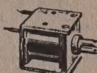
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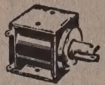
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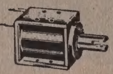
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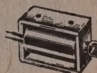
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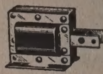
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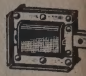
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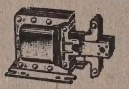
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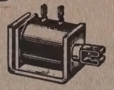
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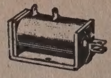
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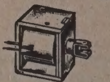
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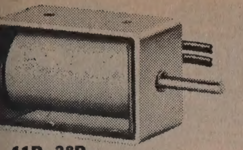
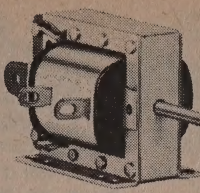
Guardian No.	Duty	Coil Voltage	Ohms	Lifts and Strokes		Body Size, Inches L. x W. x H.	Shpg. Wt., Oz.	Net Each, Lots of				
				Minimum	Maximum			1-24	25-49	50-99	100-249	250 Up
1A1	I	120 AC	300	8 oz. at ⅛"	2 oz. at ½"	1 5/32 x 15/16 x 1 1/16	4.5	$ 4.40	$3.96	$3.74	$3.08	$2.86
1A1	C	120 AC	675	3 oz. at ⅛"	0.5 oz. at ⅜"	1 5/32 x 15/16 x 1 1/16	4.5	4.40	3.96	3.74	3.08	2.86
2†	I	120 AC	60	33 oz. at ⅛"	9 oz. at ⅞"	1⅝ x 1 7/16 x 1⅝	10	5.96	5.36	5.07	4.17	3.87
2†	C	120 AC	166	10.5 oz. at ⅛"	3 oz. at ⅞"	1⅝ x 1 7/16 x 1⅝	10	6.04	5.44	5.13	4.23	3.93
2HD†	I	120 AC	36	38 oz. at ⅛"	16 oz. at ¾"	1 13/16 x 1 7/16 x 1 11/16	13	10.21	9.19	8.68	7.15	6.64
2HD†	C	120 AC	113	17 oz. at ⅛"	4 oz. at ¾"	1 13/16 x 1 7/16 x 1 11/16	13	10.21	9.19	8.68	7.15	6.64
2HD†	I	24 DC	20	100 oz. at ⅛"	5 oz. at ¾"	1 13/16 x 1 7/16 x 1 11/16	13	10.52	9.47	8.94	7.36	6.84
2HD†	C	24 DC	64	50 oz. at ⅛"	1 oz. at ⅝"	1 13/16 x 1 7/16 x 1 11/16	13	10.52	9.47	8.94	7.36	6.84
3HD†	I	24 DC	21	160 oz. at 1/16"	8 oz. at ¾"	1 25/32 x 1 7/16 x 1⅝	14	7.07	6.36	6.01	4.95	4.60
3HD†	C	24 DC	52	100 oz. at 1/16"	3 oz. at ¾"	1 25/32 x 1 7/16 x 1⅝	14	7.07	6.36	6.01	4.95	4.60
4†	I	120 AC	37	24 oz. at ⅛"	22 oz. at 1"	2 1/16 x 1 7/16 x 1⅝	14.5	7.10	6.39	6.04	4.97	4.62
4†	C	120 AC	133	8 oz. at ⅛"	6 oz. at 1"	2 1/16 x 1 7/16 x 1⅝	14.5	7.10	6.39	6.04	4.97	4.62
4†	I	24 DC	15	110 oz. at ⅛"	4 oz. at 1"	2 1/16 x 1 7/16 x 1⅝	14.5	7.10	6.39	6.04	4.97	4.62
4†	C	24 DC	54	55 oz. at ⅛"	2.5 oz. at ⅞"	2 1/16 x 1 7/16 x 1⅝	14.5	7.10	6.39	6.04	4.97	4.62
4†	I	110 DC	346	90 oz. at ⅛"	4 oz. at 1"	2 1/16 x 1 7/16 x 1⅝	14.5	7.10	6.39	6.04	4.97	4.62
4†	C	110 DC	1300	55 oz. at ⅛"	2.5 oz. at ⅞"	2 1/16 x 1 7/16 x 1⅝	14.5	7.10	6.39	6.04	4.97	4.62
4HD†	I	120 AC	15	107 oz. at 1/16"	30 oz. at 1¼"	2 3/16 x 1 7/16 x 1⅝	15	7.55	6.80	6.42	5.29	4.91
4HD†	C	120 AC	53	26 oz. at ⅛"	8 oz. at 1¼"	2 3/16 x 1 7/16 x 1⅝	15	7.55	6.80	6.42	5.29	4.91
4HD†	I	24 DC	15	156 oz. at ⅛"	21 oz. at ¾"	2 3/16 x 1 7/16 x 1⅝	15	7.55	6.80	6.42	5.29	4.91
4HD†	C	24 DC	50	70 oz. at ⅛"	4 oz. at ¾"	2 3/16 x 1 7/16 x 1⅝	15	7.55	6.80	6.42	5.29	4.91
4HD†	I	110 DC	350	156 oz. at ⅛"	21 oz. at ¾"	2 3/16 x 1 7/16 x 1⅝	15	7.55	6.80	6.42	5.29	4.91
4HD†	C	110 DC	1200	70 oz. at ⅛"	4 oz. at ¾"	2 3/16 x 1 7/16 x 1⅝	15	7.55	6.80	6.42	5.29	4.91
9	I	120 AC	220	17 oz. at ⅛"	8 oz. at ½"	1 5/32 x 1 1/16 x 1	4	4.22	3.80	3.59	2.95	2.74
9	C	120 AC	350	11 oz. at ⅛"	4 oz. at ½"	1 5/32 x 1 1/16 x 1	4	4.22	3.80	3.59	2.95	2.74
9	I	24 DC	52	16 oz. at ⅛"	1 oz. at ½"	1 5/32 x 1 1/16 x 1	4	4.06	3.65	3.45	2.84	2.64
9	C	24 DC	90	10 oz. at ⅛"	1 oz. at 7/16"	1 5/32 x 1 1/16 x 1	4	4.06	3.65	3.45	2.84	2.64
10	I	120 AC	74	40 oz. at ⅛"	25 oz. at ½"	1 1/16 x 1⅜ x 1 13/32	6.5	4.38	3.94	3.72	3.07	2.85
10	C	120 AC	172	20 oz. at ⅛"	10 oz. at ½"	1 1/16 x 1⅜ x 1 13/32	6.5	4.38	3.94	3.72	3.07	2.85
10	I	24 DC	37	26 oz. at ⅛"	4 oz. at ½"	1 1/16 x 1⅜ x 1 13/32	6.5	4.38	3.94	3.72	3.07	2.85
10	C	24 DC	69	16 oz. at ⅛"	1 oz. at ½"	1 1/16 x 1⅜ x 1 13/32	6.5	4.38	3.94	3.72	3.07	2.85
11†	I	24 AC	3.5	25 oz. at ⅛"	6 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	C	24 AC	8	12 oz. at ⅛"	1 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	I	120 AC	85	25 oz. at ⅛"	6 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	C	120 AC	200	12 oz. at ⅛"	1 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	I	6 DC	2	40 oz. at ⅛"	2 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	C	6 DC	4.5	25 oz. at ⅛"	1 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	I	24 DC	31	40 oz. at ⅛"	2 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
11†	C	24 DC	72	25 oz. at ⅛"	1 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.16	3.74	3.54	2.91	2.70
12†	I	120 AC	100	32 oz. at ⅛"	4 oz. at 1"	1⅝ x 1¼ x 1 7/16	6	5.90	5.31	5.02	4.13	3.84
12†	C	120 AC	150	22 oz. at ⅛"	3 oz. at ⅞"	1⅝ x 1¼ x 1 7/16	6	5.90	5.31	5.02	4.13	3.84
14†	I	120 AC	11	110 oz. at ⅛"	52 oz. at 1½"	2 7/16 x 1 15/16 x 2 1/16	9	8.24	7.42	7.00	5.77	5.36
14†	C	120 AC	18	65 oz. at ⅛"	37 oz. at 1½"	2 7/16 x 1 15/16 x 2 1/16	9	8.24	7.42	7.00	5.77	5.36
16†	I	120 AC	41	90 oz. at ⅛"	30 oz. at ¾"	1⅝ x 1¼ x 1½	7.5	5.96	5.36	5.07	4.17	3.87
16†	C	120 AC	85	50 oz. at ⅛"	10 oz. at ¾"	1⅝ x 1¼ x 1½	7.5	5.96	5.36	5.07	4.17	3.87
16†	I	240 AC	200	90 oz. at ⅛"	30 oz. at ¾"	1⅝ x 1¼ x 1½	7.5	6.00	5.40	5.10	4.20	3.90
16†	C	240 AC	350	50 oz. at ⅛"	10 oz. at ¾"	1⅝ x 1¼ x 1½	7.5	6.00	5.40	5.10	4.20	3.90
18†	I	120 AC	8.8	280 oz. at ⅛"	80 oz. at 1"	2½ x 1 13/16 x 2 3/32	16.5	7.82	7.04	6.65	5.47	5.08
18†	C	120 AC	19.7	145 oz. at ⅛"	40 oz. at 1"	2½ x 1 13/16 x 2 3/32	16.5	7.82	7.04	6.65	5.47	5.08
18†	I	240 AC	45	280 oz. at ⅛"	80 oz. at 1"	2½ x 1 13/16 x 2 3/32	16.5	7.94	7.15	6.75	5.56	5.16
18†	C	240 AC	78	145 oz. at ⅛"	40 oz. at 1"	2½ x 1 13/16 x 2 3/32	16.5	7.94	7.15	6.75	5.56	5.16
22†	I	6 DC	4	24 oz. at 1/16"	1 oz. at ⅜"	1 5/32 x ¾ x ¾	2.5	3.46	3.11	2.94	2.42	2.25
22†	C	6 DC	9	13 oz. at 1/16"	0.5 oz. at ¼"	1 5/32 x ¾ x ¾	2.5	3.46	3.11	2.94	2.42	2.25
22†	I	24 DC	60	24 oz. at 1/16"	1 oz. at 7/16"	1 5/32 x ¾ x ¾	2.5	3.46	3.11	2.94	2.42	2.25
22†	C	24 DC	144	13 oz. at 1/16"	0.5 oz. at ⅜"	1 5/32 x ¾ x ¾	2.5	3.46	3.11	2.94	2.42	2.25
24†	I	120 AC	310	16 oz. at 1/16"	3 oz. at ⅝"	1¼ x 27/32 x 1	3	4.02	3.62	3.42	2.81	2.61
24†	C	120 AC	500	10.5 oz. at 1/16"	2 oz. at ⅝"	1¼ x 27/32 x 1	3	4.02	3.62	3.42	2.81	2.61
24†	I	24 DC	52	36 oz. at 1/16"	3 oz. at ½"	1¼ x 27/32 x 1	3	4.02	3.62	3.42	2.81	2.61
24†	C	24 DC	114	18 oz. at 1/16"	0.5 oz. at ½"	1¼ x 27/32 x 1	3	4.02	3.62	3.42	2.81	2.61
26†	I	120 AC	140	28 oz. at 1/16"	3 oz. at ⅞"	1¾ x 27/32 x 1 3/16	4	4.24	3.82	3.60	2.97	2.76
26†	C	120 AC	250	13 oz. at 1/16"	4 oz. at ⅝"	1¾ x 27/32 x 1 3/16	4	4.24	3.82	3.60	2.97	2.76
26†	I	24 DC	33	65 oz. at 1/16"	3 oz. at ¾"	1¾ x 27/32 x 1 3/16	4	4.02	3.62	3.42	2.81	2.61
26†	C	24 DC	85	36 oz. at 1/16"	1.5 oz. at ½"	1¾ x 27/32 x 1 3/16	4	4.02	3.62	3.42	2.81	2.61
28†	I	24 AC	7.5	35 oz. at 1/16"	5 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	3.72	3.35	3.16	2.60	2.42
28†	C	24 AC	17.4	20 oz. at 1/16"	2.5 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	3.72	3.35	3.16	2.60	2.42
28†	I	120 AC	220	35 oz. at 1/16"	5 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	4.02	3.62	3.42	2.81	2.61
28†	C	120 AC	400	20 oz. at 1/16"	2.5 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	4.02	3.62	3.42	2.81	2.61
28†	I	6 DC	3.3	35 oz. at 1/16"	2 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	3.70	3.33	3.15	2.59	2.41
28†	C	6 DC	7.7	24 oz, at 1/16"	1 oz. at ⅜"	1⅛ x 1 7/32 x 1 3/16	3.5	3.70	3.33	3.15	2.59	2.41
28†	I	12 DC	13	35 oz. at 1/16"	2 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	3.70	3.33	3.15	2.59	2.41
28†	C	12 DC	27	24 oz. at 1/16"	1 oz. at ⅜"	1⅛ x 1 7/32 x 1 3/16	3.5	3.70	3.33	3.15	2.59	2.41
28†	I	24 DC	50	35 oz. at 1/16"	2 oz. at ½"	1⅛ x 1 7/32 x 1 3/16	3.5	3.70	3.33	3.15	2.59	2.41
28†	C	24 DC	104	24 oz. at 1/16"	1 oz. at ⅜"	1⅛ x 1 7/32 x 1 3/16	3.5	3.70	3.33	3.15	2.59	2.41
34†	I	120 AC	400	15 oz. at 1/16"	1 oz. at ½"	1⅛ x ¾ x 1 5/64	3	3.30	2.97	2.81	2.31	2.15
34†	C	120 AC	865	7 oz. at 1/16"	0.5 oz. at ½"	1⅛ x ¾ x 1 5/64	3	3.30	2.97	2.81	2.31	2.15
34†	I	24 DC	66	17 oz. at 1/16"	1 oz. at 7/16"	1⅛ x ¾ x 1 5/64	3	3.30	2.97	2.81	2.31	2.15
34†	C	24 DC	145	8.5 oz. at 1/16"	0.5 oz. at ¼"	1⅛ x ¾ x 1 5/64	3	3.30	2.97	2.81	2.31	2.15

†RECOGNIZED UNDER THE COMPONENT PROGRAM OF UNDERWRITERS LABORATORIES INC.

GUARDIAN® *ELECTRIC* Solenoids


11P, 28P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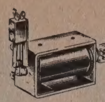
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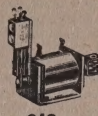
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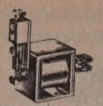
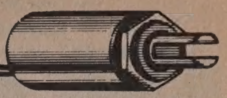
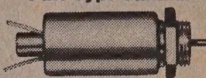

28S


Pull Type Tubular


Push Type Tubular

ermittent types should not be energized for more than 5 con-utive minutes, or be permitted to rise more than 85° C above C ambient without sufficient cooling time between operation les or periods of energization. Continuous type have high coil resistance and will not rise more than 85° C above 24° C ambient temperature when operated within maximum lift and stroke ratings. **To Order, Specify:** Solenoid number; voltage and AC or DC; continuous or intermittent.

PUSH TYPE AC AND DC SOLENOIDS

sh versions of popular solenoids. Types 11P and 28P are box me design. 16P and 18P are laminated AC types. Push rods are equal to maximum stroke length. (I) indicates intermittent duty type, (C) indicates continuous duty.

uar-ian lo.†	Duty	Coil Volt-age	Ohms	Lifts and Strokes		Body Size, Inches L. x W. x H.	Shpg. Wt., Oz.	Net Each, Lots of				
				Minimum	Maximum			1-24	25-49	50-99	100-249	250 Up
1P	I	24 AC	3.5	20 oz. at ⅛"	4.8 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	$4.82	$4.34	$4.10	$3.37	$3.13
1P	C	24 AC	8	9.6 oz. at ⅛"	0.8 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
1P	I	120 AC	85	20 oz. at ⅛"	4.8 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
1P	C	120 AC	200	9.6 oz. at ⅛"	0.8 oz. at 1"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
1P	I	6 DC	2	32 oz. at ⅛"	1.6 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
1P	C	6 DC	4.5	20 oz. at ⅛"	0.8 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
1P	I	24 DC	31	32 oz. at ⅛"	1.6 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
1P	C	24 DC	72	20 oz. at ⅛"	0.8 oz. at ¾"	1⅞ x 15/16 x 1 3/16	7.5	4.82	4.34	4.10	3.37	3.13
6P	I	120 AC	41	90 oz. at ⅛"	30 oz. at ¾"	1⅝ x 1¼ x 1½	7.5	6.84	6.16	5.81	4.79	4.45
6P	C	120 AC	85	50 oz. at ⅛"	10 oz. at ¾"	1⅝ x 1¼ x 1½	7.5	6.84	6.16	5.81	4.79	4.45
8P	I	120 AC	8.8	280 oz. at ⅛"	80 oz. at 1"	2½ x 1 13/16 x 2 3/16	16.5	9.22	8.30	7.84	6.45	5.99
8P	C	120 AC	19.7	145 oz. at ⅛"	40 oz. at 1"	2½ x 1 13/16 x 2 3/16	16.5	9.22	8.30	7.84	6.45	5.99
28P	I	24 AC	7.5	28 oz. at 1/16"	4 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.25	3.83	3.61	2.98	2.76
28P	C	24 AC	17.4	16 oz. at 1/16"	2 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.25	3.83	3.61	2.98	2.76
28P	I	120 AC	220	28 oz. at 1/16"	4 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.55	4.10	3.87	3.19	2.96
28P	C	120 AC	400	16 oz. at 1/16"	2 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.55	4.10	3.87	3.19	2.96
28P	I	6 DC	3.3	28 oz. at 1/16"	1.6 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.10	3.69	3.49	2.87	2.67
28P	C	6 DC	7.7	19 oz. at 1/16"	0.8 oz. at ⅜"	1⅛ x 15/16 x 1 3/16	3.5	4.10	3.69	3.49	2.87	2.67
28P	I	12 DC	13	28 oz. at 1/16"	1.6 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.10	3.69	3.49	2.87	2.67
28P	C	12 DC	27	19 oz. at 1/16"	0.8 oz. at ⅜"	1⅛ x 15/16 x 1 3/16	3.5	4.10	3.69	3.49	2.87	2.67
28P	I	24 DC	50	28 oz. at 1/16"	1.6 oz. at ½"	1⅛ x 15/16 x 1 3/16	3.5	4.10	3.69	3.49	2.87	2.67
28P	C	24 DC	104	19 oz. at 1/16"	0.8 oz. at ⅜"	1⅛ x 15/16 x 1 3/16	3.5	4.10	3.69	3.49	2.87	2.67

AC AND DC SOLENOID SWITCHES

ardian Box-Frame solenoids 11 and 28 as well as U-Frame 24 ve been functionally enhanced by the addition of a SPDT switch uated by a push rod affixed to the plunger. Respective solenoid switches are 11S, 28S and 24S. All switches are rated 10 amps at 120 VAC. **To Order, Specify:** Solenoid switch number; voltage and AC or DC; continuous or intermittent.

1S	I	120 AC	85	25 oz. at ⅛"	6 oz. at 1"	1⅞ x 15/16 x 2	7.5	$5.27	$4.74	$4.48	$3.69	$3.43
1S	C	120 AC	200	12 oz. at ⅛"	1 oz. at 1"	1⅞ x 15/16 x 2	7.5	5.27	4.74	4.48	3.69	3.43
1S	I	24 DC	31	40 oz. at ⅛"	2 oz. at ¾"	1⅞ x 15/16 x 2	7.5	5.27	4.74	4.48	3.69	3.43
1S	C	24 DC	72	25 oz. at ⅛"	1 oz. at ¾"	1⅞ x 15/16 x 2	7.5	5.27	4.74	4.48	3.69	3.43
24S	I	24 DC	52	36 oz. at 1/16"	3 oz. at ⅝"	1¼ x 27/32 x 1 29/32	3	8.17	7.35	6.94	5.72	5.31
24S	C	24 DC	114	18 oz. at 1/16"	0.5 oz. at ⅝"	1¼ x 27/32 x 1 29/32	3	8.17	7.35	6.94	5.72	5.31
28S	I	24 DC	50	35 oz. at 1/16"	2 oz. at ½"	1⅛ x 1 3/16 x 2	3.5	4.64	4.18	3.94	3.25	3.02
28S	C	24 DC	104	24 oz. at 1/16"	1 oz. at ⅜"	1⅛ x 1 3/16 x 2	3.5	4.64	4.18	3.94	3.25	3.02

TUBULAR SOLENOIDS

oice of either pull or push types with Class "A" (105° C) insulation material and 6" leads. Mounting bracket supplied.

24 VDC PULL TYPE

e, 10 million operations min. at rated d.

uardian umber†	Ohms	W	Lift, Oz.§	Net Ea. 1-24*
.5X9*	57	10	11	$4.80
.5X9	260	2	4.5	4.86
X7*	80	7	10	4.90
X7	240	2.4	4	5.00
X12*	38	15	15	5.04
X12	160	3.5	8	5.10
X16*	24	20	17	5.52
X16	145	4	10	5.64
X12*	25	22	30	5.36
X12	165	3.5	16	5.47
X9*	30	19	50	5.98
X9	145	4	13	6.10
X16*	15	38	80	6.54
X16	105	5.5	32	6.58
2X13*	14	40	150	8.82
2X13	85	7	48	8.90
2X19*	9.5	60	165	9.08
2X19	59	10	80	9.44

24 VDC PUSH TYPE

Non-magnetic metal push rod length equals max. stroke length.

Guardian Number†	Ohms	W	Lift, Oz.‡	Net Ea. 1-24*
TP3.5X9*	57	10	9	$ 5.78
TP3.5X9	260	2	3.5	5.82
TP4X7*	80	7	5	6.12
TP4X7	240	2.4	1.5	6.22
TP4X12*	38	15	12	6.02
TP4X12	160	3.5	6	6.26
TP4X16*	24	20	14	6.68
TP4X16	145	4	8	6.72
TP6X12*	25	22	25	6.10
TP6X12	165	3.5	13	6.20
TP8X9*	30	19	40	7.56
TP8X9	145	4	11	7.68
TP8X16*	15	38	65	7.52
TP8X16	105	5.5	26	7.66
TP12X13*	14	40	120	9.64
TP12X13	85	7	48	9.68
TP12X19*	9.5	60	130	10.82
TP12X19	59	10	65	10.90

12 VDC PULL TYPE

Guardian Number†	Ohms	W	Lift, Oz.§	Net Ea. 1-24*
T3.5X9*	14	10	11	$4.80
T3.5X9	80	2	4	4.86
T4X7*	20	7	10	4.90
T4X7	60	2.4	4	5.00
T4X12*	10	15	15	5.04
T4X12	41	3.5	8	5.10
T4X16*	6	20	17	5.52
T4X16	36	4	10	5.64
T6X12*	6.5	22	30	5.36
T6X12	41	3.5	16	5.47
T8X9*	7.5	19	50	5.98
T8X9	36	4	13	6.10
T8X16*	2.7	38	80	6.54
T8X16	26	5.5	32	6.58
T12X13*	3.6	40	150	8.82
T12X13	20	7	48	8.90
T12X19*	2.4	60	165	9.08
T12X19	14	10	80	9.44

12 VDC PUSH TYPE

uardian umber†	Ohms	W	Lift, Oz.‡	Net Each, Lots of				
				1-24	25-49	50-99	100-249	250 Up
3.5X9*	14	10	9	$5.78	$5.20	$4.91	$4.05	$3.77
3.5X9	80	2	3	5.82	5.24	4.95	4.07	3.78
4X16*	6	20	14	6.68	6.01	5.68	4.68	4.34
4X16	36	4	8	6.72	6.05	5.71	4.70	4.37
6X12*	6.5	22	25	6.10	5.49	5.19	4.27	3.97
6X12	41	3.5	13	6.20	5.58	5.27	4.34	4.03
8X16*	2.7	38	65	7.52	6.77	6.39	5.26	4.89
8X16	26	5.5	26	7.66	6.87	6.51	5.36	4.98

ntermittent duty; all others continuous duty type. §At min. roke; 1/32", T3 and T4; 1/16", T6 and T8; ⅛", T12 types. Maximum e and stroke ratings on request.

‡STROKE LENGTH

Lift given is for min. stroke; lift for max. stroke on request.

Type TP-	Min.	Max.	Type TP-	Min.	Max.	Type TP-	Min.	Max.
3.5X9*	1/32"	½"	4X16*	1/32"	1⅛"	8X16*	1/16"	1¼"
3.5X9	1/32"	¼"	4X16	1/32"	¾"	8X16	1/16"	⅝"
4X7*	1/16"	¼"	6X12*	1/16"	⅞"	12X13*	⅛"	⅞"
4X7	1/16"	⅛"	6X12	1/16"	½"	12X13	⅛"	¾"
4X12*	1/32"	¾"	8X9*	1/16"	9/16"	12X19*	⅛"	1½"
4X12	1/32"	5/16"	8X9	1/16"	⅜"	12X19	⅛"	1"

★QUANTITY DISCOUNTS

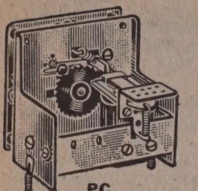
1-24, Net; 25-49, −10%; 50-99, −15%; 100-249, −30%; 250 Up, −35%.

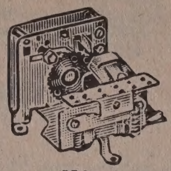
†SOLENOIDS SHOWN ON THIS PAGE ARE RECOGNIZED UNDER THE COMPONENT PROGRAM OF UNDERWRITERS LABORATORIES INC.

GUARDIAN® ELECTRIC Relays

STEPPING RELAYS

CONTINUOUS ROTATION

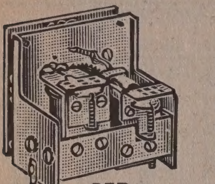

PC


MC

Type PC—Micro-finished shaft and Oilite shaft bearing. Beryllium copper pawl control shutter. Selection contacts terminated on phenolic board; solder beaded. Mechanical life expectancy estimated 4,000,000 steps. Has 40-point ratchet with 40 active contacts, including zero position. Size, 3⅜₂″ lg. x 3⅞₂″ w. x 3⅟₃₂″ h. Shipping Weight, 17 oz.

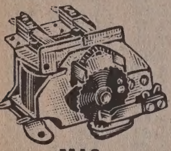
Type MC—A smaller, continuous operation stepper similar to above; has life expectancy of 2,000,000 steps. Has 24-point ratchet with 24 active contacts, including zero. Size, 2¹⁵⁄₁₆″ lg. x 3⁵⁄₁₆″ w. x 2³⁄₁₆″ h. Shipping Weight, 9½ oz.

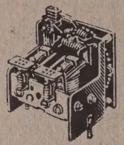
ELECTRICAL RESET


PER

Type PER—Micro-finished shaft and Oilite shaft bearing. Positive mechanical stops limit total number of steps in any single unit. Returns automatically to start position when reset coil is energized. Has 40-point ratchet with 36 active contacts including zero position. Size, 3⁵⁄₃₂″ lg. x 3⁷⁄₃₂″ w. x 3¹⁄₃₂″ h. Shipping Wt., 22 oz.

ADD AND SUBTRACT


MAS


PAS

Type MAS—Midget stepper with non-ferrous shutters controlling pawl motion. Steps one step at a time in either direction, depending on which of the two coils is energized. Has 30-point ratchet, with zero position switch opened at home position. Size, 3¼″ lg. x 3⅛″ w. x 1¹⁵⁄₁₆″ h. Shpg. Wt., 11 oz.

Type PAS—Similar in operation to MAS, but larger. Has 40 points and 40 active contacts. Supplied with 45-amp, quick-connect terminals and Form "C" cam switch. Size, 3⁵⁄₃₂″ lg. x 3⁷⁄₃₂″ w. x 3⁹⁄₁₆″ h. Shipping Weight, 22 oz.

STEPPING RELAY DATA CHART

All units rated 120 VAC coil voltage; will operate satisfactorily at 15% below or 10% above. Auxiliary switches may be connected in series with the commutator of the selecting finger and added to the step and/or reset magnet to increase the normal contact rating of 1.5 A, 120 VAC 60 Hz resistive. Contact fingers insulated from shaft. All units are intermittent duty rated at 10% duty cycle (out of each hour); single period maximum energization, 5 minutes.

Guardian Number	VA	W	‡	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
PC-120AC	35	20	40	$24.92	$22.43	$21.18	$17.44	$16.20
MC-120AC	30	17	24	18.45	16.61	15.68	12.92	12.04
PER/40-120AC	60*	35†	40	32.80	29.52	27.88	22.96	21.32
PER/52-120AC	115*	65†	52	35.90	32.31	30.52	25.13	23.34
MAS-120AC	12	9	30	24.84	22.36	21.11	17.39	16.15
PAS-120AC	60	35	40	34.46	31.01	29.29	24.12	22.40

*Stepping coil; 10 VA, reset coil. †Stepping coil; 7 W reset coil. ‡Number of points.

SERIES 840L-845L ON/OFF STEPPER

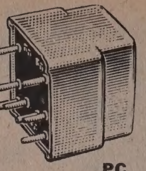
Improved, compact design is impulse operated for positive on/off control of positioning devices, remote controls, lighting, etc. Impulses as short as 20 msec energizes coil to reverse position of switches. Holds last position of switch with coil de-energized. Contacts rated 10 amps, 120 VAC, 60 Hz non-inductive; requires 8.2 VA. Solder lug terminals for coils and contacts. Single hole mounting tapped 8-32NC-2B. Shpg. Wt., 5.2 oz.

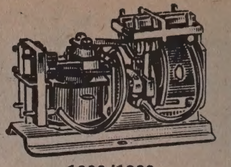
Guardian Number*		Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
840L-C-24A	845L-C-12D	$5.86	$5.27	$4.98	$4.10	$3.81
840L-2C-24A	845L-2C-12D	7.07	6.36	6.01	4.95	4.60
840L-4C-24A	845L-4C-12D	10.10	9.09	8.59	7.07	6.57
840L-C-120A	845L-C-24D	5.86	5.27	4.98	4.10	3.81
840L-2C-120A	845L-2C-24D	7.07	6.36	6.01	4.95	4.60
840L-4C-120A	845L-4C-24D	10.10	9.09	8.59	7.07	6.57

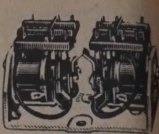
*Suffix indicates voltage (i.e., **-24A,** 24 VAC; **-12D,** 12 VDC).

INTERLOCKING AC/AC RELAYS

Two interlocking AC relays on sturdy metal frame bracket. For continuous circuit maintenance without coil power consumption. Electrically pulse operated, 4PDT switching; mechanical hold, electrical release. Contacts rated 10 amps, 120 VAC, 60 Hz non-inductive. Coil resis., 1100 ohms. Shipping Weight, 5.5 oz. **Guardian Type 1200/1200-4C-120A** (On metal frame, 1⅞″ x 1¾″ x 2⅞″) or **1200/1200UB-4C-120A** (U-bracket, 1⁵⁄₁₆″ x 2³¹⁄₃₂″ x 1⅞″) Net Each, Lots of 1–24.......**$12.69;** 25–49.......**$11.42** 50–99....**$10.79;** 100–249....**$8.88;** 250 Up.... **8.25**


PC


1200/1200

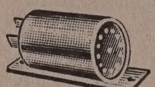

1200/1200U

PLUG-IN PC RELAYS

For low power, solid state circuitry; DPDT switching. Contacts rated 5 amps at 120 VAC, 60 Hz resistive. Normal power, 1 watt. Terminals on 0.1″ grid for soldering onto standard PC board. Coil resistance, 3500 ohms, 120 VAC, 60 Hz. Life, over 10 million operations. Size, 1³⁄₃₂″ w. x 1¹⁄₁₆″ d. x 1″ h.

Guardian Number	Input	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
1360PC-2C-24A	24 VAC	$3.74	$3.37	$3.18	$2.62	$2.43
1360PC-2C-120A	120 VAC	3.74	3.37	3.18	2.62	2.43
1365PC-2C-6D	6 VDC	3.74	3.37	3.18	2.62	2.43
1365PC-2C-12D	12 VDC	3.74	3.37	3.18	2.62	2.43
1365PC-2C-24D	24 VDC	3.74	3.37	3.18	2.62	2.43

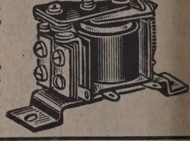
ROTOMITE STEPPER—DC



Compact, completely metal cased. Continuous rotation on 12 positions up to 20 steps per second. Contact rating 3 amps resistive, 1 amp inductive (50% PF). DC coils are continuous duty. Over 1,000,000 operations. Size, 1⁵⁄₃₂″ dia., 3″ lg. base, 1³⁄₁₆″ h., overall. Shipping Weight, 5 oz.

Guardian Number	Pos.	VDC	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
705-12P-6D	12	6	$7.70	$6.93	$6.55	$5.39	$5.01
705-12P-12D	12	12	7.70	6.93	6.55	5.39	5.01
705-12P-24D	12	24	7.70	6.93	6.55	5.39	5.01

HEAVY DUTY AC RELAYS

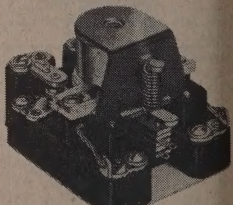


Rugged unit breaks up to 20 amps at 240 V. Armature equipped with phenolic contact mounting block carrying ⁵⁄₁₆″ dual contacts. Phenolic tested at 1500 V breakdown to ground. Contacts are silver alloy. Contact rating 20 amps at 60 Hz 240 V non-inductive load. Relay is available in SPST-NO only. Two 8-32 mtg. holes on 2¹⁹⁄₃₂″ centers. Size, 3″ x 1⅞″ x 1¾″. Shpg. Wt., 5.5 oz.

Guardian Number	Volts AC	Coil Ohms	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
220-A-24A	24	25	$7.00	$6.30	$5.95	$4.90	$4.55
220-A-120A	120	600	7.22	6.50	6.14	5.05	4.69
220-A-240A	240	2500	7.60	6.84	6.46	5.32	4.94

POWER RELAYS

SERIES 2600U AND 2605U DPDT—25 AMPS



Compact power relays with DPDT contacts rated 25 amps. Inverted coil construction protects armature and contacts from inadvertent mechanical damage or electrical shorting. Series 2600U relays are rated for continuous duty at 240 VAC with 75% power factor; requires 9.5 VA, 60 Hz. Screw terminals are easily accessible. (Quick-Connect Terminal Kit permits easy conversion to ¼″ AMP terminals). "Press-to-Test" armature lever for convenient manual circuit testing. Two .196″ dia. holes on 1⅞″ centers. Size, 3⁵⁄₁₆″ x 2½″ x 2¹⁄₁₆″. Shipping Weight, 8 oz.

Guardian Number	Volts	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
2600U-DPDT-24A	24 AC	$10.60	$9.54	$9.01	$7.42	$6.89
2600U-DPDT-120A	120 AC	10.60	9.54	9.01	7.42	6.89
2600U-DPDT-240A	240 AC	10.92	9.83	9.28	7.64	7.10
2605U-DPDT-12D	12 DC	10.60	9.54	9.01	7.42	6.89
2605U-DPDT-24D	24 DC	10.60	9.54	9.01	7.42	6.89
2605U-DPDT-110D	110 DC	10.92	9.83	9.28	7.64	7.10
2600U-SPDT-Aux. Switch*	....	1.95	1.80	1.66	1.37	1.27
2600U-Quick Connect Term. Kit	....	.90	.81	.77	.63	.59

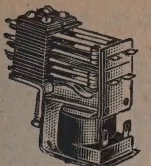
*Recessed SPDT auxiliary switch (illustrated with relay) has solder lug blade tails, rated for 10 amp operation.

SERIES 2620U AND 2625U DPST-NO—25 AMPS

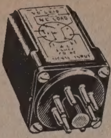
Identical to Series 2600U above, but with DPST-NO contacts. Supplied with screw terminals; quick-connect terminal kit permits easy conversion to ¼″ AMP terminals (see listing in table, above).

2620U-DPST-24A	24 AC	$10.06	$9.05	$8.55	$7.04	$6.54
2620U-DPST-120A	120 AC	10.06	9.05	8.55	7.04	6.54
2620U-DPST-240A	240 AC	10.36	9.32	8.81	7.25	6.73
2625U-DPST-12D	12 DC	10.06	9.05	8.55	7.04	6.54
2625U-DPST-24D	24 DC	10.06	9.05	8.55	7.04	6.54
2625U-DPST-110D	110 DC	11.62	10.46	8.81	8.13	7.55

GUARDIAN® ELECTRIC RELAYS, STEPPERS



240U, 245U



6100, 6300

SERIES 240U AC AND 245U DC RELAYS

r contact ratings up to 15 amps. Compact, reliable and inexpen-e AC and DC units are factory pretested and adjusted. Single-ew, center-hole mounting for quick assembly. Easily serviced, ough servicing is seldom required. Silver contacts rated 15 amps; ints ¼″ x 1⁄16″; 5-amp and 10-amp points available to 6PDT; ner contact materials available to specifications. Phenolic insula-n is tested at 1500 volts, 60 Hz. Solder lug terminals. AC coils ed 6 VA, 60 Hz; operate satisfactorily at −15% of rated voltage d will not overheat at +10% of rated voltage on continuous ty. DC coils operate at 1.5 watts min. or 3 watts max.; operate values up to 10% above, or 20% below rated voltage. Size, ⁄32″ x 1 3⁄32″ x 2 9⁄16″, 4PDT. Shipping Weight, 4.5 oz.

Guardian Number*†	Coil Res.	Cont. Comb.	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250 Up
0U-2C-24A	24	DPDT	$5.72	$5.15	$4.86	$4.00	$3.33
0U-4C-24A	24	4PDT	8.50	7.65	7.23	5.95	5.53
0U-2C-120A	550	DPDT	5.72	5.15	4.86	4.00	3.33
0U-4C-120A	550	4PDT	8.50	7.65	7.23	5.95	5.53
5U-2C-12D	50	DPDT	5.72	5.15	4.86	4.00	3.33
5U-4C-12D	50	4PDT	8.50	7.65	7.23	5.95	5.53
5U-2C-24D	200	DPDT	5.72	5.15	4.86	4.00	3.33
5U-4C-24D	200	4PDT	8.50	7.65	7.23	5.95	5.53

uffix indicates voltage (e.g., **-6D** for 6 VDC, etc).

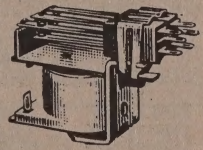
SOLID STATE RELAYS

niversal control voltage; output and control circuits completely olated. Pull-in voltage externally adjustable, 80–130 VAC/DC; ose pull-in/drop-out differential for accurate voltage sensing. ontrol of inductive, resistive or high-inrush lamp loads main-ined from 10 mA–3A. Internal filtering prevents random turn-on "off" contacts. Rugged; no spark or contact bounce. **Series 00:** Rated 1A; 6100 Size, 1¾″ x 1 37⁄64″ x 1 45⁄64″; 6110 Size: 2 7⁄32″ x ⁄8″ x 1⅜″; Shipping Weight, 4 oz. **Series 6300:** Rated 3 A; 6300 ze, 3 3⁄64″ x 1 37⁄64″ x 1 45⁄64″; 6310 Size, 3 3⁄16″ x 1 15⁄16″ x 1 15⁄16″; Shipping eight, 8 oz.

Guardian Number	Net Each, Lots of			
	1-24	25-49	50-99	100-249
00-THA-SPST-NO*	$19.59	$17.63	$16.65	$15.67
10-OHA-SPST-NO	20.60	18.54	17.51	16.48
00-THC-SPDT*	25.56	23.00	21.73	20.45
10-OHC-SPDT	26.18	23.56	22.25	20.94
00-THA-SPST-NO*	22.78	20.50	19.36	18.20
10-OHA-SPST-NO	23.34	21.01	19.84	18.67
00-THC-SPDT*	30.57	27.51	25.98	24.46
10-OHC-SPDT	32.23	29.01	27.40	25.78

110″ quick-connect base; rest have octal plug mounting.

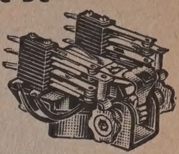
SERIES 900 AND 910 10-AMP RELAYS



eries 900—Low cost DPDT relay features trouble-free design incorporating a mini-um of parts. UL Recog. Contacts rated) amps, 120 VAC, resistive load. Molded vitches; one-piece mounting clip and re-rn spring; molded bobbin and coil cover. eyed and locked lifters. Shpg. Wt., 6 oz. **eries 910**—Same, but with 3⁄16″ quick-sconnect terminals instead of solder ter-inals. Size, 2 11⁄16″ x 1 5⁄64″ x 1 25⁄32″.

Guardian Number†	Coil Volts	Net Each, Lots of	
		1-24	25 Up
900-2C-24A	24 AC	$2.15	$1.95
900-2C-120A	120 AC	2.15	1.95
900-2C-240A	240 AC	2.15	1.95
905-2C-6D	6 DC	2.15	1.95
905-2C-12D	12 DC	2.15	1.95
905-2C-24D	24 DC	2.15	1.95
910-2C-24A	24 AC	2.15	1.95
910-2C-120A	120 AC	2.15	1.95
910-2C-240A	240 AC	2.15	1.95
915-2C-6D	6 DC	2.15	1.95
915-2C-12D	12 DC	2.15	1.95
915-2C-24D	24 DC	2.15	1.95

SEQUENCE RELAYS—AC-DC

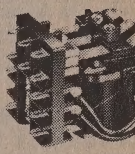


Types 660, 665—For switching operations in a desired repetitive sequence such as signs, motors, etc. Each electrical impulse moves relay contacts to opposite position in sequence. Contacts rated up to 12½ amps, 120 V, 60 Hz, non-inductive load. Mounting, 4 holes 8-32 (NC-2B). Shipping Weight, 8 oz.

Guardian Number*	Cont. Comb.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250 Up
660-C-24A	SPDT	$ 7.84	$ 7.06	$ 6.66	$5.49	$5.10
660-2C-24A	DPDT	8.47	7.62	7.20	5.93	5.51
660-4C-24A	4PDT	12.31	11.08	10.46	8.62	8.00
660-C-120A	SPDT	7.84	7.06	6.66	5.49	5.10
660-2C-120A	DPDT	8.47	7.62	7.20	5.93	5.51
660-4C-120A	4PDT	12.31	11.08	10.46	8.62	8.00
665-C-24D	SPDT	7.84	7.06	6.66	5.49	5.10
665-2C-24D	DPDT	8.47	7.62	7.20	5.93	5.51
665-4C-24D	4PDT	12.31	11.08	10.46	8.62	8.00

*Suffix indicates coil voltage.

SERIES 1240 AC AND 1245 DC 10-AMP RELAYS

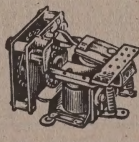


High efficiency, compact relays for communications, automation, remote control switching circuits and laboratory applications. Solder lug terminals are molded in phenolic panel block for coils as well as contacts. Barriers in panel block are raised to meet UL over-surface spacing; UL insulation throughout. Contacts rated 10 amps at 120 VAC, 60 Hz, non-inductive. Single 6-32 tapped mounting hole. Size, 1 45⁄64″ x 1 1⁄32″ x 1¼″. Shpg. Wt., 2.5 oz.

Guardian Number*†	Coil Res.	Cont. Comb.	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250 Up
1240-2C-6A	2.8	DPDT	$4.36	$3.92	$3.71	$3.05	$2.83
1240-3C-6A	4	3PDT	4.94	4.45	4.20	3.46	3.21
1240-2C-24A	59	DPDT	4.36	3.92	3.71	3.05	2.83
1240-3C-24A	50	3PDT	4.94	4.45	4.20	3.46	3.21
1240-2C-120A	1190	DPDT	4.36	3.92	3.71	3.05	2.83
1240-3C-120A	1000	3PDT	4.94	4.45	4.20	3.46	3.21
1240-2C-240A	5340	DPDT	4.55	4.10	3.87	3.19	2.98
1240-3C-240A	4750	3PDT	5.16	4.64	4.39	3.61	3.35
1245-2C-6D	18	DPDT	4.32	3.89	3.67	3.02	2.81
1245-3C-6D	18	3PDT	4.88	4.39	4.15	3.42	3.17
1245-2C-12D	75	DPDT	4.32	3.89	3.67	3.02	2.81
1245-3C-12D	75	3PDT	4.88	4.39	4.15	3.42	3.17
1245-2C-24D	300	DPDT	4.32	3.89	3.67	3.02	2.81
1245-3C-24D	300	3PDT	4.88	4.39	4.15	3.42	3.17
1245-2C-110D	6500	DPDT	4.90	4.41	4.17	3.43	3.19
1245-3C-110D	6500	3PDT	5.16	4.64	4.39	3.61	3.35

*Suffix indicates volts (i.e., **-6A** for 6 VAC, **-12D** for 12 VDC, etc.).

TYPE MER ELECTRICAL RESET STEPPERS



MER

Type MER—Direct drive (steps on energization) electrical reset stepper with positive mechanical reset interlock actuated by the reset magnet; unlocks on first energization of the step magnet. Assures positive reset on as short a pulse as 1/100 sec; or, even from its own selection contacts. Capable of counting in groups up to 21, then resetting automatically. By interconnecting two or more, count can be increased to any desired total counting by tens or any other convenient multiple. Can be used to control a sequence of operation and then automatically reset to initial or starting position. Maximum of 20 steps per second; 24 points; 22 active contacts. Coil operates satisfactorily at 15% below or 10% above voltage indicated. Size, 3 5⁄16″ w. x 3 5⁄16″ d. x 2 3⁄16″ h. max. Shpg. Wt., 11½ oz.

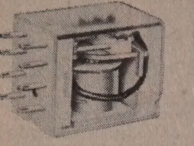
Guardian Number	VA		Watt		Net Each, Lots of				
	*	‡	*	‡	1-24	25-49	50-99	100-249	250 Up
MER-120AC	40	10	20	7	$21.23	$19.11	$18.05	$14.86	$13.80
MER-24DC	35	9	20	8	21.23	19.11	18.05	14.86	13.80

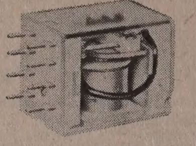
*Stepping coil. ‡Reset coil.

†RECOGNIZED UNDER THE COMPONENT PROGRAM OF UNDERWRITERS LABORATORIES INC.

GUARDIAN® ELECTRIC Relays

LOW-COST AC-DC MINIATURE ENCLOSED DPDT PLUG-IN RELAYS


Type 1330, 1335

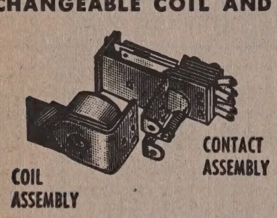

Type 1330P, 1335P

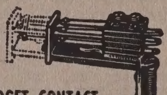
Compact DPDT relays ideal for circuitry in business machines, photocopiers, computers, etc. Save space and cost. Plug-in convenience. Lexan* cover; plug-in convenience with optional socket. Choice of solder (no suffix) or PC (suffix P) termination. Contacts rated 5 amps, 30 VDC or 120 VAC resistive. Socket fits panels .031″-.062″ thick with cutout .759″ x .830″ with .025″ radii at all four corners. Relay Wt., ¾ oz. *Reg. GE TM.

Guardian Number*		Coil Res.	Net Each, Lots of				
Solder Terminal Type	Printed Circuit Type		1-24	25-49	50-99	100-249	250 Up
1330-2C-6A	1330P-2C-6A	15	$3.96	$3.56	$3.37	$2.77	$2.57
1330-2C-12A	1330P-2C-12A	50	3.96	3.56	3.37	2.77	2.57
1330-2C-24A	1330P-2C-24A	245	3.96	3.56	3.37	2.77	2.57
1330-2C-120A	1330P-2C-120A	5400	4.16	3.74	3.54	2.91	2.70
1335-2C-6D	1335P-2C-6D	30	3.87	3.48	3.29	2.71	2.52
1335-2C-12D	1335P-2C-12D	125	3.87	3.48	3.29	2.71	2.52
1335-2C-24D	1335P-2C-24D	500	3.87	3.48	3.29	2.71	2.52
1330-1ST†	1330-2PC†	......	.58	.58	.58	.58	.58

*Suffix indicates volts (i.e., **-120A** for 120 VAC; **-6D**, 6 VDC, etc.).
†Sockets for above relays.

SERIES 200 RELAY WITH COMPLETELY INTERCHANGEABLE COIL AND CONTACT ASSEMBLIES




MIDGET CONTACT ASSEMBLY. Dotted line shows size of standard unit.

Two basic parts—a coil assembly and a contact switch assembly—comprise this simple, yet versatile Guardian relay. The coil assembly consists of the coil and field piece; the contact assembly consists of switch blades, armature, return spring and mounting bracket. The Guardian Midget Contact Assembly is **interchangeable** with the standard Series 200 contact assembly. Available with SPDT, DPDT or 4PDT contact switch assemblies, each **interchangeable** with all AC or DC coils.

SERIES 200 RELAY

Guardian Number	Volts	Coil	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250Up
200-6A	6	AC	$2.37	$2.13	$2.01	$1.66	$1.54
200-12A	12	AC	2.37	2.13	2.01	1.66	1.54
200-24A	24	AC	2.37	2.13	2.01	1.66	1.54
200-120A	120	AC	2.76	2.48	2.35	1.93	1.79
200-240A	240	AC	3.67	3.30	3.12	2.57	2.39
200-6D	6	DC	2.57	2.31	2.18	1.80	1.67
200-12D	12	DC	2.57	2.31	2.18	1.80	1.67
200-24D	24	DC	2.57	2.31	2.18	1.80	1.67
200-32D	32	DC	2.57	2.31	2.18	1.80	1.67
200-110D	110	DC	3.40	3.06	2.89	2.38	2.21
200-5,000D	Plate	DC	2.94	2.65	2.50	2.06	1.91
200-10,000D	Plate	DC	3.40	3.06	2.89	2.38	2.21

CONTACT SWITCH ASSEMBLIES

Guardian Number	Type	*	Cont. Comb.	Net Each, Lots of				
				1-24	25-49	50-99	100-249	250Up
200-1	Standard	8	SPDT	$2.18	$1.96	$1.85	$1.53	$1.42
200-2	Standard	8	DPDT	2.85	2.57	2.42	2.00	1.85
200-4	Standard	12.5	DPDT	3.20	2.88	2.72	2.24	2.08
200-5	Standard	8	4PDT	5.02	4.52	4.27	3.51	3.26
200-M1	Midget	10	SPDT	2.05	1.85	1.74	1.44	1.33
200-M2	Midget	10	DPDT	2.50	2.25	2.13	1.75	1.63
200-M5	Midget	8	4PDT	4.07	3.66	3.46	2.85	2.65

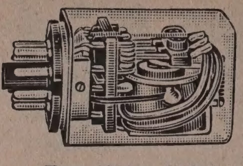
*Contact amps.

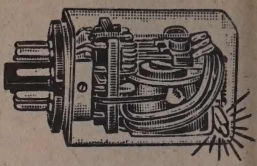
CONTACT SWITCH PARTS

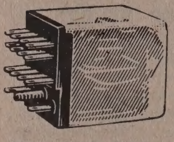
Use contact switch parts 200-3 for adding poles to contact switch assemblies 200-1 and 200-2. Use midget contact switch parts 200-M3 to add poles to midget contact switch assemblies 200-M1 and 200-M2.

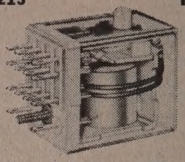
Guardian Number	Net Each, Lots of				
	1-24	25-49	50-99	100-249	250 Up
200-3	$2.17	$1.95	$1.84	$1.52	$1.41
200-M3	2.17	1.95	1.84	1.52	1.41

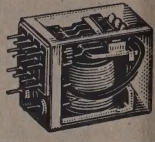
ENCLOSED PLUG-IN AC-DC RELAYS


Type 1210 and 1215


Type 1210N


Type 1310, 1315


Type 1310B, 1315B


Type 1310P, 1315

In high-impact, transparent Lexan case for light weight and resistance to weather and temperatures up to 200° F. **Types 1210, -N 1215**—With 8-pin octal plug for DPDT and 11-pin for 3PDT Contacts rated 10 amps at 120 VAC, 60 Hz, non-inductive. Typ 1210-N has miniature neon lamp connected across terminals Lamp lights when coil is energized, goes out in case of circuit fault Ideal substitute for circuit tester in relay banks, mass rela arrangements, or where relays are visibly located at intermediat switching points of the circuitry. Size, 2³⁄₁₆″ x 1⅜″ x 1⅜″. Shipping Weight, 3.5 oz. UL and CSA Recognized (5 amp only). **Type 1310 and 1315**—Miniature plug-in relays with solder terminal (no suffix); PC terminals (suffix P); with miniature neon lam connected across coil terminals to glow on coil energization o show circuit fault on failure to glow (suffix N); and, with insulate button for push-to-test without applying voltage to coil (suffix B) Long life (100 million operations) 4PDT contacts rated 5 amps 30 VDC or 120 VAC. Size, 1¹¹⁄₃₂″ x ⁵⁵⁄₆₄″ x 1⁷⁄₆₄″. Shpg. Wt., 1⅛ oz

ENCLOSED PLUG-IN RELAYS—AC-DC

Guardian Number*	Coil Res.	Cont. Comb.	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250 Up
1210N-2C-120A	1100	DPDT	$ 8.66	$7.79	$7.36	$6.06	$5.6
1210N-3C-120A	1100	3PDT	10.26	9.23	8.72	7.18	6.6
1210-2C-6A	33	DPDT	7.46	6.71	6.34	5.23	4.8
1210-3C-6A	33	3PDT	9.00	8.10	7.65	6.30	5.8
1210-2C-24A	54	DPDT	7.46	6.71	6.34	5.23	4.8
1210-3C-24A	54	3PDT	9.00	8.10	7.65	6.30	5.8
1210-2C-120A	1100	DPDT	7.46	6.71	6.34	5.23	4.8
1210-3C-120A	1100	3PDT	9.00	8.10	7.65	6.30	5.8
1210-2C-240A	5000	DPDT	7.86	7.07	6.68	5.50	5.1
1210-3C-240A	5000	3PDT	9.30	8.37	7.91	6.51	6.0
1215-2C-6D	18	DPDT	7.46	6.71	6.34	5.23	4.8
1215-3C-6D	18	3PDT	9.00	8.10	7.65	6.30	5.8
1215-2C-12D	75	DPDT	7.46	6.71	6.34	5.23	4.8
1215-3C-12D	75	3PDT	9.00	8.10	7.65	6.30	5.8
1215-2C-24D	300	DPDT	7.46	6.71	6.34	5.23	4.8
1215-3C-24D	300	3PDT	9.00	8.10	7.65	6.30	5.8
1215-2C-110D	6500	DPDT	7.92	7.13	6.73	5.54	5.1
1215-3C-110D	6500	3PDT	9.60	8.64	8.16	6.72	6.2

*Suffix indicates volts (i.e., **-120A** for 120 VAC; **-6D**, 6 VDC, etc.)

ENCLOSED PLATE CIRCUIT PLUG-IN RELAYS—DC

Guardian Number*	Oper. mA	Cont. Comb.	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250 Up
1215-2C-2.5	10	DPDT	$ 8.00	$7.20	$6.80	$5.60	$5.2
1215-3C-2.5	12	3PDT	9.36	8.42	7.96	6.55	6.1
1215-2C-5	7.2	DPDT	8.13	7.32	6.91	5.69	5.2
1215-3C-5	8.5	3PDT	9.68	8.71	8.23	6.78	6.2
1215-2C-10	5	DPDT	8.38	7.54	7.12	5.87	5.5
1215-3C-10	6	3PDT	10.00	9.00	8.50	7.00	6.5

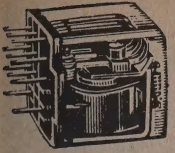
*Suffix indicates coil resistance in kilohms (e.g., **-2.5** for 250 ohms, **-10** for 10,000 ohms, etc.): Not UL Recognized.

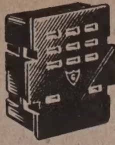
MINIATURE ENCLOSED PLUG-IN RELAYS

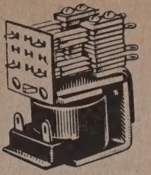
Guardian Number*		Net Each, Lots of				
Solder Terminal Type†	Printed Circuit Type†	1-24	25-49	50-99	100-249	250 Up
1310-4C-6A	1310P-4C-6A	$5.20	$4.68	$4.42	$3.64	$3.3
1310-4C-12A	1310P-4C-12A	5.20	4.68	4.42	3.64	3.3
1310-4C-24A	1310P-4C-24A	5.20	4.68	4.42	3.64	3.3
1310-4C-120A	1310P-4C-120A	5.41	4.87	4.60	3.79	3.5
1315-4C-6D	1315P-4C-6D	4.68	4.21	3.98	3.28	3.0
1315-4C-12D	1315P-4C-12D	4.68	4.21	3.98	3.28	3.0
1315-4C-24D	1315P-4C-24D	4.68	4.21	3.98	3.28	3.0
1315-4C-110D	1315P-4C-110D	5.05	4.55	4.29	3.54	3.2
Solder Term.	**Description**					
1310N-4C-120A	With neon lamp	$6.64	$5.98	$5.64	$4.65	$4.3
1315N-4C-24D	With neon lamp	5.61	5.05	4.77	3.54	3.6
1315N-4C-110D	With neon lamp	6.24	5.62	5.30	4.37	4.0
1310B-4C-120A	Push-to-test	6.04	5.44	5.13	4.23	3.9
1315B-4C-24D	Push-to-test	5.10	4.59	4.34	3.57	3.3
1315B-4C-110D	Push-to-test	5.67	5.10	4.82	3.97	3.6
1310-1ST‡, 1310-2PC§, 1310-3SN#		.65	.65	.65	.65	.6

*Suffix indicates volts (i.e., **-6A**, 6 VAC; **-6D**, 6 VDC etc.). †UL Recognized. ‡Socket for all solder terminal type relays. §Socke for printed circuit type relays. #Socket for solder terminal snap-i type relays.

GUARDIAN® ELECTRIC RELAYS AND SWITCHES


1220, 1225


SOC-1


640, 645

SERIES 1220 AC AND 1225 DC RELAYS

Versatile enclosed relay for plug-in or solder connection or use with quick-connect terminals. Reduced height and cost by elimination of radio type plug, extra wiring and sub-assembly between relay and plug. Features "Uni-Guard" continuous loop moving blades; snap-lock cover; and multipurpose terminals usable as solder lug, .110" quick-connect, or socket plug-in use. With mounting bracket. Size, 1³⁷⁄₆₄" x 1⁴⁵⁄₆₄" x 1¾". UL Recognized. **Type 1220/1220:** Electrical reset version, 3³⁄₆₄" h. **Type 1225/1225:** Latching relay. **Type 1220M and 1225M:** Manual reset version.

Guardian Number†	Coil Res.	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
1220-2C-24A	54	$ 5.00	$ 4.50	$ 4.25	$ 3.50	$ 3.25
1220-2C-120A	1110	5.00	4.50	4.25	3.50	3.25
1220-2C-240A	5000	5.00	4.50	4.25	3.50	3.25
1220-3C-24A	54	5.36	4.82	4.56	3.75	3.48
1220-3C-120A	1110	5.36	4.82	4.56	3.75	3.48
1220-3C-240A	5000	5.36	4.82	4.56	3.75	3.48
1225-2C-6D	18	5.00	4.50	4.25	3.50	3.25
1225-2C-12D	75	5.00	4.50	4.25	3.50	3.25
1225-2C-24D	300	5.00	4.50	4.25	3.50	3.25
1225-2C-110D	6500	5.00	4.50	4.25	3.50	3.25
1225-3C-6D	18	5.36	4.82	4.56	3.75	3.48
1225-3C-12D	75	5.36	4.82	4.56	3.75	3.48
1225-3C-24D	300	5.36	4.82	4.56	3.75	3.48
1225-3C-110D	6500	5.36	4.82	4.56	3.75	3.48
1220/1220-2C-24A	54	16.05	14.45	13.64	11.24	10.43
1220/1220-2C-120A	1110	16.05	14.45	13.64	11.24	10.43
1225/1225-2C-24D	300	16.05	14.45	13.64	11.24	10.43
1220M-2C-24A	54	7.06	6.35	6.00	4.94	4.59
1220M-2C-120A	1110	7.06	6.35	6.00	4.94	4.59
1225M-2C-24D	300	7.06	6.35	6.00	4.94	4.59

†Suffix indicates coil voltage (i.e., **-24A** for 24 VAC, etc.).

Guardian No. 1220-SOC1 or 1220-SOC2 Socket—Socket for 1220 and 1225 relays. Net Ea., Lots of 1–24 . . **$0.70;** 25 Up . . **$0.65**

ALL-PURPOSE ECONOMY AC-DC RELAYS

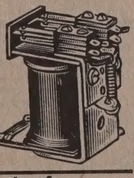
Compact, lightweight relay capable of unusually heavy power control for its size. Variety of AC-DC voltages and contact combinations. Contacts rated 10 amps at 60 Hz, 120-volt non-inductive load. Center mounting with single hole. Size, 1³⁄₃₂" x 1⅞" x 2⁵⁄₃₂". Shipping Weight, 3.5 oz. UL Recognized.

Guardian Number†	Coil Res.	Cont. Comb.	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
640U-A-24A	24	SPST*	$3.52	$3.17	$2.99	$2.46	$2.29
640U-C-24A	24	SPDT	3.99	3.59	3.39	2.79	2.59
640U-2C-24A	24	DPDT	4.84	4.36	4.11	3.39	3.15
640U-4C-24A	24	4PDT	6.68	6.01	5.68	4.68	4.34
640U-A-120A	550	SPST*	3.52	3.17	2.99	2.46	2.29
640U-C-120A	550	SPDT	3.99	3.59	3.39	2.79	2.59
640U-2C-120A	550	DPDT	4.84	4.36	4.11	3.39	3.15
640U-4C-120A	550	4PDT	6.68	6.01	5.68	4.68	4.34
640U-2C-240A	2950	DPDT	5.16	4.64	4.39	3.61	3.35
645U-A-12D	50	SPST*	3.52	3.17	2.99	2.46	2.29
645U-C-12D	50	SPDT	3.99	3.59	3.39	2.79	2.59
645U-2C-12D	50	DPDT	4.84	4.36	4.11	3.39	3.15
645U-4C-12D	50	4PDT	6.68	6.01	5.68	4.68	4.34
645U-A-24D	200	SPST*	3.52	3.17	2.99	2.46	2.29
645U-C-24D	200	SPDT	3.99	3.59	3.39	2.79	2.59
645U-2C-24D	200	DPDT	4.84	4.36	4.11	3.39	3.15
645U-4C-24D	200	4PDT	6.68	6.01	5.68	4.68	4.34
645U-A-110D	4000	SPST*	3.96	3.56	3.37	2.77	2.57
645U-C-110D	4000	SPDT	4.52	4.07	3.84	3.16	2.94
645U-2C-110D	4000	DPDT	5.42	4.88	4.61	3.79	3.52
645U-4C-110D	4000	4PDT	7.26	6.53	6.17	5.08	4.72

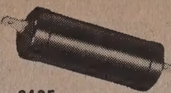
*Normally open. †Suffix indicates coil voltage (i.e., **-6D** for 6 VDC, etc.).

DC PLATE CIRCUIT RELAY

DPDT; constructed with extra long coil for greater sensitivity. Adaptable to voltage operation as well as sensitive plate circuit control installations. Coil impregnated for reliability and longer life. Average power requirement, 0.2 watt. Contacts, fine silver, rated 10 amps. Single 8-32 center mtg. hole. Size, 2⅛" x 2" x 1⅛". Shipping Weight, 5.5 oz.



Guardian Number	Oper. mA	Coil Res.	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
625-2.5	9	2500	$5.80	$5.22	$4.93	$4.06	$3.77
625-5	6.3	5000	6.40	5.76	5.44	4.48	4.16
625-10	4.5	10,000	6.96	6.26	5.92	4.87	4.52


6405
6415

6505

1435

SERIES 1435 MINIATURE RELAYS

Specifically designed for applications with either demanding space limitations or operating requirements that cannot be met with reed relays or conventional contact type relays. Contacts rated 1 amp at 26 VDC. PC terminals in 0.10" grid spacing. Mechanical life in excess of 10 million operations. Blue plastic dust cover with Mylar* bottom. **Size:** .590" w. x 1.285" d. x .435" h. Wt., 10 grams.
*Reg. DuPont trademark.

Guardian Number*	Coil Resis., Ohms	Net Each, Lots of 1-24	25-49	50-99	100-249	250 Up
1435-1C-6D	66	$3.50	$3.15	$2.98	$2.45	$2.28
1435-2C-6D	66	4.86	4.37	4.13	3.40	3.16
1435-1C-12D	330	3.50	3.15	2.98	2.45	2.28
1435-2C-12D	330	4.92	4.43	4.18	3.44	3.20
1435-1C-24D	950	3.92	3.53	3.33	2.74	2.55
1435-2C-24D	950	5.10	4.59	4.34	3.57	3.32
1435-1C-48D	4700	4.20	3.78	3.57	2.94	2.73
1435-2C-48D	4700	5.44	4.90	4.62	3.81	3.54

*First suffix: **-IC**=SPDT, **-2C**=DPDT; second suffix: **6D**=6 VDC, **12D**=12 VDC, **24D**=24 VDC, **48D**=48 VDC.

SERIES 6405 "FLAT BOTTOM" TIME DELAYS

Solid state inline time delay in semi-cylindrical configuration combines the low cost of tubular design with a flattened bottom for quick, easy PC board installation. Available in low (12 to 48 VDC) and high (90 to 130 VDC) voltage versions with three different externally-adjustable time ranges. **Accuracy:** ±10%. **Repeatability:** ±2% for fixed line input. **Operating Temperature:** −20° C to +55° C. **Life:** 10 million operations, min. **Size:** .800" max. dia. x 2¹⁄₁₆" lg.

Guardian Number*	Time Range, Sec	Net Each, Lots of 1-24	25-49	50-99	100-249
6405-2L-10	.1–10	$ 9.26	$ 8.33	$7.87	$7.41
6415-2L-10	.1–10	9.34	8.41	7.94	7.47
6405-2H-10	.1–10	9.26	8.33	7.87	7.41
6415-2H-10	.1–10	9.34	8.41	7.94	7.47
6405-2L-120	5–120	9.34	8.41	7.94	7.47
6415-2L-120	5–120	9.42	8.48	8.01	7.54
6405-2H-120	5–120	9.34	8.41	7.94	7.47
6415-2H-120	5–120	9.42	8.48	8.01	7.54
6405-2L-300	10–300	10.95	9.86	9.31	8.76
6415-2L-300	10–300	11.57	10.41	9.83	9.26
6405-2H-300	10–300	10.95	9.86	9.31	8.76
6415-2H-300	10–300	11.57	10.41	9.83	9.26

***6405** with solid lead terminations; **6415** with ³⁄₁₆" QC terminations; **L** indicates low voltage (12–48 VDC); **H** indicates high voltage (90–130 VDC).

SERIES 6505 "ZERO CROSSOVER" SWITCHES

Low cost module assures "zero crossover" switching by forming an electrical "cushion" between signal input and load power. SPST-NO contacts. **Crossover:** 0.0 VAC ±10 V. **Load Power:** 120 VAC (240 VAC available on request). **Contact Rating:** 1 amp at 120 VAC, 56/60 Hz. **Temperature:** −20° C to +55° C. **Life:** 10 million operations. **Termination:** PC, .047" dia. x .375" h. **Size:** 1²⁷⁄₃₂" x 1⅜" x ⁹⁄₁₆".

Guardian Number	VDC	Net Each, Lots of 1-24	25-49	50-99	100-249
6505-6D	6	$14.16	$12.74	$12.04	$11.33
6505-12D	12	14.16	12.74	12.04	11.33
6505-24D	24	14.16	12.74	12.04	11.33

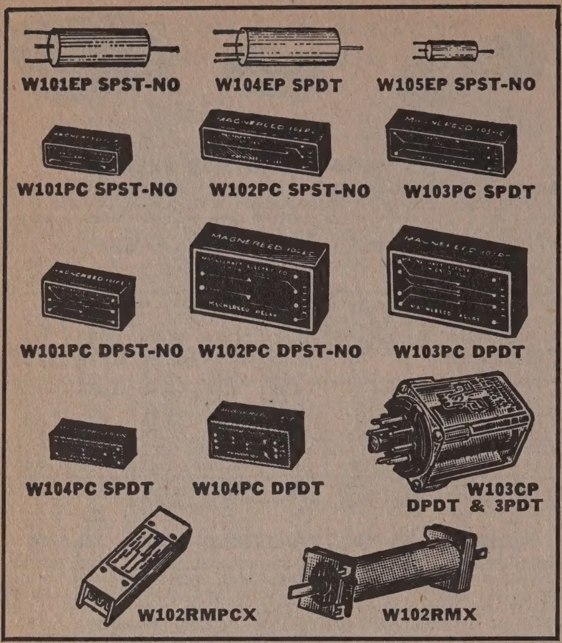
SERIES TMP AND TMT TIME DELAY MODULES

Solid state time delay modules available in "on operate" and "on release" configurations. Externally adjustable within two ranges from ½ to 100 seconds and 100 to 300 seconds. TMP module terminates in an octal plug for quick mounting and remote control of relay and other switching devices. TMT module is designed to accept relays mounted to it, or to allow stacking, or installation into a PC board. **Repeatability:** ±1%. **Life:** One million cycles. **Size:** TMP, 1" h. x 1½" square; TMT, .63" h. x 2" square. UL Recognized.

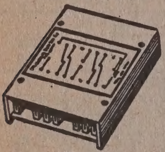
Guardian Number*	Net 1-49*	Guardian Number*	Net 1-49*	Volts
TMT-O-100-24D†	$12.17	**TMP-O-100-24D†**	$13.56	24 VDC
TMT-O-300-24D	15.50	**TMP-O-300-24D**	16.01	24 VDC
TMT-O-100-24A†	12.99	**TMP-O-100-24A†**	14.08	24 VAC
TMT-O-300-24A	16.33	**TMP-O-300-24A**	16.54	24 VAC
TMT-O-100-120A†	12.17	**TMP-O-100-120A†**	13.56	120 VAC
TMT-O-300-120A	15.50	**TMP-O-300-120A**	16.01	120 VAC
TMT-R-100-24D†	16.38	**TMP-R-100-24D†**	18.35	24 VDC
TMT-R-300-24D	19.66	**TMP-R-300-24D**	20.85	24 VDC
TMT-R-100-24A†	16.87	**TMP-R-100-24A†**	18.85	24 VAC
TMT-R-300-24A	20.15	**TMP-R-300-24A**	21.17	24 VAC
TMT-R-100-120A†	16.38	**TMP-R-100-120A†**	18.35	120 VAC
TMT-R-300-120A	19.66	**TMP-R-300-120A**	20.85	120 VAC

***O** in Guardian Number indicates delay on operate; **R,** delay on release. †Time Range: .5–100 secs; all others, 100–300 secs.
***Larger Quantity Prices Available on Request.**

Magnecraft® Dry Reed Relays



MODULAR-PACKAGED DRY REED RELAYS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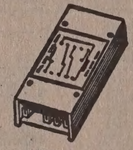
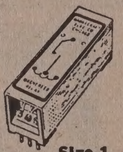

Size 2


Size 1

Modular-packaged dry reed relays ideal for printed circuit applications. Switching mechanism is hermetically sealed in glass with inert gas fill. Precious metal contacts. Unique mounting design prevents damaging stresses on reed elements. Nylon bobbin and integral mounting base mortised and rigidly riveted to epoxy resin terminal board. Snap-on metal cover provides magnetic shielding and mechanical protection. Fast acting: 2 or 3 msec, operating; 1 msec, release time. Long life: 20 million cycles at max. load; 100 million at low load. Available Form A or Form C: Form A rated 15 VA at 1 amp or 250 VAC max.; Form C rated 10 VA at ½ amp or 250 VAC max. Choice of three case sizes: **Size 1,** single Form A or C; 41/64" h. x ¾" w. x 2⅝" lg.; requires 0.5 W DC power. **Size 2,** three Form A or two Form C; 41/64" h. x 1 3/16" w. x 2⅝" lg.; requires 0.75 W DC power. **Size 3,** six Form A or four Form C; 41/64" h. x 1 31/64" w. x 2⅝" lg.; requires 1.5 W DC power.

Magnecraft Number	Contacts & Size	Coil Data*			Av. Time, msec		Net Ea. 1-24*
		mA	VDC	Ω	Operate	Release	
W102MPCX-5	SPST-NO Size 1	140	....	30	3	½	$ 3.45
W102MPCX-6		....	6	70	3	½	3.45
W102MPCX-7		....	12	250	3	½	3.45
W102MPCX-8		....	24	1000	3	½	3.45
W102MPCX-9		....	48	4000	3	½	3.63
W102MPCX-10		9	....	7000	3	½	4.35
W103MPCX-1	SPDT Size 1	140	....	30	2	½	6.12
W103MPCX-2		....	6	70	2	½	6.12
W103MPCX-3		....	12	250	2	½	6.12
W103MPCX-4		....	24	1000	2	½	6.12
W103MPCX-5		....	48	4000	2	½	6.30
W103MPCX-6		9	....	7000	2	½	7.01
W102MPCX-48	3PST-NO Size 2	....	6	50	3	½	5.90
W102MPCX-49		....	12	175	3	½	5.90
W102MPCX-50		....	24	750	3	½	6.06
W102MPCX-51		....	48	3000	3	½	6.27
W102MPCX-52	6PST-NO Size 3	....	6	25	3	½	9.64
W102MPCX-53		....	12	100	3	½	9.77
W102MPCX-54		....	24	375	3	½	9.82
W102MPCX-55		....	48	1500	3	½	9.90
W103MPCX-30	DPDT Size 2	....	6	50	2	½	8.75
W103MPCX-31		....	12	175	2	½	8.75
W103MPCX-32		....	24	750	2	½	8.89
W103MPCX-33		....	48	3000	2	½	9.10
W103MPCX-34	4PDT Size 3	....	6	25	2	½	15.33
W103MPCX-35		....	12	100	2	½	15.44
W103MPCX-36		....	24	375	2	½	15.51
W103MPCX-37		....	48	1500	2	½	15.62

★QUANTITY DISCOUNTS

For larger quantity orders, the following discounts apply. Use price shown in tables above, and multiply with multipliers shown.

For Lots	Discount	Multiplier	For Lots	Discount	Multiplier
25-49	−10%	.90	75-99	−20%	.80
50-74	−15%	.85	100-499	−30%	.70

MAGNEREED (DRY REED) RELAYS

Stabilized contact resistance, high speed positive switching an sensitive operation; adaptable to complex logic circuits. A models have molded epoxy resin encapsulation. Pre-adjusted pre cious metal contacts in inert gas environment are actuated by co around capsule. **Series W101:** 10 VA at .5 amp max. or 200 VD max. resistive. Life, 5 million cycles at max. load; 20 million, ½ load. Cap., 1.0 pF between contacts. Size: W101EP, 1" x 7/16" di (Wt., 1 oz.); W101PC, SPST-NO, 1½" x ½" x 9/16" (Wt., 2 oz.) W101PC, DPST-NO, 1½" x 1 1/16" x 9/16" (Wt., 3 oz.). **Series W102** 15 VA at 1 A max., or 250 VAC max. non-inductive. Life, 2 million cycles at max. load; 100 million ½-load. Cap., SPST, 1 pF DPST, 1.2 pF. Size: W102PC, SPST-NO, 2¼" x 21/32" x ⅝" (Wt 3 oz.); W102PC, DPST-NO, 2¼" x 1¼" x ¾" (Wt., 4 oz.) **Series W103:** 10 VA at ½ A, or 250 VAC max. non-inductive. Lif 25 million cycles at max. load; 50 million, ½-load. Cap., SPDT 3 pF; DPDT 3.5 pF. Operation, SPDT break before make, singl side stable. Size: W103PC, SPDT, 2¼" x 21/32" x ⅝" (Wt., 3 oz.) W103PC, DPDT, 2¼" x 1¼" x ¾" (Wt., 4 oz.). **Series W103CP** Plug-in mounting type with non-metallic dust cover; has W10 relays with common operating coil. DPDT units are 8-pin 3PDT units, 11-pin. Size, 1⅜" x 1⅜" x 2⅛" (Wt., 5 oz.). **Serie W104:** 3 VA at .25 A max., or 28 V max. non-inductive. Lif 10 million cycles at rated load. No bias magnet. Size: W104EP, 1" 7/16" dia. (Wt., 1 oz.); W104PC, SPDT, 1½" x ½" x 9/16" (Wt., 2 oz.) W104PC, DPDT, 1½" x 1 1/16" x 9/16" (Wt., 2 oz.). **Series W105** 0.1 VA at 10 mA. Life, 10 million cycles at rated load. Siz 7/16" x ¼" dia. (Wt., ½ oz.).

Magnecraft Number	Contacts	Coil Data*			Av. Time, msec		Net Ea 1-24*
		mA	VDC	Ω	Operate	Release	
W101EPX-5	SPST-NO	...	6	65	1	½	$ 3.80
W101EPX-6	SPST-NO	....	12	225	1	½	3.80
W101EPX-7	SPST-NO	....	24	1000	1	½	4.45
W101EPX-8	SPST-NO	8	....	5000	1	½	4.91
W101PCX-5	SPST-NO	....	6	65	1	½	5.37
W101PCX-6	SPST-NO	....	12	250	1	½	5.42
W101PCX-7	SPST-NO	....	24	1000	1	½	5.52
W101PCX-8	SPST-NO	8	....	5000	1	½	5.96
W101PCX-9	DPST-NO	....	6	40	1	½	7.51
W101PCX-10	DPST-NO	....	12	150	1	½	7.54
W101PCX-11	DPST-NO	....	24	650	1	½	7.60
W101PCX-12	DPST-NO	8	....	5000	1	½	8.07
W102PCX-1	SPST-NO	....	6	100	3	½	5.01
W102PCX-2	SPST-NO	....	12	400	3	½	5.07
W102PCX-3	SPST-NO	....	24	1500	3	½	5.11
W102PCX-4	SPST-NO	6.5	....	5000	3	½	5.59
W102PCX-5	DPST-NO	....	6	50	3	½	6.53
W102PCX-6	DPST-NO	....	12	200	3	½	6.59
W102PCX-7	DPST-NO	....	24	800	3	½	6.65
W102PCX-8	DPST-NO	9	....	5000	3	½	7.12
W103PCX-1	SPDT	....	6	100	2	½	7.58
W103PCX-2	SPDT	....	12	400	2	½	7.63
W103PCX-3	SPDT	....	24	1500	2	½	7.69
W103PCX-4	SPDT	6.5	....	5000	2	½	8.15
W103PCX-5	DPDT	....	6	50	2	½	11.31
W103PCX-6	DPDT	....	12	200	2	½	11.33
W103PCX-7	DPDT	....	24	800	2	½	11.38
W103PCX-8	DPDT	9	....	5000	2	½	11.88
W103CPX-7	DPDT	....	6	75	2	½	13.57
W103CPX-8	DPDT	....	12	300	2	½	13.60
W103CPX-9	DPDT	....	24	1000	2	½	13.66
W103CPX-10	DPDT	8	....	5000	2	½	14.25
W103CPX-11	3PDT	....	6	40	2	½	17.61
W103CPX-12	3PDT	....	12	150	2	½	17.67
W103CPX-13	3PDT	....	24	650	2	½	17.80
W103CPX-14	3PDT	10	....	5000	2	½	18.38
W104EPX-2	SPDT	....	6	65	1	1	7.74
W104EPX-3	SPDT	....	12	225	1	1	7.74
W104EPX-4	SPDT	....	24	1000	1	1	8.45
W104EPX-5	SPDT	8	....	5000	1	1	8.98
W104PCX-7	SPDT	....	6	65	1	1	10.57
W104PCX-8	SPDT	....	12	225	1	1	10.63
W104PCX-9	SPDT	....	24	1000	1	1	10.73
W104PCX-10	SPDT	8	....	5000	1	1	11.17
W104PCX-3	DPDT	....	6	40	1	1	15.32
W104PCX-4	DPDT	....	12	150	1	1	15.35
W104PCX-5	DPDT	....	24	650	1	1	15.41
W104PCX-6	DPDT	8	....	5000	1	1	15.89
W105EPX-1	SPST-NO	....	6	90	1	1	6.49
W105EPX-2	SPST-NO	....	12	350	1	1	6.49
W105EPX-3	SPST-NO	....	24	1300	1	1	6.62

3 AMP SPST-NO POWER DRY REED RELAYS

Low profile, printed circuit mounted relay with contact ratin formerly available only in general purpose or telephone typ relays. Housed in molded nylon bobbin with snap-on, steel cove for mechanical and magnetic shielding. Switch mechanism i hermetically-sealed glass capsule. **Contacts:** SPST-NO (Form A) **Rating:** 100 VA at 3 A or 250 V max. **Power:** 0.5 W nominal 2 watts max. **Size:** 2⅝" x 41/64" x ¾". Wt., 3 oz.

Magnecraft Number	Coil Data*			Net Each, Lots of				
	mA	VDC	Ω	1-24	25-49	50-74	75-99	100-49
W102RMPCX-1	....	6	70	$8.26	$7.43	$7.02	$6.61	$5.78
W102RMPCX-2	....	12	250	8.26	7.43	7.02	6.61	5.78
W102RMPCX-3	....	24	1000	8.33	7.50	7.08	6.66	5.83
W102RMPCX-4	....	48	4000	8.59	7.73	7.30	6.87	6.01

Similar to above, but with inline leads and size: 3¼" x ½" x 19/32"

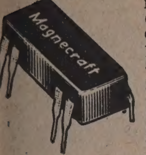
Magnecraft Number	mA	VDC	Ω	1-24	25-49	50-74	75-99	100-49
W102RMX-5	....	6	200	$4.39	$3.95	$3.73	$3.51	$3.07
W102RMX-6	....	12	500	4.43	3.99	3.77	3.54	3.10
W102RMX-7	....	24	2000	4.55	4.10	3.87	3.64	3.19
W102RMX-8	....	48	5000	4.76	4.28	4.05	3.81	3.33

*COIL DATA

Current shown is pull-in at specified value or less. Voltage shown is nominal. Pull-in at 80% of nominal or less for DC relays; 85% of nominal for AC relays at 25° C. Resistance shown is ±10% at 25° C.

Magnecraft® DIP Reed Relays

DUAL-INLINE-PACKAGED 8-PIN REED RELAYS



Epoxy-molded DIP (dual-inline package) 8-pin reed relays offer high quality at low cost, compatible with the standard packaging developed for integrated circuitry. Unique design provides the optimum in automated insertion and other economical installation techniques associated with printed circuit applications. Ideal for use in circuits where high density packaging is essential. The 5 VDC IC-compatible versions will operate directly from TTL or DTL circuits; also available in standard coil voltages of 6, 12 or 24 VDC. Class 107 and 118 elays are available with or without an internal clamping diode. **ize:** W107, .750″ x .187″ x .250″; W117 and W118, .750″ x 10″ x .260″; W171, W172 and W173, .750″ x .275″ x .260″.

CLASS 107 DIP, SPST-NO
1 FORM A (PROFILE HEIGHT .187″)

Contacts rated 3 VA at .110 amp max. or 28 VDC resistive, max. Operate time, 200 µsec, typical. Dielectric strength, 200 VDC minimum between contacts. Contact resistance, 200 milliohms, verage. Life, 10 million operations typical; longer at reduced oads.

Magnecraft Number	Coil Data			Typical Power Required	Net Ea., Lots of*		
	Max. Pick-up Voltage	V	Ohms*		1-24	25-49	50-74
W107DIP-1	3.8 VDC	5	500	50 mW	$4.00	$3.60	$3.40
W107DIP-2	4.5 VDC	6	500	75 mW	3.50	3.15	2.98
W107DIP-3	9.0 VDC	12	500	300 mW	3.50	3.15	2.98
W107DIP-4	18.0 VDC	24	1200	500 mW	3.75	3.38	3.19
W107DIP-5†	3.8 VDC	5	500	50 mW	4.70	4.23	4.00
W107DIP-6†	4.5 VDC	6	500	75 mW	4.20	3.78	3.57
W107DIP-7†	9.0 VDC	12	500	300 mW	4.20	3.78	3.57
W107DIP-8†	18.0 VDC	24	1200	500 mW	4.45	4.01	3.78

CLASS 117 DIP, SPST-NO
1 FORM A (PROFILE HEIGHT .210″)

Contacts rated 10 VA at .250 amp max. or 100 VDC resistive, max. Operate time, 500 µsec, typical. Dielectric strength, 200 VDC minimum between contacts. Contact resistance, 150 milliohms, average. Life, 25 million operations, typical, longer at reduced loads. Higher rating up to .5 amp at reduced life.

W117DIP-1	3.8 VDC	5	200	125 mW	$3.55	$3.20	$3.02
W117DIP-2	4.5 VDC	6	200	180 mW	3.23	2.91	2.75
W117DIP-3	9.0 VDC	12	500	300 mW	3.23	2.91	2.75
W117DIP-4	18.0 VDC	24	1200	500 mW	3.43	3.09	2.92
W117DIP-5†	3.8 VDC	5	200	125 mW	4.30	3.87	3.66
W117DIP-6†	4.5 VDC	6	200	180 mW	3.92	3.53	3.33
W117DIP-7†	9.0 VDC	12	500	300 mW	3.92	3.53	3.33
W117DIP-8†	18.0 VDC	24	1200	500 mW	4.17	3.75	3.54

CLASS 171 DIP, SPST-NO
1 FORM A (PROFILE HEIGHT .275″)

Contacts rated at 10 VA at .250 amp max. or 100 VDC resistive, max. Operate time, 500 µsec, typical. Contact bounce, less than 200 µsec, average. Dielectric strength, 250 VDC minimum, across open contacts; 750 VAC, coil to contact. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{11} ohms, minimum. Life, 25 million operations, typical; longer at reduced loads. Mechanical characteristics, shock, 100 g's at ½ sine wave, 11 µsec vibration, 100 g's, 10 to 2000 Hz. Temperature range, −55° C to +85° C.

W171DIP-1	3.8 VDC	5	200	125 mW	$2.80	$2.52	$2.38
W171DIP-2	3.8 VDC	5	500	50 mW	3.18	2.86	2.70
W171DIP-3	4.5 VDC	6	500	75 mW	2.80	2.52	2.38
W171DIP-4	9.0 VDC	12	500	290 mW	2.80	2.52	2.38
W171DIP-5	18.0 VDC	24	2200	270 mW	3.15	2.84	2.68
W171DIP-6†	3.8 VDC	5	200	125 mW	3.39	3.05	2.88
W171DIP-7†	3.8 VDC	5	500	50 mW	3.73	3.36	3.17
W171DIP-8†	4.5 VDC	6	500	75 mW	3.39	2.05	2.88
W171DIP-9†	9.0 VDC	12	500	290 mW	3.39	3.05	2.88
W171DIP-10†	18.0 VDC	24	2200	270 mW	3.73	3.36	3.17

CLASS 173 DIP, SPST-NO, 1 FORM A
POSITION-FREE MERCURY WETTED (PROFILE HEIGHT .275″)

Contacts rated 3 VA or .110 amp max. or 28 VDC max. resistive. Operate time, 500 µsec, average. Contact bounce, none, with diode suppressed coil. Dielectric strength, 250 VDC minimum, across open contacts; 750 VAC, coil to contact. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{11} ohms. Life, 20 million operations, typical, longer at reduced loads. Mechanical characteristics, shock 50 g's; ½ sine wave, 11 µsec, vibration 50 g's, 10 to 2000 Hz. Temperature range, −38° C to +85° C.

W173DIP-1	3.8 VDC	5	100	250 mW	$6.25	$5.63	$5.31
W173DIP-2	4.5 VDC	6	100	360 mW	5.98	5.38	5.08
W173DIP-3	9.0 VDC	12	350	420 mW	5.98	5.38	5.08
W173DIP-4	18.0 VDC	24	1850	320 mW	6.16	5.54	5.24
W173DIP-5†	3.8 VDC	5	100	250 mW	6.95	6.26	5.91
W173DIP-6†	4.5 VDC	6	100	360 mW	6.66	5.99	5.66
W173DIP-7†	9.0 VDC	12	350	420 mW	6.66	5.99	5.66
W173DIP-8†	18.0 VDC	24	1850	320 mW	6.85	6.17	5.82

CLASS 117 DIP, DPST-NO
2 FORM A (PROFILE HEIGHT .210″)

Contacts rated 3 VA at .110 amp max. or 28 VDC resistive, max. Operate time, 200 µsec, typical. Dielectric strength, 200 VDC min. between contacts. Contact resistance, 200 milliohms, average. Life, 10 million operations, typical, longer at reduced loads.

W117DIP-9	3.8 VDC	5	200	125 mW	$5.75	$5.18	$4.89
W117DIP-10	4.5 VDC	6	200	180 mW	5.28	4.75	4.49
W117DIP-11	9.0 VDC	12	500	300 mW	5.28	4.75	4.49
W117DIP-12	18.0 VDC	24	1200	500 mW	5.60	5.04	4.76

*Resistance values ±10% measured at 25° C.
†Internal clamping diode included. Diode prevents back flow of high voltage transients.

CLASS 171 DIP, DPST-NO
2 FORM A (PROFILE HEIGHT .275″)

Contacts rated 3 VA or .110 amp max. or 28 VDC resistive, max. Operate time, 700 µsec, average. Contact bounce, less than 300 µsec, average. Dielectric strength, 200 VDC min. across open contacts; coil to contact, 750 VAC; between contact, 750 VAC. Contact resistance, 200 milliohms, average. Insulation resistance 10^{10} ohms, min. Life, 10 million operations, longer at reduced loads. Mechanical characteristics, shock 100 g's, ½ sine wave, 11 µsec. Vibration 100 g's, 10 to 200 Hz. Temp. range, −55° C to +85° C.

Magnecraft Number	Coil Data			Typical Power Required	Net Ea., Lots of*		
	Max. Pick-up Voltage	V	Ohms*		1-24	25-49	50-74
W171DIP-21	3.8 VDC	5	200	125 mW	$5.18	$4.66	$4.40
W171DIP-22	4.5 VDC	6	200	180 mW	4.98	4.48	4.23
W171DIP-23	9.0 VDC	12	500	290 mW	4.98	4.48	4.23
W171DIP-24	18.0 VDC	24	2200	270 mW	5.90	5.31	5.02
W171DIP-25†	3.8 VDC	5	200	125 mW	6.05	5.45	5.14
W171DIP-26†	4.5 VDC	6	200	180 mW	5.95	5.36	5.06
W171DIP-27†	9.0 VDC	12	500	290 mW	5.95	5.36	5.06
W171DIP-28†	18.0 VDC	24	2200	270 mW	6.18	5.56	5.25

CLASS 117 DIP, SPST-NC
1 FORM B (PROFILE HEIGHT .210″)

Contacts rated 3 VA at .110 amp max. or 28 VDC max. resistive. Operate time, 200 µsec, typical. Dielectric strength, 100 VDC min. between contacts. Contact resistance, 200 milliohms, average. Life, 10 million operations, longer at reduced loads. Higher ratings up to .5 amp at reduced life.

W117DIP-13	3.8 VDC	5	500	50 mW	$4.35	$3.92	$3.70

CLASS 171 DIP, SPST-NC
1 FORM B (PROFILE HEIGHT .275″)

Contacts rated 10 VA or .250 amp max. or 100 VDC max. resistive. Operate time, 400 µsec average. Contact bounce, less than 100 µsec, average. Dielectric strength, 250 VDC min. across open contacts; 750 VAC coil to contact. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{11} ohms min. Life, 10 million operations, typical, longer at reduced loads. Mechanical characteristics, shock 100 g's, ½ sine wave, 11 µsec; vibration 100 g's, 10 to 2000 Hz. Temperature range, −55° C to +85° C.

W171DIP-11	3.8 VDC	5	200	125 mW	$3.58	$3.22	$3.04
W171DIP-12	3.8 VDC	5	500	50 mW	3.78	3.40	3.21
W171DIP-13	4.5 VDC	6	500	75 mW	3.58	3.22	3.04
W171DIP-14	9.0 VDC	12	500	290 mW	3.58	3.22	3.04
W171DIP-15	18.0 VDC	24	2200	270 mW	3.75	3.38	3.19
W171DIP-16†	3.8 VDC	5	200	125 mW	3.85	3.47	3.27
W171DIP-17†	3.8 VDC	5	500	50 mW	4.05	3.65	3.44
W171DIP-18†	4.5 VDC	6	500	75 mW	3.85	3.47	3.27
W171DIP-19†	9.0 VDC	12	500	290 mW	3.85	3.47	3.27
W171DIP-20†	18.0 VDC	24	2200	270 mW	4.04	3.64	3.43

CLASS 118 DIP, SPDT
1 FORM C (PROFILE HEIGHT .210″)

Contacts rated 6 VA at .250 amp max. resistive. Operate time, 500 µsec, typical. Dielectric strength, 200 VDC, min. between contacts. Contact resistance, 150 milliohms, average. Life, 5 million typical at rated load. Longer life at reduced loads. Higher rating up to .5 amp at reduced life.

W118DIP-1	3.8 VDC	5	200	125 mW	$7.80	$7.02	$6.63
W118DIP-2	4.5 VDC	6	200	180 mW	7.30	6.57	6.21
W118DIP-3	9.0 VDC	12	500	300 mW	7.30	6.57	6.21
W118DIP-4	18.0 VDC	24	1200	500 mW	7.50	6.75	6.38
W118DIP-5†	3.8 VDC	5	200	125 mW	8.50	7.65	7.23
W118DIP-6†	4.5 VDC	6	200	180 mW	8.00	7.20	6.80
W118DIP-7†	9.0 VDC	12	500	300 mW	8.00	7.20	6.80
W118DIP-8†	18.0 VDC	24	1200	500 mW	8.25	7.43	7.01

CLASS 172 DIP, SPDT
1 FORM C (PROFILE HEIGHT .275″)

Contacts rated 8 VA at .250 amp max. or 100 VDC resistive, max. Operate time, 500 µsec, average. Contact bounce, less than 200 µsec, average. Dielectric strength, 250 VDC, min. across open contacts. Contact resistance, 150 milliohms, average. Insulation resistance, 10^{10} ohms, min. Life, 10 million operations, typical, longer at reduced loads. Mechanical characteristics, shock 100 g's, ½ sine wave, 11 µsec; vibration 100 g's, 10 to 200 Hz. Temperature range, −55° C to +85° C.

W172DIP-1	3.8 VDC	5	150	175 mW	$5.25	$4.73	$4.46
W172DIP-2	4.5 VDC	6	200	180 mW	4.97	4.47	4.22
W172DIP-3	9.0 VDC	12	500	290 mW	4.97	4.47	4.22
W172DIP-4	18.0 VDC	24	2200	270 mW	5.29	4.76	4.50
W172DIP-5†	3.8 VDC	5	150	175 mW	5.60	5.04	4.76
W172DIP-6†	4.5 VDC	6	200	180 mW	5.38	4.84	4.57
W172DIP-7†	9.0 VDC	12	500	290 mW	5.38	4.84	4.57
W172DIP-8†	18.0 VDC	24	2200	270 mW	5.70	5.13	4.85

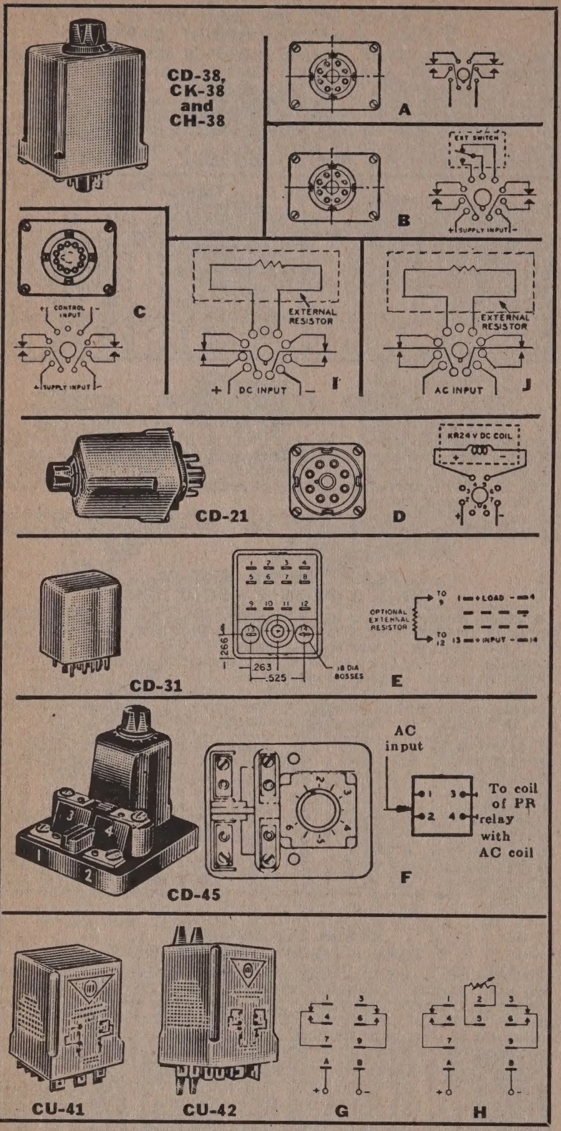
*Resistance values ±10% measured at 25° C.
†Internal clamping diode included. Diode prevents back flow of high voltage transients.

★LARGER QUANTITY DISCOUNTS

Lots of 75–99, −20%; 100–499, −30%; 500 Up, −35%. Quantities of 500 or more are bulk packed.

AMF | POTTER & BRUMFIELD Relays

SOLID STATE TIME DELAY RELAYS



CU SERIES LOW-COST RELAYS

Available in two types: Fixed time delay (Outline Drawing G) or adjustable with external resistor (Outline Drawing H). All have internal DPDT relay rated 10 amps at 120 VAC. Type CU-41 has plain case, 1.531″ x 1.406″ x 1.906″; mtg. accessories are available. Tpye CU-42 has slotted flange case. UL Recognized (File No. E22575). Weight, 3½ oz.

P&B Number	Out-line Dwg.	Time Delay, Seconds	Input Voltage	Ext. Resis. Ohms*	Net Each 1-9*
CUA41-70001	G	1	120 VAC	None	$14.95
CUA41-70010	G	10	120 VAC	None	14.95
CUA41-70120	G	120	120 VAC	None	16.60
CUA41-30010	G	10	24 VAC	None	14.95
CUC41-30010	G	10	24 VDC	None	14.95
CUC41-30120	G	120	24 VDC	None	16.60
CUA42-70010	G	10	120 VAC	None	14.95
CUA42-70120	G	120	120 VAC	None	16.60
CUA42-30010	G	10	24 VAC	None	14.95
CUC42-30010	G	10	24 VDC	None	14.95
CUC42-30120	G	120	24 VDC	None	16.60
CUF41-70010	H	1.0 to 10	120 VAC	200K	15.80
CUF41-70030	H	1.0 to 30	120 VAC	600K	16.35
CUF41-70120	H	1.0 to 120	120 VAC	2.4 megs	17.15
CUF41-30010	H	1.0 to 10	24 VAC	200K	15.80
CUH41-30010	H	1.0 to 10	24 VDC	160K	15.80
CUH41-30120	H	1.0 to 120	24 VDC	2 megs	17.15
CUF42-70010	H	1.0 to 10	120 VAC	200K	15.80
CUF42-70120	H	1.0 to 120	120 VAC	2.4 megs	17.15
CUF42-30010	H	1.0 to 10	24 VAC	200K	15.80
CUH42-30010	H	1.0 to 10	24 VDC	160K	15.80
CUH42-30120	H	1.0 to 120	24 VDC	2 megs	17.15

*Value of external resistor required for maximum delay time.

CD SERIES GENERAL PURPOSE TYPES

Dependable, accurate and flexible solid state relays. Choice knob-adjustable with relay in same enclosure (CD-38) or wi an auxiliary relay (CD-21 and CD-45) and external resistor adju able (DC-31). Delay on operate except CDB38-70012-CDB3 70015 and CDD38-30012, CDD38-30014 are delay on release wh control circuit is de-energized (supply must be energized co tinuously; see Outline Drawing C). Temp. range, −40° C +55° C. Repeatability, ±2% (CD-38, ±1%). Polarity protectio Size: **CD-38**, 1.781″ x 2.375″ x 3.562″ h.; wt., 8 oz. **CD-21**, 1.40 sq. x 2.562″ h.; wt., 4¼ oz. **CD-31**, .859″ x 1.109″ x 1.28″ h.; w 2 oz. **CD-45**, 2.5″ x 3″ x 2.75″ h.; wt., 9 oz.

P&B Number	Out-line Dwg.	Time Delay, Seconds	Input Voltage	Notes	Ne Eac 1-9
CDB38-70001	A	0.1 to 1	120 VAC	a	$46.
CDB38-70002	A	0.1 to 5	120 VAC	a	46.
CDB38-70003	A	0.1 to 10	120 VAC	a	46.
CDB38-70004	A	0.6 to 60	120 VAC	a	46.
CDB38-70005	A	1.8 to 180	120 VAC	a	46.
CDB38-30001	A	0.1 to 10	24 VAC	a	46.
CDB38-30002	A	0.6 to 6	24 VAC	a	46.
CDD38-30003	A	0.1 to 10	24 VDC	a	44.
CDD38-30004	A	0.6 to 60	24 VDC	a	44.
CDD38-30005	A	1.8 to 180	24 VDC	a	44.
CDD38-40002	A	0.6 to 60	48 VDC	a	44.
CDB38-70012	C	0.6 to 60	120 VAC	a, g	55.
CDB38-70014	C	0.1 to 10	120 VAC	a, g	55.
CDB38-70015	C	1.8 to 180	120 VAC	a, g	55.
CDD38-30008	C	1.8 to 18	24 VDC	a	52.
CDD38-30012	C	0.6 to 60	24 VDC	a, g	52.
CDD38-30014	C	0.1 to 10	24 VDC	a, g	52.
CDF38-70001	I	1 max.	120 VAC	a, h	43.
CDF38-70002	I	5 max.	120 VAC	a, i	43.
CDF38-70003	I	10 max.	120 VAC	a, k	43.
CDB21-70003	D	0.1 to 10	120 VAC	b	41.
CDB21-70001	D	1.8 to 180	120 VAC	b	41.
CDD21-30003	D	0.1 to 10	24 VDC	c	40.
CDD21-30001	D	1.8 to 180	24 VDC	c	40.
CDH31-30005	E	180 max.	24 VDC	d, e	41.
CDB45-70002	F	0.6 to 60	120 VAC	f	39.

CH SERIES LOW-COST TYPES

Engineered for a wide range of industrial applications whe not-too-critical performance suffices and where economy is mo important than precision timing accuracy. Enclosed in a mold white nylon dust cover. Knob-adjustable (except CHA38-7000 fixed delay) and have plug-in octal terminals. Accuracy, ±10% nominal. Repeatability, ±2%. Reset time, 100 msec. Operati temp., −10° C to +55° C. Dial setting, reference scale. Polari protection. Size, 1.781″ x 2.375″ x 3.562″ high, max. Weight, 4 o

P&B Number	Out-line Dwg.	Time Delay, Seconds	Input Voltage	Notes	Net Each 1-9
CHA38-70001	A	10	120 VAC	a	$19.
CHB38-30001	B	1.0 to 10	24 VAC	a	21.
CHB38-30003	B	1.0 to 180	24 VAC	a	21.
CHB38-30011	B	1.0 to 10	24 VAC	a, g	25.
CHB38-70001	B	1.0 to 10	120 VAC	a	21.
CHB38-70002	B	1.0 to 60	120 VAC	a	21.
CHB38-70003	B	1.0 to 180	120 VAC	a	21.
CHB38-70012	B	1.0 to 60	120 VAC	a, g	25.
CHB38-70021	B	1.0 to 10	120 VAC	a, j	25.
CHB38-70022	B	1.0 to 60	120 VAC	a	25.
CHB38-70023	B	1.0 to 180	120 VAC	a	25.
CHB38-80001	B	1.0 to 10	240 VAC	a	22.
CHD38-30001	A	1.0 to 10	24 VDC	a	19.
CHD38-30003	A	1.0 to 180	24 VDC	a	19.
CHD38-30021	B	1.0 to 10	24 VDC	a	23.
CHB38-70011*	B	1.0 to 10	120 VAC	a, g	25.
CHB38-70013*	B	1.0 to 180	120 VAC	a, g	25.
CHD38-30011*	B	1.0 to 10	24 VDC	a, g	23.
CHD38-30013*	B	1.0 to 180	24 VDC	a, g	23.

CK SERIES

Available in three types: Fixed, resistor adjustable and kno adjustable for delay on operate applications. Enclosed in whi nylon dust cover for compact and convenient assembly. Does n false operate and will time as low as 0.1 sec. For AC or DC appl cations where false operation cannot be tolerated. Knob adjus able except CKA, CKC, fixed delay; CKF, CKH, resistor adjus able. Equipped with plug-in octal type terminals. Polarity pr tection. Size, 2.375″ x 1.781″ x 3.562″ h. max. Weight, 4 oz.

CKA38-70010	A	10	120 VAC	a	$23.
CKC38-30010	A	10	24 VDC	a	22.
CKF38-70010	J	.1 to 10	120 VAC	a	23.
CKH38-30010	I	.1 to 10	24 VDC	a	22.
CKB38-30010	A	.1 to 10	24 VAC	a	24.
CKB38-70010	A	.1 to 10	120 VAC	a	24.
CKB38-70060	A	.6 to 60	120 VAC	a	24.
CKB38-70120	A	1.2 to 120	120 VAC	a	24.
CKD38-20010	A	.1 to 10	12 VDC	a	23.

Notes: a, Has internal relay with DPDT contacts rated at 1 amps, 120 VAC. **b,** Use with P&B Type KRP5AG, KRP11A or KRP14AG, 120 VAC relays. **c,** Use with P&B Type KRP5D KRP11DG or KRP14DG, 24 VDC relays. **d,** Use with P& Type KHP17D11, 24 VDC relay. **e,** As supplied, unit has fixe time delay of 180 secs; adjustable to 1.8 sec, with external resist (not furnished). **f,** Use with P&B Type PR11AY, 120 VA relay. **g,** Provides delay on release: all other types have dela on operate. **h,** Use 40K external resistor for max. time. **i,** Use 200 external resistor for max. time. **j,** Provides interval on operatio **k,** Use 750K resistor for max. time.
See another P&B page for accessories.

★QUANTITY PRICES AVAILABLE ON REQUEST

SOLID STATE FIXED AND ADJUSTABLE TIME DELAY RELAYS

CL SERIES FIXED AND ADJUSTABLE RELAYS

or applications where false operation cannot be tolerated. Designed or delay on operate. Similar to CU Series except do not false perate when timing interval is interrupted. Includes internally ounted, DPDT 10-amp relay enclosed in yellow polycarbonate ust cover. Available in fixed, resistor-adjustable or knob-adjustable types. Reset time 150 msec. Plug-in type terminals and arious enclosure styles available. Types CLA and CLC, fixed; ypes CLF and CLH, resistor adjustable; Type CLB, adjustable nob with reference scale. Size, 1.531″ x 1.406″ x 1.906″ max. xcept CLB style, 1.531″ x 1.406″ x 2.782″ max. including knob. Veight, 3.5 oz.

P & B Number	Out-Line Dwg.	Time Delay, Seconds	Input Voltage	Ext. Resis. Ohms*	Net Each 1-9*
LA41-70010	A	10	120 VAC	None	$18.25
LC41-30010	A	10	24 VDC	None	18.25
LF41-70010	B	.1 to 10	120 VAC	200K	19.85
LH41-30010	B	.1 to 10	24 VDC	160K	19.85
LB51-30010	B	.1 to 10	24 VAC	None	20.90
LB51-70010	B	.1 to 10	120 VAC	None	20.90
LB51-70120	B	1.2 to 120	120 VAC	None	22.25
LF42-70010	B	.1 to 10	120 VAC	200K	19.85

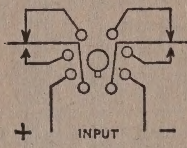
CUB SERIES KNOB-ADJUSTABLE RELAYS

esigned for delay on operate, DPDT relay and solid state elay circuit are assembled in a slightly taller case than other U types. Timing intervals adjustable over 1 to 10 and 1 to 120 econds. Repeatability ±3%. For 120 VAC operation. Size, .531″ x 1.406″ x 2.782″ max. including knob. Weight, 3.5 oz.

UB51-70010	A	1 to 10	120 VAC	None	$17.15
UB51-70120	A	1 to 120	120 VAC	None	18.80

*Value of external resistor required for maximum delay time.

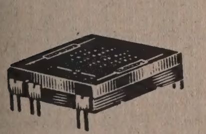
CR SERIES
KNOB-ADJUSTABLE RECYCLE TIMER

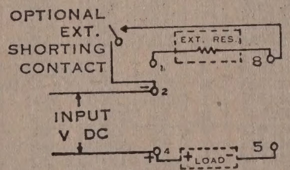


R series recycle timer has two independent control knobs for djusting On and Off delays from 1.8 to 180 seconds. The recycling equence is initiated by applying power to the terminals. **Size:** .375″ x 3.50″ x 1.750″.

P & B Number	Time Delay Seconds	Input Voltage	Net Each, Lots of 1-9	10-24	25-49	50-99
CRB48-30180	1.8 to 180	24 VAC	$45.45	$43.18	$40.91	$36.36
CRB48-70180	1.8 to 180	120 VAC	45.45	43.18	40.91	36.36
CRD48-30180	1.8 to 180	24 VDC	39.75	37.76	35.78	31.80

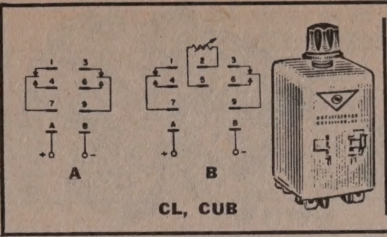
JT SERIES
HERMETICALLY SEALED ADJUSTABLE RELAYS

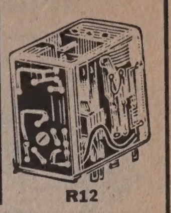




JT series measures .350″ high and is hermetically sealed in epoxy. Reset is accomplished by removal of input voltage. **Size:** 1.250″ x 1.300″ x .350″.

P & B Number	Time Delay Seconds	Input Voltage	Ext. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49	50-99
JTC55-30010	10	24 VDC	None	$10.55	$10.02	$ 9.50	$8.44
JTH55-30010	.1 to 10	24 VDC	887K	11.40	10.83	10.26	9.12



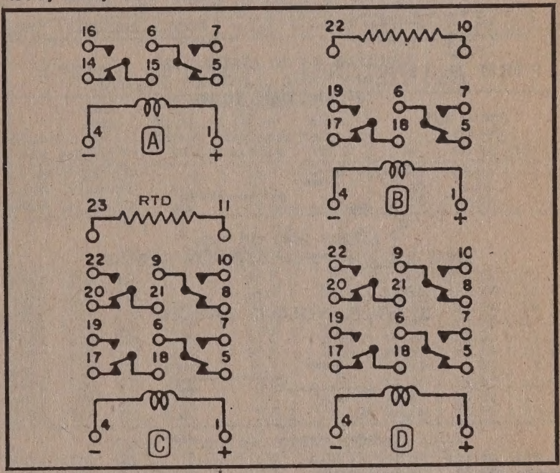


R12 SERIES VARIABLE TIME DELAY RELAY

Small size DPDT with 5 amp contacts and silicon transistor circuitry. Delay time .1 to 120 seconds in three ranges; no false operation. Critical timing capacitor meets military specifications; high resolution 15-turn potentiometer. Size, 1.375″ x .735″ x 1.187″.

P & B Number R12-	Delay Sec	Coil Volts DC	Net Each, Lots of 1-9	10-49	50-99	100-499	500-999*
2-12-X2-E1	0.1 to	12	$19.25	$17.33	$14.44	$13.48	$12.51
2-24-X2-E1	2.0	24	19.25	17.33	14.44	13.48	12.51
30-12-X2-E1	1.0 to	12	19.75	17.78	14.81	13.83	12.84
30-24-X2-E1	30	24	19.75	17.78	14.81	13.83	12.84
120-12-X2-E1	5.0 to	12	21.35	19.22	16.01	14.95	13.88
120-24-X2-E1	120	24	21.35	19.22	16.01	14.95	13.88

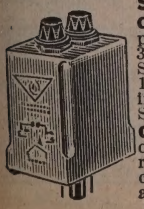
R13, R14, R15 SERIES FIXED AND ADJUSTABLE RELAYS



P & B Number	*	Delay Sec	Input Voltage	A	Con-tacts	Net Ea. 1-9
R13-1F-24-X2-E1	A	1.0	24 VDC	5	DPDT	$11.50
R13-1F-24-X4-E1	C	1.0	24 VDC	5	4PDT	12.95
R13-5F-24-X2-E1	A	5.0	24 VDC	5	DPDT	11.50
R13-5F-24-X4-E1	C	5.0	24 VDC	5	4PDT	12.95
R13-10F-12-X4-E1	C	10.0	12 VDC	5	4PDT	12.95
R13-10F-24-X2-E1	A	10.0	24 VDC	5	DPDT	11.50
R13-10F-24-X4-E1	C	10.0	24 VDC	5	4PDT	12.95
R13-60F-48-Y2-E1	A	60.0	48 VDC	2	DPDT	13.00
R13-120F-12-X4-E1	C	120.0	12 VDC	5	4PDT	15.10
R13-300F-12-X4-E1	C	300.0	12 VDC	5	4PDT	16.15
R13-300F-24-X4-E1	C	300.0	24 VDC	5	4PDT	16.15
R14-2A-12-X2-E1	B	.25–2	12 VDC	5	DPDT	15.45
R14-2A-12-X4-E1	D	.25–2	12 VDC	5	4PDT	16.70
R14-30A-24-X2-E1	B	.5–30	12 VDC	5	DPDT	16.25
R14-30A-24-X2-E1	D	.5–30	12 VDC	5	4PDT	17.50
R14-120A-24-X2-E1	B	5–120	24 VDC	5	DPDT	17.05
R14-120A-24-X4-E1	D	5–120	24 VDC	5	4PDT	18.25
R15-10A-24-W2-E1	B	.5–10	24 VAC	10	DPDT	17.60
R15-10A-24-W4-E1	D	.5–10	24 VAC	10	4PDT	19.25
R15-30A-115-X2-E1	B	.5–30	115 VAC	5	DPDT	17.60
R15-30A-115-X4-E1	D	.5–30	115 VAC	5	4PDT	18.80
R15-60A-115-Y2-E1	B	1–60	115 VAC	2	DPDT	17.50
R15-60A-115-Y4-E1	D	1–60	115 VAC	2	4PDT	18.55

*Outline drawing. Write for information on R14A, R15A series.

SOLID STATE CPS SEQUENCE SENSOR AND CS SERIES VOLTAGE SENSORS

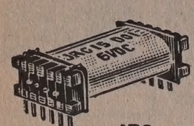


CPS 3-Phase Sequence Sensor—Detects reverse phase sequence and provides positive control of 3-phase, wye-connected 4-wire 60 Hz circuits. SPDT silver cadmium-oxide contacts, 10 A at 120 V rms resis. Continuous duty coil operates in 120/208 V, 60 Hz, 3-phase, 4-wire systems. Size, 2.375″ x 1.750″ x 2.875″. Net, 1-9. **$35.55***

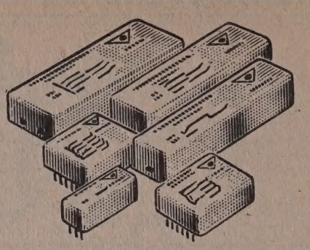
CS Series Voltage Sensors—Sensing circuit turns on solid state switch, energizing relay. Switch and relay rated at 3 A enclosed in molded nylon dust cover. Two Form C (DPDT) contacts rated 3 A at 28 VDC resis. Cont. duty coils operate at 1.5 W DC, 1.0 VA AC approx. Operate time 25 ms at nom. voltage and 25° C. Temp. range, −10° to +55° C. Reverse polarity protected. Size, 2.375″ x 1.750″ x 3.593″ seated.

P & B Number	Pick-up Volts	Drop-Out Volts	Nom. Voltage	Net 1-9*
CSJ38-30010	20–30	18–28	24 VAC	$31.75
CSJ38-70010	92–140	90–138	120 VAC	34.65
CSL38-30010	20–30	18–28	24 VDC	27.55
CSL38-60010	92–140	90–138	120 VAC	31.75
CSJ38-71010	105	90–103	120 VAC	30.70
CSL38-31010	22	16–20	24 VDC	24.35

LARGER QUANTITY PRICES ON REQUEST (SEE ANOTHER P & B PAGE FOR ACCESSORIES)

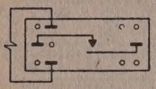


JRC

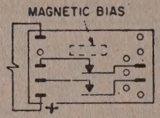


JR, JRL and JRM

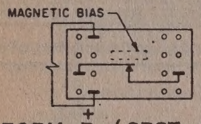
BOTTOM VIEW



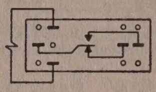
FORM A (SPST, NO)



FORM C (A+B) (SPDT)

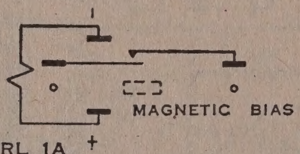


FORM B (SPST, NC)

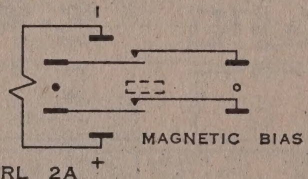


FORM C (SPDT)

JR and JRM Series



JRL 1A
SINGLE WOUND LATCH



JRL 2A
SINGLE WOUND LATCH

JRL Series

MINIATURE OPEN STYLE DRY REED RELAYS

JRC SERIES

PC terminals arranged on 0.100″ x 1.00″ grid layout. Rhodium contacts rated 10 watts max.; 0.5 amp max. and 125 V max. for DC resistive loads. Operate speed of 1 msec typ. including bounce for pick-up; 0.5 msec for drop-out. Contact protection is recommended to assure long operating life. **Size:** 1.14″ l. x .360″ h. max. Wt., 0.3 to 1.0 oz. approx.

P&B No.	Cavity		Coil		Contact Arrangement	Net Ea., Lots of*		
	No.	Width, In.	Nom. V	Resis. Ohms		1-24	25-49	50-74
JRC1DA1	1	.375	6	240	1A	**$3.75**	**$3.38**	**$3.19**
			12	960	1A	**3.75**	**3.38**	**3.19**
			24	3840	1A	**4.40**	**3.96**	**3.74**
JRC2DB1	2	.460	6	155	1B	**4.15**	**3.74**	**3.53**
			12	625	1B	**4.15**	**3.74**	**3.53**
			24	2500	1B	**4.45**	**4.01**	**3.78**
JRC7DB1	2	.460	6	155	2A	**4.75**	**4.28**	**4.04**
			12	625	2A	**4.75**	**4.28**	**4.04**
			24	2500	2A	**5.45**	**4.91**	**4.63**
JRC15DD1	4	.660	6	80	4A	**6.95**	**6.26**	**5.91**
			12	320	4A	**6.95**	**6.26**	**5.91**
			24	1280	4A	**7.45**	**6.71**	**6.33**
JRC50DD1	4	.660	6	80	1A+1B	**5.45**	**4.91**	**4.63**
			12	320	1A+1B	**5.45**	**4.91**	**4.63**
			24	1280	1A+1B	**5.60**	**5.04**	**4.76**
JRC60DF1	6	.760	6	45	2A+2B	**6.85**	**6.17**	**5.82**
			12	180	2A+2B	**6.85**	**6.17**	**5.82**
			24	720	2A+2B	**7.00**	**6.30**	**5.95**

JR AND JRM SERIES DRY REED RELAYS

Fast response, reliable performance, high sensitivity and long lif are characteristic of JR standard and JRM miniature relay Specially suited for data processing applications, computer equip ment, logic circuitry and various other sophisticated control ci cuits. Both JR and JRM relays have reed switches with eithe Form A (SPST-NO) or Form C (SPDT) contact configuration Biasing with a permanent magnet changes Form A to a Form (SPST-NC); arrangement requires that coil polarity is observed Combining one Form A with one Form B results in a single Form (SPDT) break-before-make. A "true" Form C (SPDT) uses a ree switch with two stationary and one movable contact (movabl contact is normally closed until the coil is energized). **Size:** 2.718 l. x 0.656″ h. max. (JR); 1.125″ l. x 0.468″ h. max. (JRM).

JR STANDARD SERIES				JRM MINIATURE SERIES			
Cavity		Coil Power/ Capsule	Wt., Oz.	Cavity		Coil Power/ Capsule	Wt., Oz.
No.	Width, Inches			No.	Width, Inches		
1	.687	240 mW	1.5	1	.437	180 mW	.366
2	.890	360 mW	2.0	2	.562	275 mW	.395
3	1.094	720 mW	2.5	3	.703	420 mW	.530
4	1.297	960 mW	3.0	4	.813	540 mW	.620
5	1.516	1.5 W	3.5	5	.968	720 mW	.781

JR STANDARD SERIES

P&B No.	No. Cavities	Coil		Contacts		Net Each, Lots of*		
		Nom. V	Res. Ohms	Arrangement	Rating	1-9	10-24	25-99
JR1000	1	6	150	1A	15 W	**$3.40**	**$2.54**	**$2.16**
JR1001	2	6	100	2A	15 W	**4.55**	**3.39**	**2.89**
JR1020	1	6	150	1A	50 W	**4.80**	**3.58**	**3.05**
JR1040	1	6	150	1C*	10 W	**8.50**	**6.34**	**5.40**
JR1041	2	6	100	2C*	10 W	**9.30**	**6.94**	**5.91**
JR1060	2	6	100	1B	15 W	**4.55**	**3.39**	**2.89**
JR1005	1	12	600	1A	15 W	**3.40**	**2.54**	**2.16**
JR1006	2	12	400	2A	15 W	**4.55**	**3.39**	**2.89**
JR1008	4	12	150	4A	15 W	**6.35**	**4.74**	**4.03**
JR1025	1	12	600	1A	50 W	**4.80**	**3.58**	**3.05**
JR1045	1	12	600	1C*	10 W	**8.50**	**6.34**	**5.40**
JR1046	2	12	400	2C*	10 W	**9.30**	**6.94**	**5.91**
JR1063	2	12	400	1B	15 W	**4.55**	**3.39**	**2.89**
JR1086	3	12	200	1A+1B	15 W	**5.60**	**4.18**	**3.56**
JR1010	1	24	2400	1A	15 W	**4.00**	**2.98**	**2.54**
JR1011	2	24	1600	2A	15 W	**4.85**	**3.62**	**3.08**
JR1013	4	24	600	4A	15 W	**6.65**	**4.96**	**4.22**
JR1030	1	24	2400	1A	50 W	**5.15**	**3.84**	**3.27**
JR1031	2	24	1600	2A	50 W	**7.65**	**5.71**	**4.86**
JR1050	1	24	2400	1C*	10 W	**8.85**	**6.60**	**5.62**
JR1051	2	24	1600	2C*	10 W	**9.40**	**7.01**	**5.97**
JR1066	2	24	1600	1B	15 W	**4.60**	**3.43**	**2.92**
JR1088	3	24	800	1A+1B	15 W	**6.00**	**4.48**	**3.81**
JR1089	5	24	384	2A+2B	15 W	**9.25**	**6.90**	**5.87**

*True Form C.

JRM MINIATURE SERIES

P&B No.	No. Cavities	Coil		Contacts		Net Each, Lots of*		
		Nom. V	Res. Ohms	Arrangement	Rating	1-9	10-24	25-99
JRM1000	1	6	200	1A	10 W	**$3.70**	**$2.76**	**$2.35**
JRM1001	2	6	130	2A	10 W	**5.35**	**3.99**	**3.40**
JRM1003	4	6	67	4A	10 W	**8.50**	**6.34**	**5.40**
JRM1036	2	6	130	1B	10 W	**4.65**	**3.47**	**2.95**
JRM1037	3	6	86	2B	10 W	**6.25**	**4.66**	**3.97**
JRM1048	3	6	86	1A+1B	10 W	**6.25**	**4.66**	**3.97**
JRM1049	5	6	50	2A+2B	10 W	**9.55**	**7.12**	**6.06**
JRM1006	1	12	800	1A	10 W	**3.70**	**2.76**	**2.35**
JRM1007	2	12	520	2A	10 W	**5.35**	**3.99**	**3.40**
JRM1009	4	12	268	4A	10 W	**8.50**	**6.34**	**5.40**
JRM1040	2	12	520	1B	10 W	**4.65**	**3.47**	**2.95**
JRM1041	3	12	344	2B	10 W	**6.25**	**4.66**	**3.97**
JRM1050	3	12	344	1A+1B	10 W	**6.25**	**4.66**	**3.97**
JRM1051	5	12	200	2A+2B	10 W	**9.55**	**7.12**	**6.06**
JRM1012	1	24	3200	1A	10 W	**4.05**	**3.02**	**2.57**
JRM1013	2	24	2080	2A	10 W	**5.50**	**4.10**	**3.49**
JRM1015	4	24	1072	4A	10 W	**8.60**	**6.42**	**5.46**
JRM1044	2	24	2080	1B	10 W	**4.80**	**3.58**	**3.05**
JRM1045	3	24	1376	2B	10 W	**6.40**	**4.77**	**4.06**
JRM1052	3	24	1376	1A+1B	10 W	**6.40**	**4.77**	**4.06**
JRM1053	5	24	800	2A+2B	10 W	**9.70**	**7.24**	**6.16**

JRL SERIES DRY REED LATCHING RELAYS

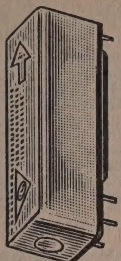
Reliable bi-stable relays designed for memory work. Single-wound coils switch contacts on polarity reversal. Needs no coil current to maintain contact in either position. Can be mounted on PC boards in any position; not position sensitive. **Contact Arrangement:** 1 Form A and 2 Form A rated 15 watts resistive. **Operate Time:** 1.0 msec at 25° C including bounce. **Size:** Same as JR standard series above. Weight, same as JR standard series above.

P&B No.	No. Cavities	Coil		Contacts		Net Each, Lots of*		
		Nom. VDC	Res. Ohms	Arrangement	Rating	1-9	10-24	25-99
JRL1000	2	6	400	1 A	15 W	**$5.05**	**$3.77**	**$3.21**
JRL1001	2	12	1600	1 A	15 W	**5.05**	**3.77**	**3.21**
JRL1002	2	24	6400	1 A	15 W	**5.55**	**4.14**	**3.52**
JRL1012	3	6	300	2 A	15 W	**7.15**	**5.33**	**4.54**
JRL1013	3	12	1200	2 A	15 W	**7.15**	**5.33**	**4.54**
JRL1014	3	24	4800	2 A	15 W	**7.50**	**5.60**	**4.76**

★LARGER QUANTITY PRICES ON REQUEST

JM SERIES MERCURY-WETTED CONTACT RELAYS

JM1 119 11


JMS 5040 62

Reservoir of mercury and contact assembly are hermetically sealed under high pressure hydrogen atmosphere to do away with contact chatter and bounce. Make or break is positive every time. Capsule used in JMF, JMF2 (2 capsules), JML and JMS relays has a SPDT, break-before-make (Form C), non-bridging contact arrangement. Each capsule used in JM1–JM4, JMD and JMP relays has a SPDT, make-before-break (Form D), bridging contact arrangement. JMF, JMF2, JML, JMP and JMS series achieve a high rate of sensitivity by factory-adjusted magnet biasing. Upright mounting required, but deviation from upright up to 30° causes only minor eviation in operating characteristics. **Contact Ratings:** JMF, MF2, JML and JMS 500 volts max. and 2 amps max., with ontact protection unless in a low level circuit. Details of a mple protection circuit consisting of resistor and capacitor in eries are included with each relay. JM1 thru JM4, JMD and MP 500 volts max. and 5 amps max., 250 VA max. Octal style ounting except Fig. 41, 14-pin miniature plug; JMD, JMF, MF2 and JMS are designed for printed circuit board mounting n 0.200″ grid spacing. Sizes given are overall.

P & B Capsule	Size, Inches Dia. x H.	P & B Capsule	Size, Inches W. x D. x H.
JM1	1.105 x 3.196	JMD	0.750 x 0.750 x 3.190
JM2, JM3	1.531 x 3.937	JMF	0.625 x 0.625 x 2.062
JM4	1.687 x 3.562	JMF2	1.120 x 0.78 x 2.07
JML	1.234 x 3.218	JMS	0.625 x 0.625 x 2.062
JMP	1.110 x 3.665		

JMS SENSITIVE SERIES IN PC MODULE

BI-STABLE, DUAL-WOUND COIL

ated 20 mW per winding. Resistance value given is per winding.

Capsule	Coil and Terminal*	Coil Characteristics			Net Each, Lots of		
		Resis., Ohms (±10%)	Must Operate mADC	Max. VDC	1-9	10-24	25-99
MS	5040 62	325	±7	24	$11.95	$8.91	$7.59
MS	5070 62	1250	±3.6	47	12.55	9.36	7.97

40 mW SINGLE-SIDE-STABLE, SINGLE-WOUND COIL

MS	1070 61	34	32	7.7	$11.95	$8.91	$7.59
MS	1130 61	620	7	33	11.95	8.91	7.59
MS	1160 61	2430	3.6	65	12.55	9.36	7.97
MS	1190 61	8600	2.0	122	12.55	9.36	7.97

JML SENSITIVE SERIES

SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Coil Characteristics			Net Each, Lots of		
		Resis., Ohms (±10%)	Must Operate mADC	Must Release mADC	1-9	10-24	25-99
ML	1061 81	40	9.75	1.68	$14.75	$11.00	$ 9.37
ML	1110 81	350	3.56	.61	14.75	11.00	9.37
ML	1160 81	1000	2.21	.38	14.75	11.00	9.37
ML	1190 81	2500	1.43	.17	15.75	11.75	10.00
ML	1200 81	4000	1.25	.25	15.75	11.75	10.00
ML	1240 81	11000	.72	.12	15.75	11.75	10.00
ML	1260 81	25000	.52	.09	15.75	11.75	10.00

BI-STABLE

ML	5200 81	4000	+0.53	−0.53	$15.75	$11.75	$10.00
ML	5430 82	(1) 1100 (2) 1100	+1.76	−1.76	17.25	12.87	10.95

CHOPPER (60-Hz)

ML	8130 81	600	6.3 V rms		$15.40	$11.49	$9.78

JMF SENSITIVE SERIES IN PC MODULE

SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Coil Characteristics			Net Each, Lots of		
		Resis., Ohms (±10%)	Must Operate mADC	Must Release mADC	1-9	10-24	25-99
JMF	1070 61	450	12.9	2.1	$11.95	$8.91	$7.59
JMF	1080 61	675	11.6	1.9	11.95	8.91	7.59
JMF	1120 61	1425	8.4	1.4	11.95	8.91	7.59
JMF	1150 61	2400	7.8	1.3	11.95	8.91	7.59
JMF	1160 61	4000	4.0	.67	12.55	9.36	7.97

BI-STABLE

JMF	5080 61	675	+5.4	−5.4	$11.95	$8.91	$7.59

JMF2 DUAL-CAPSULE SENSITIVE SERIES

SINGLE-SIDE-STABLE

JMF2	1000 71	130	3 VDC	.5 VDC	$22.90	$17.08	$14.54
JMF2	1001 71	520	6 VDC	1 VDC	22.90	17.08	14.54
JMF2	1002 71	2200	12 VDC	2 VDC	23.45	17.49	14.89

JMP POLARIZED SERIES

SINGLE-SIDE-STABLE

Capsule	Coil and Terminal*	Coil Characteristics			Net Each, Lots of		
		Resis., Ohms (±10%)	Must Operate mADC	Must Release mADC	1-9	10-24	25-99
JMP	1160 11	1000	5.60	.40	$19.35	$14.44	$12.29
JMP	1200 11	4000	2.96	.24	20.75	15.48	13.18

BI-STABLE

JMP	5200 11	4000	+1.5	−1.5	$20.75	$15.48	$13.18

JMD SERIES IN PC MODULE

SINGLE CAPSULE, SPDT SINGLE COIL

Capsule	Coil and Terminal*	Coil Characteristics			Net Each, Lots of		
		Resis., Ohms (±10%)	Must Operate mADC	Max. Volts at 35° C	1-9	10-24	25-99
JMD	1060 63	150	55.0	18	$12.10	$9.03	$7.68
JMD	1090 63	450	33.5	30	12.10	9.03	7.68
JMD	1100 63	750	24.3	39	12.10	9.03	7.68

JM1 TO JM4 SERIES

SINGLE CAPSULE, SPDT SINGLE COIL

JM1	106 12	40	67.7	9.0	$17.85	$13.32	$11.33
JM1	109 12	130	38.8	16.1	17.85	13.32	11.33
JM1	112 11	500	20.1	31.6	17.85	13.32	11.33
JM1	114 11	700	20.0	37.4	17.85	13.32	11.33
JM1	114 12	700	20.0	37.4	17.85	13.32	11.33
JM1	118 11	2500	10.1	70.7	18.15	13.54	11.53
JM1	119 11	4000	8.1	89.5	9.05	9.05	9.05
JM1	120 11	7000	6.0	117.0	18.80	14.02	11.94
JM1	121 11	11K	5.0	148.0	18.80	14.02	11.94
JM1	123 11	25K	3.6	224.0	18.80	14.02	11.94

TWO CAPSULES, DPDT SINGLE COIL

JM2	104 22	50	110.0	12.25	$28.95	$21.60	$18.38
JM2	106 21	140	66.5	20.5	28.95	21.60	18.38
JM2	109 22	315	44.0	30.7	28.95	21.60	18.38
JM2	110 22	500	34.8	38.7	28.95	21.60	18.38
JM2	111 22	700	30.5	45.8	28.95	21.60	18.38
JM2	112 22	1250	22.1	61.2	28.95	21.60	18.38
JM2	115 21	5000	11.3	122.0	28.95	21.60	18.38
JM2	115 22	5000	11.3	122.0	28.95	21.60	18.38

THREE CAPSULES, 3PDT SINGLE COIL

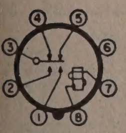
JM3	109 31	315	44.0	30.7	$37.45	$27.94	$23.78
JM3	110 31	500	34.8	38.7	37.45	27.94	23.78
JM3	111 31	700	30.5	45.8	37.45	27.94	23.78
JM3	115 31	5000	11.3	122.0	37.45	27.94	23.78

FOUR CAPSULES, 4PDT SINGLE COIL

JM4	106 41	65	100.0	15.1	$48.25	$35.99	$30.64
JM4	110 41	390	42.0	37.0	48.25	35.99	30.64

*Last two digits indicate termination diagram figure, e.g., JML 1061 **81**, see Figure 81; JM1 106 **12**, see Figure 12.

TERMINATION DIAGRAMS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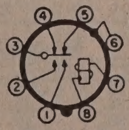
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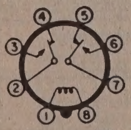
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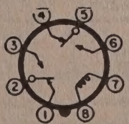
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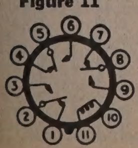
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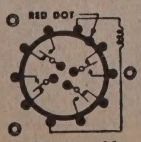

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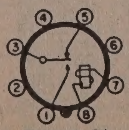
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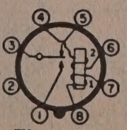
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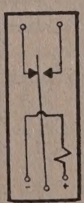
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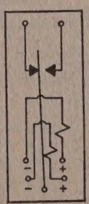
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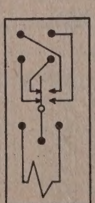
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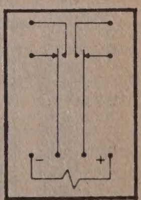
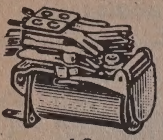


Figure 71

AMF | POTTER & BRUMFIELD Relays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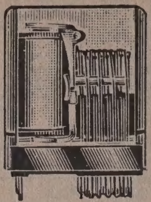
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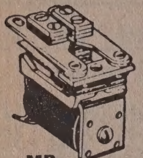
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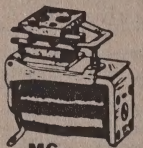
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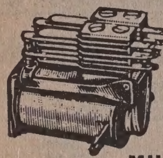
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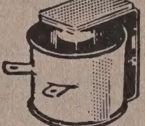
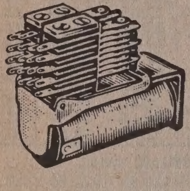
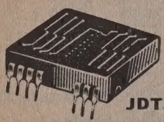
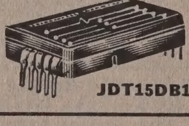

BU


ML


JDT21DC1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TELEPHONE TYPE RELAYS

LS Series: Short springs, light weight armature for fast action with reliability, long life. Stainless steel hinge bearing gives 100 million operations. Twin palladium contacts rated 4 amps. Tinned pierced solder terminals. Two 6-32 mtg. holes on ¾″ ctrs. 2⅛″ x 1⅛″ x 1 11/16″. Wt., 4 oz.

LSP Series: Identical to LS Series, but enclosed in plastic cover and has rectangular socket with combination taper tab or solder terminations. Plugs in. LSP17D types have 16-pin socket; size, 1 23/32″ x 1 25/64″ x 2 33/64″ seated; wt., 4 oz. LSP23D types have 28-pin socket; size, 2 7/64″ x 1 25/64″ x 2 33/64″ seated; wt., 4½ oz.

MB Series: Miniature DC contactor for very high current uses. Heavy brass arms with silver contacts rated 60 amps; solder terminals. Four 3-48 mtg. holes on ⅜″ centers. Size, 1 21/32″ x ⅞″ x 1 7/16″. Wt., 2 oz.

MC Series: Low loss at high frequency using ceramic spacers; intercontact capacitance, 1.5 pF. Palladium contacts rated 1 amp. Tinned pierced solder terminals Four 3-48 mtg. holes on ⅜″ centers. Size 1 17/32″ x ¾″ x 1 25/32″. Weight, 2 oz.

MH Series: Fast acting, long life miniature. Gold-flashed silver contacts rated 3 amps for MH11L and LM; 5 amps for all others. Hooked solder terminals on sealed models. Mounting: Open, MH11L, 6-32 stud 1 1/32″ long plus locating boss; other open models have four 3-48 holes on ⅜″ centers. Sealed, AMR, -LM and -DM, three 6-32 NC-2 studs on 1¼″ x ½″ ctrs.; -DD, -D, three 6-32 studs on 1 3/16″ x 15/16″ ctrs. Size, 1 21/32″ x 1 17/32″ x ¾″. Weight: Open, 2½ oz. max.; sealed, 5 oz. maximum.

ML Series: Small relay with excellent sensitivity and outstanding switching capability for transistorized networks, etc. Single contact arms have gold-flashed silver contacts rated 3 amps for 100,000 operations. Pierced solder terminals. Four 3-48 mtg. holes on ⅜″ centers. Size, ¾″ x 1 31/32″ x 1 19/32″. Weight, 2½ oz.

LS AND LSP RELAYS

P & B No.	Contacts	Coil VDC	Net Each, Lots of 1-20	Net Each, Lots of 21-499	P & B No.	Contacts	Coil VDC	Net Each, Lots of 1-20	Net Each, Lots of 21-499
LS17D	4PDT	24	$ 7.55	$6.39	LS23D	6PDT	24	$ 9.10	$ 7.70
LS17D	4PDT	48	7.75	6.56	LS23D	6PDT	110	9.55	8.08
LS17D	4PDT	110	8.05	6.81	LSP23D	6PDT	24	12.15	10.28
LSP17D	4PDT	24	9.75	8.25	LSP23D	6PDT	48	12.25	10.36
LSP17D	4PDT	48	9.90	8.38	LSP23D	6PDT	110	12.60	10.66
LSP17D	4PDT	110	10.25	8.67					

MB, MC, MH AND ML RELAYS

P & B Number	Contacts	Coil Voltage or Current	Net Each, Lots of* 1-24	25-50	51-99	100-249
MB3D	SPST-NO-DM	6 VDC	$ 7.00	$ 6.65	$ 6.30	$ 4.90
MB3D	SPST-NO-DM	12 or 24 VDC	7.15	6.79	6.44	5.01
MB3D	SPST-NO-DM	110 VDC	7.65	7.27	6.89	5.36
MC5A	SPDT	6 VAC	6.85	6.51	6.17	4.80
MC11A	DPDT	120 VAC	9.40	8.93	8.46	6.58
MC5D	SPDT	12 or 24 VDC	6.00	5.70	5.40	4.20
MC11D	DPDT	24 VDC	8.65	8.22	7.79	6.06
MH11L	DPDT	4.5 mA; 10K ohms resis.	7.75	7.36	6.98	5.43
MH11LM*	DPDT	4.5 mA; 10K ohms resis.	13.15	12.49	11.84	9.21
MH17D	4PDT	6, 12 or 24 VDC	7.80	7.41	7.02	5.46
MH17DM*	4PDT	12 or 24 VDC	15.70	14.92	14.13	10.99
MH17AMR*	4PDT	120 VAC	25.65	24.37	23.09	17.96
MH23D	6PDT	6, 12 or 24 VDC	9.80	9.31	8.82	6.86
MH23D	6PDT	110 VDC	10.40	9.88	9.36	7.28
MH23DD*	6PDT	12 or 24 VDC	20.85	19.81	18.77	14.60
ML11D	DPDT	4.0 mA; 2500 ohms, resis.	8.25	7.84	7.43	5.78
ML11D	DPDT	2.83 mA; 5K ohms, resis.	8.45	8.03	7.61	5.92
ML11D	DPDT	2.0 mA; 10K ohms, resis.	8.85	8.41	7.97	6.20
ML17D	4PDT	5.65 mA; 2500 ohms, resis.	9.80	9.31	8.82	6.86
ML17D	4PDT	4.0 mA; 5K ohms, resis.	10.00	9.50	9.00	7.00
ML17D	4PDT	2.83 mA; 10K ohms, resis.	10.40	9.88	9.36	7.28
ML23D	6PDT	6.93 mA; 2500 ohms, resis.	11.05	10.50	9.95	7.74
ML23D	6PDT	3.4 mA; 10K ohms, resis.	11.65	11.07	10.49	8.16

*Sealed relay. †Enclosed relay.

BU SERIES BUZZER

AC operated coil with a spring steel armature buzzes when coil is energized. Used extensively in test equipment, labs or wherever a small, lightweight dependable buzzer is required. No. 6-32 tapped core mounting. UL Component Recognized. Size, 1.032″ x 1.375″ x 1.032″. Weight, 1⅝ oz.

P & B No.	Coil Voltages	Net Each, Lots of* 1-24	25-50	51-99	100-249
BU	6, 12, 24 or 120 VAC	$2.20	$2.09	$1.98	$1.54
BU	240 VAC	2.70	2.57	2.43	1.89

JDT SERIES DUAL THIN-LINE REED RELAYS

Low profile ideal for high density packaging applications; for multiple-function switching. Hermetically sealed dry reed switches rated 10 watts max. resistive; continuous duty DC operation. Encapsulated in epoxy; dual inline terminals are on .100″ centers. Operate time, 3.5 msec max. including bounce; release time, 3.5 msec max. Coil resistance at ±10% at 25° C.

P & B Number	Poles	Coil VDC	Coil Resistance, Ohms	Coil Power, mW	Max. Dimensions, Inches W. x D. x H.	Net Each, Lots of* 1-9	10-24	25-99	100-249
JDT7DA1	2 "A"	6	115	310	1.250 x .600 x .275	$ 6.20	$ 4.63	$3.94	$3.57
JDT7DA1	2 "A"	12	460	310	1.250 x .600 x .275	6.20	4.63	3.94	3.57
JDT7DA1	2 "A"	24	1840	310	1.250 x .600 x .275	6.90	5.15	4.38	3.97
JDT15DB1	4 "A"	6	115	310	1.250 x .800 x .275	8.25	6.15	5.24	4.74
JDT15DB1	4 "A"	12	460	310	1.250 x .800 x .275	8.25	6.15	5.24	4.74
JDT15DB1	4 "A"	24	1840	310	1.250 x .800 x .275	8.95	6.68	5.68	5.15
JDT21DC1	6 "A"	6	100	360	1.250 x 1.100 x .275	11.75	8.77	7.46	6.76
JDT21DC1	6 "A"	12	400	360	1.250 x 1.100 x .275	11.75	8.77	7.46	6.76
JDT21DC1	6 "A"	24	1600	360	1.250 x 1.100 x .275	12.45	9.29	7.91	7.16
JDT27DD1	8 "A"	6	60	600	1.250 x 1.300 x .275	13.90	10.37	8.83	7.99
JDT27DD1	8 "A"	12	240	600	1.250 x 1.300 x .275	13.90	10.37	8.83	7.99
JDT27DD1	8 "A"	24	960	600	1.250 x 1.300 x .275	14.70	10.97	9.33	8.45

★LARGER QUANTITY PRICES ON REQUEST (SEE ANOTHER P & B PAGE FOR ACCESSORIES)

AMF | POTTER & BRUMFIELD Relays

SENSITIVE RELAYS

W Series: Precision, lightweight, her-etically sealed relay for aircraft, missile plications. Withstand 10G vibration to 0 Hz. Rated 2 amps. Sensitivity, 180 W for voltage actuated, 40 mW for cur-nt actuated models. Standard 7-pin min-ture tube base mounting. Size, 1 11/16" x 65" dia. Weight, 1 oz.

S Series: Small, low cost, sensitive relay r radio-sonde, light dimmer and model es. Voltage and current actuated (60 mW nsitivity) models. Two 4-40 mtg. holes on ¾" x ⅝" diagonal centers. Bar palladium contacts rated 2 amps. Size, 1" x 1 11/64" x 15/16". Weight, 1½ oz.

SS Series: Ultra-sensitive, precision relay has dual series-connected coils with balanced armature on needle-point bearings for low energy circuits. May be used as a differential relay by connecting the two coils in separate circuits. Sensitivity 10 mW. Silver contacts rated 2 amps. Two 6-32 mtg. holes on 23/32" centers. Size, 1 5/16" x 1¾" x 1 11/16". Weight, 3½ oz.

P & B lumber	Contacts	Coil Voltages or Current	Net Each, Lots of*			
			1-24	25-50	51-99	100-249
W5DS	SPDT	6, 12 or 24 VDC	$13.95	$13.25	$12.56	$ 9.77
W5LS	SPDT	2.8 mA at 5,000 ohms	14.50	13.78	13.05	10.15
W5LS	SPDT	2.0 mA at 10,000 ohms	15.00	14.25	13.50	10.50
S5D	SPDT	6 VDC	3.30	3.14	2.97	2.31
S5D	SPDT	12 VDC	3.45	3.28	3.11	2.42
S5D	SPDT	5 mA at 2,500 ohms	3.55	3.37	3.20	2.49
S5D	SPDT	3.5 mA at 5,000 ohms	3.85	3.66	3.47	2.70
S5D	SPDT	2.5 mA at 10,000 ohms	4.50	4.28	4.05	3.15
55D	SPDT	1 mA at 10,000 ohms	18.05	17.15	16.25	12.64

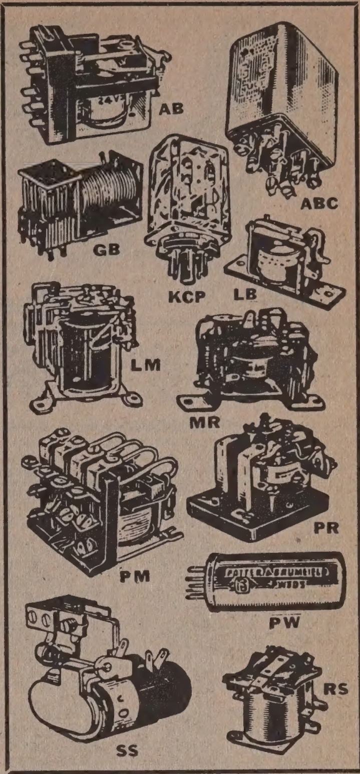
or use in photoelectric, counting bridges and similar control applications.

B Series: Medium cost high quality relay. Silver contacts rated 5 amps. Sensitivity 5 mW for SP, 125 mW for DP, 275 mW for 4P models. Non-adjustable pick-up. Mount 8-32 tapped core and locating boss. Size, 2 15/16" x 1 23/32" x 1 1/16". Weight, 5 oz.

CP Series: Low cost relay in clear polycarbonate case. Gold-flashed, silver contacts ted 2 amps. Sensitivity 125 mW for SP, 250 mW for DP and 375 mW for 3P models. andard octal plug-in mount: 8-pin for KCP5 and KCP11; 11-pin for KCP14. Size, 3/32" x 1 13/32" x 2". Weight, 3 oz.

B Series: Top performance, long life at low cost. Factory adjusted coil for minimum rrent. Silver contacts rated 5 amps. Sensitivity, 200 mW. Two 3/16" mtg. holes on 2 7/32" nters. Size, 1¼" x 2 21/32" x 1⅜". Weight, 2 oz.

M Series: Medium cost but high quality. Sensitivity 100 mW for SP, 200 mW for DP odels. Tail spring adjusting screw for pull-in. Gold-flash silver contacts rated 5 amps. wo 6-32 mtg. holes on 1 13/16" centers. Size, 2 3/16" x 2 9/16" x 2¼". Weight, 5 oz.



P & B Number	Contacts	Coil Resistance 2,500 Ohms					Coil Resistance 5,000 Ohms					Coil Resistance 10,000 Ohms				
		Input mADC	Net Each, Lots of*				Input mADC	Net Each, Lots of*				Input mADC	Net Each, Lots of*			
			1-24	25-50	51-99	100-249		1-24	25-50	51-99	100-249		1-24	25-50	51-99	100-249
GB5D	SPDT	6.8	$4.45	$4.23	$4.01	$3.12	4 8	$4.65	$4.42	$4.19	$3.26	3.4	$ 5.25	$4.99	$4.73	$3.68
GB11D	DPDT	7.0	6.20	5.89	5.58	4.34	5.0	6.45	6.13	5.81	4.52	3.53	7.00	6.65	6.30	4.90
GB17D	4PDT	10.5	7.45	7.08	6.71	5.22	7.4	7.65	7.27	6.89	5.36	5.25	8.20	7.79	7.38	5.74
KCP5	SPDT	7.2	7.25	6.89	6.53	5.08	5.0	7.35	6.98	6.62	5.15	3.6	7.80	7.41	7.02	5.46
KCP11	DPDT	10.0	7.70	7.32	6.93	5.39	7.2	7.80	7.41	7.02	5.46	5.0	8.30	7.89	7.47	5.81
KCP14	3PDT	12.3	9.50	9.03	8.55	6.65	8.7	9.60	9.12	8.64	6.72	6.1	10.10	9.60	9.09	7.07
LB5	SPDT	9.0	3.30	3.14	2.97	2.31	6.3	3.50	3.33	3.15	2.45	4.5	3.75	3.56	3.38	2.63
LM5	SPDT	6.3	5.05	4.80	4.55	3.54	4.5	5.30	5.04	4.77	3.71	3.2	5.65	5.37	5.09	3.96
LM11	DPDT	9.0	7.25	6.89	6.53	5.08	6.3	7.45	7.08	6.71	5.22	4.5	8.15	7.74	7.34	5.71

POWER TYPE RELAYS

B Series: For appliance and general purose usage where rugged construction, long fe and quiet operation are required. UL ecognized and CSA listed. Silver contacts ated 10 amps. Two 8-32 mtg. holes on 1¼" trs. Size, 1 15/16" x 3" x 1 13/32". Weight, 5 oz.
BC Series: Medium duty relay. With ust cover; terminals fit snap-on connecors or may be used in printed circuits sing dip soldering; snap-on screw adapers are supplied. UL recognized and CSA sted. Silver contacts rated 10 amps. One -32 mtg. stud, ⅜" lg. and locating tab on 16" centers. Size, 1 15/32" x 2 25/32" x 2 3/32", ess terminals. Weight, 7 oz.
IR Series: Medium duty relay handles mall motors, transmitters, etc. Silver ontacts rated 8 amps, except SPST-NO-DM models rated 10 amps. Two 5/32" dia. oles on 2¼" ctrs. for MR3 and MR11; on ⅝" ctrs. for MR5 and MR14. Size, 2 31/32" 2" x 2 3/16". Weight, 4 oz.
R Series: Heavy duty with industrial crew terminals. Carry UL (File #E22575) nd CSA listing; PRA11AYA, UL Comonent Program recognition. Silver conacts rated 25 amps except 7AG and 11AG ated 30 amps. PRA11AYA has auxiliary nap-action switch with SPDT silver conacts rated 5 amps at 120 VAC; will not fit nside cover. Two .188" dia. mtg. holes on .875" centers. Size, 2.531" x 3.375" x 2.5". Vt., 11 oz. max.
M Series: Compact, heavy duty 4PDT ype for long, dependable polyphase and eavy switching use. Screw terminals taked to phenolic front section. Silver admium-oxide contacts rated 25 amps at 40 VAC, 50/60 Hz resistive; 1 hp per novable arm at 120 or 240 VAC, single phase. UL and CSA listed except 480 V. Front key-hole and 2 rear-channel slots for 8-32 screws on 2" x 2½" triangular ctrs. Size, 2 21/32" x 3 23/64" x 2 23/32". Weight, 14 oz.

See another P & B page for accessories.

60-Hz AC RELAYS

P & B Number	Contacts	6, 12, 24 or 120 VAC Net Each, Lots of*				240 VAC Net Each, Lots of*			
		1-24	25-50	51-99	100-249	1-24	25-50	51-99	100-249
AB11AY†	DPDT	$ 6.50	$ 6.18	$ 5.85	$ 4.55	$ 7.05	$ 6.70	$ 6.35	$ 4.94
ABC11AY†	DPDT	7.80	7.41	7.02	5.46	8.35	7.93	7.52	5.85
MR3A†	SPST-NO-DM	5.00	4.75	4.50	3.50	......	......	......	......
MR5A	SPDT	4.45	4.23	4.01	3.12	5.00	4.75	4.50	3.50
MR11A	DPDT	6.30	5.99	5.67	4.41	6.75	6.41	6.08	4.73
MR14A	3PDT	7.50	7.13	6.75	5.25	8.00	7.60	7.20	5.60
PR1AYO*	SPST-NO	5.00	4.75	4.50	3.50	......	......	......	......
PR3AYO§	SPST-NO-DM	5.10	4.85	4.59	3.57	5.60	5.32	5.04	3.92
PR5AYO§	SPDT	5.35	5.08	4.82	3.75	5.90	5.61	5.31	4.13
PR7AGO#	DPST-NO	6.30	5.99	5.67	4.41	......	......	......	......
PR7AYO§	DPST-NO	6.00	5.70	5.40	4.20	6.50	6.18	5.85	4.55
PR11AGO#	DPDT	8.20	7.79	7.38	5.74	......	......	......	......
PRA11AYA•	DPDT-SPDT	9.60	9.12	8.64	6.72	10.15	9.64	9.14	7.11
PR11AYO§	DPDT	7.90	7.51	7.11	5.53	8.40	7.98	7.56	5.88
PR11AYO	DPDT 480 V	9.45	8.98	8.51	6.62	......	......	......	......
PM17AY	4PDT	15.05	14.30	13.55	10.54	15.65	14.87	14.09	10.96
PM17A	4PDT 480 V	16.60	15.77	14.94	11.62	......	......	......	......

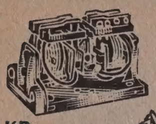
DC RELAYS

		6, 12 or 24 VDC				110 VDC			
AB11DY‡	DPDT	$ 6.45	$ 6.13	$ 5.81	$ 4.52	$ 7.00	$ 6.65	$ 6.30	$ 4.90
ABC11DY	DPDT	7.80	7.41	7.02	5.46	8.35	7.93	7.52	5.85
MR3D	SPST-NO-DM	4.50	4.28	4.05	3.15	......	......	......	......
MR5D	SPDT	4.15	3.94	3.74	2.91	4.75	4.51	4.28	3.33
MR11D	DPDT	5.95	5.65	5.36	4.17	6.55	6.22	5.90	4.59
MR14D	3PDT	7.05	6.70	6.35	4.94	7.65	7.27	6.89	5.36
PR3DYO	SPST-NO-DM	5.10	4.85	4.59	3.57	5.85	5.56	5.27	4.10
PR5DYO	SPDT	5.35	5.08	4.82	3.75	6.10	5.80	5.49	4.27
PR7DYO	DPST-NO	6.05	5.75	5.45	4.24	6.75	6.41	6.08	4.73
PR11DYO	DPDT	7.90	7.51	7.11	5.53	8.60	8.17	7.74	6.02
PM17DY	4PDT	14.40	13.68	12.96	10.08	15.00	14.25	13.50	10.50

*24 VAC and 120 VAC models only. †No 12 VAC model. ‡No 6 VDC model. §208 VAC also available; same price as 240 V models. #120 VAC model only. •No 6 VAC model.

★LARGER QUANTITY PRICES ON REQUEST

AMF | POTTER & BRUMFIELD Relays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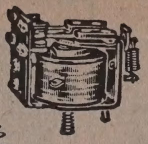
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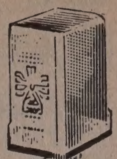
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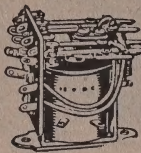
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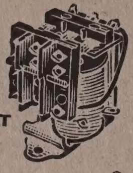
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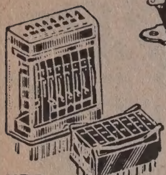
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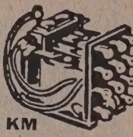
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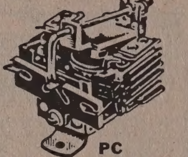
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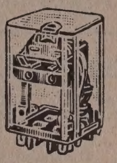

KUL

P & B Number	Contacts	Coil Voltages	Net Each, Lots of*			
			1-24	25-50	51-99	100-249
KB17AG	4PDT	6, 12, 24 or 120 VAC	$12.95	$12.30	$11.66	$ 9.07
KB17AG	4PDT	240 VAC	13.90	13.21	12.51	9.73
KB23AG	6PDT	24 or 120 VAC	15.60	14.82	14.04	10.92
KB17AY	4PDT	6, 12, 24 or 120 VAC	12.85	12.21	11.57	9.00
KB17AY	4PDT	240 VAC	13.80	13.11	12.42	9.66
KB23AY	6PDT	24 or 120 VAC	15.40	14.63	13.86	10.78
KB17D	4PDT	6, 12 or 24 VDC	11.55	10.97	10.40	8.09
KB17D	4PDT	110 VDC	13.05	12.40	11.75	9.14
KB23D	6PDT	24 VDC	13.95	13.25	12.56	9.77
KB17DG	4PDT	6, 12 or 24 VDC	11.80	11.21	10.62	8.26
KB17DG	4PDT	110 VDC	13.35	12.68	12.02	9.35
KB23DG	6PDT	24 VDC	14.35	13.63	12.92	10.05
KB23DG	6PDT	110 VDC	15.85	15.06	14.27	11.10
KBP17A	4PDT	120 VAC	18.05	17.15	16.25	12.64
KBP17AG	4PDT	120 VAC	18.25	17.34	16.43	12.78
KBP17D	4PDT	24 VDC	16.75	15.91	15.08	11.73
KBP17DG	4PDT	12 or 24 VDC	17.05	16.20	15.35	11.94
KBP20A	5PDT	120 VAC	18.60	17.67	16.74	13.02
KBP20AG	5PDT	120 VAC	18.85	17.91	16.97	13.20
KBP20DG	5PDT	12 or 24 VDC	17.95	17.05	16.16	12.57
KDP29D11	8PDT	24 VDC	10.35	9.83	9.32	7.25
KL17A	4PDT	6, 12, 24 or 120 VAC	8.25	7.84	7.43	5.78
KL17D	4PDT	6, 12 or 24 VDC	7.80	7.41	7.02	5.46
KL17D	4PDT	110 VDC	8.60	8.17	7.74	6.02
KLT5D	SPDT	12 or 24 VDC	4.70	4.47	4.23	3.29
KLT11D	DPDT	6, 12 or 24 VDC	6.00	5.70	5.40	4.20
KLT11D	DPDT	48 VDC	6.45	6.13	5.81	4.52
KLT14D	3PDT	12 or 24 VDC	6.70	6.37	6.03	4.69
KM5D	SPDT	6, 12 or 24 VDC	4.50	4.28	4.05	3.15
KM11D	DPDT	6, 12 or 24 VDC	4.90	4.66	4.41	3.43
KM14D	3PDT	6, 12 or 24 VDC	5.65	5.37	5.09	3.96
KT11A	DPDT	6 or 120 VAC	4.80	4.56	4.32	3.36
KT11D	DPDT	6 or 12 VDC	4.80	4.56	4.32	3.36
KUL5A15S	SPDT	120 VAC	6.65	6.32	5.99	4.66
KUL5D15S	SPDT	24 VDC	5.80	5.51	5.22	4.06
KUL11A15S	DPDT	12, 24 or 120 VAC*	7.50	7.13	6.75	5.25
KUL11D15S	DPDT	12 or 24 VDC	6.40	6.08	5.76	4.48
PC11A	DPDT	6, 12, 24 or 120 VAC	7.25	6.89	6.53	5.08
PC17A	4PDT	24 or 120 VAC	9.95	9.45	8.96	6.97
PC11D	DPDT	6, 12 or 24 VDC	7.00	6.65	6.30	4.90
PC17D	4PDT	24 VDC	9.75	9.26	8.78	6.83

*Diodes included inside clear polycarbonate dust cover.

SPECIAL PURPOSE RELAYS

KB (Open) and KBP (Enclosed) Seri Latching relay with release and trip co at same voltage. One sets the latch and t other releases. Operates on momentary i pulse to either coil. Silver contacts a rated 5 amps; suffix "G" indicates silv cadmium contacts on movables rated at amps. AC open relays with 5 amp contac are recognized under UL Component Pr gram and CSA listed. Type **KB** are op relays with two .156" dia. holes on 1.37 centers. Size, 1.812" x 3.22" x 2.13". W 6 oz. **Type KBP** enclosed in polypropyle dust cover with 20-pin octal-type plugs f socket mounting. UL component recogn tion does not apply. Size, 1.781" x 2.406" 3.56". Weight, 4 oz.

KDP Series: Compact relay in dust cov provides 8 Form C (8PDT) switchi with bifurcated gold over silver contact Designed for dense packaging applicatio in electrical control systems. Operate spe 15 msec at nom. voltage and 25° C. Co tacts rated 1 amp at 30 VDC resistive 0.5 amp at 120 VAC; solder termin socket mtg. Size, 1.19" x .56" x 1.54". W 1.3 oz. less socket.

KL Series: High dielectric phenolic insul tion for extra versatility. Gold-flash silver contacts rated 5 amps at 120 VA 50/60 Hz. Two 6-32 mtg. holes on 1⅞ centers. Size, 1 23/32" x 1 59/64" x 2 1/32". Weigh 5 oz.

KLT Series: Continuous duty coils, 6 W +25° C. Contacts rated 3 A at 120 VA 50/60 Hz res. Two 6-32 holes on 1⅞ ctrs. Size, 1 59/64" x 1 15/16" x 1 53/64". Wt., 4 o

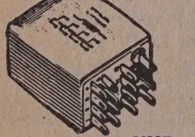
KM Series: Subminiature relay for u where size and weight are critical fa tors. Silver contacts rated 2 amps. Sold lug terminals. Has 2-56 tapped hole an locating half-punch for mtg. Size, 11/16" 1⅛" x 53/64". Weight, .58 oz.

KT Series: Antenna switching relay h glass base insulation for minimum RF lo to switch 300-ohm line. Gold-flashed silv contacts rated 5 amps. Single 6-32 mt stud. Size, 1 15/16" x 1 5/16" x 1 11/16". Wt., 1½ o

KUL Series: Small magnetic latching rela continuous duty for applications requirin memory stability such as machine tool process controls, etc. Recognized under U Component Program and CSA approve Silver cadmium contacts rated 10 amps 28 VDC resis. or 120 VAC, 80% PF. U KU sockets for mtg. Size, 1.406" x 1.531" 2.156". Weight, 3.4 oz.

PC Series: Single coil impulse latchin relay for on-off and current reversal switc ing on alternate pulses. Gold-flashed silve cadmium oxide contacts rated 7.5 amp Two 5/32" mtg. holes on 2⅝" centers. Siz 2 5/64" x 2 1/16" x 2 31/32". Weight, 5 oz.

GENERAL PURPOSE TELEPHONE RELAYS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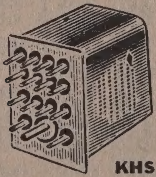
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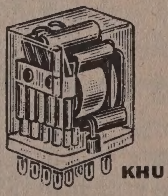

KHU

SERIES KHP, KHS (SEALED) AND KHU (ENCLOSED) TYPES

Small, rugged 4PDT, AC or DC relays. KHU, clear polycarbonate and KHP has nylon dust cover; KHS is hermetically sealed in metal enclosure. For data processing and computer applications. Contacts available: Suffix **11** denotes gold-flashed silver rated 3 amps, 30 VDC or 120 VAC, resistive; suffix **12** denotes silver-cadmium oxide rated 3 amps; suffix **13** gold alloy contacts for low level to 2 amp applications; suffix **16** gold overlay on silver, bifurcated contacts rated 1 amp at 30 VDC, resistive, or 120 VAC. Mount by solder terminals and 3-48 stud 5/16" lg. Adaptable to sockets (listed on another page). Type KHU is recognized under UL Component Program. KHS relays should not have frames grounded.

★LARGER QUANTITY PRICES ON REQUEST

P & B Number	Coil Voltages	Net Each, Lots of*			
		1-24	25-50	51-99	100-24
KHP17A11	6, 12, 24 VAC	$ 5.90	$ 5.61	$ 5.31	$4.13
KHP17A11	120 VAC	6.40	6.08	5.76	4.48
KHP17A12	120 VAC	6.55	6.22	5.90	4.59
KHP17A13	120 VAC	8.55	8.12	7.70	5.99
KHP17D11	6, 12, 24 VDC	5.35	5.08	4.82	3.75
KHP17D11	48 VDC	5.55	5.27	5.00	3.89
KHP17D11	90, 110 VDC	6.25	5.94	5.63	4.38
KHP17D12	12, 24 VDC	5.50	5.23	4.95	3.85
KHP17D12	48 VDC	5.70	5.42	5.13	3.99
KHP17D12	110 VDC	6.40	6.08	5.76	4.48
KHP17D13	24 VDC	7.50	7.13	6.75	5.25
KHP17D13	48 VDC	7.70	7.32	6.93	5.39
KHP17D16	12, 24 VDC	6.35	6.03	5.72	4.45
KHS17A11	6, 12, 24 VAC	10.25	9.74	9.23	7.18
KHS17A11	120 VAC	10.65	10.12	9.59	7.46
KHS17A12	120 VAC	10.85	10.31	9.77	7.60
KHS17D11	6, 12, 24 VDC	9.20	8.74	8.28	6.44
KHS17D11	110 VDC	10.10	9.60	9.09	7.07
KHS17D12	24 VDC	9.35	8.88	8.42	6.55
KHS17D13	24 VDC	11.45	10.88	10.31	8.02
KHU17A11	6, 12, 24 VAC	5.90	5.61	5.31	4.13
KHU17A11	120 VAC	6.40	6.08	5.76	4.48
KHU17D11	6, 12, 24 VDC	5.35	5.08	4.82	3.75
KHU17D11	48 VDC	5.55	5.27	5.00	3.89
KHU17D11	90, 110 VDC	6.25	5.94	5.63	4.38
KHU17A12	120 VAC	6.55	6.22	5.90	4.59
KHU17D12	24 VDC	5.50	5.23	4.95	3.85
KHU17D12	110 VDC	6.40	6.08	5.76	4.48
KHU17D16	12, 24 VDC	6.35	6.03	5.72	4.45

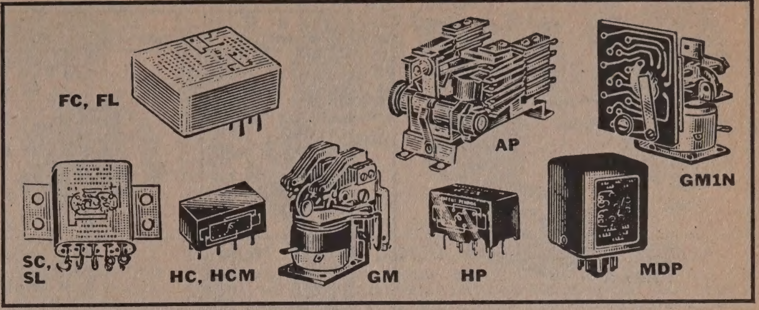
HIGH-RELIABILITY MINIATURE RELAYS

emperature Range, −65° C to +125° C.

C Series: Conventional, miniature relay
s flat on printed circuit board. Takes
0G shock, 400G linear acceleration, and
G vibration to 2000 Hz. Hermetically
elded; bifurcated contacts. Plug-in termi-
ls on 0.2" grid. Meets MIL-R-5757E,
d also MSFC-SPEC-339. Size, 1.1" x
25" x .485" h. Contacts, 3 amps. Weight,
5 oz.

Series: Dual coil, miniature latching
pe. Same as above except in operation.
ach coil pulses alternately (per polarity),
from a reversing (polarized) source
nnecting the coils in series. Stays latched
thout coil power to reduce drain.

C Series: Miniature permanent magnet
lay has high shock and vibration resis-
nce. Features single coil action and con-
rms to standard min. coil operation ex-
pt polarized connections because of mag-
tic circuit. Positive terminal marked
th red dot. Contacts rated at 2 amps.
ze, .795" x .359" x 1.1". Mounting: —D,
ug-in terminals for printed circuit or
ceptacle; —DA shoulder flanges with
o .104" x .136" holes on 1.062" ctrs.;
-DB, welded bracket with four .125"
les on 1.062" x .281" ctrs.; —DC, two
40 NC-2A threaded studs on .488" x .220"
agonal ctrs.; —DD, plain case. All ex-
pt —D have hook-end solder terminal
aders. SCG11D has plug-in terminals on
" grid. Wt., ¾ oz.



SL Series: Dual coil, miniature magnetic latching relay for low power, high shock and vibration resistance. Requires connections to both coils; may be connected in series for polar operation, reverse polarity to reset. Operates on 1 watt, 3 msec pulse to either coil. Size, .795" x .359" x 1.1". Mtg. type and dimensions same as SC Series. Contacts rated at 2 amps. Weight, 2 oz.

HC Series: Miniature, non-polarized, non-latching relay hermetically welded in half-size crystal case. High-torque motor structure and bifurcated, gold-plated silver DPDT contacts offer positive performance in low-level applications. Contacts rated dry circuit to 2 amps at 28 VDC resistive. Meets or exceeds applicable sections of MIL-R-5757, and complies with MSFC-SPEC-339. HC11D has plug-in, plain case; HC11DA has hook-end solder terminals and shoulder brackets; HC11DB has hook-end solder terminals and flat mounting plate with two holes. Size (plain case), 0.8" x 0.4" sq., seated. Wt., ¼ oz.

HCM Series: Military version of HC Series. Meets or exceeds appropriate sections of MIL-R-5757E. Designed for hostile environments found in aircraft applications and for ground support equipment. Straight pins or hook solder terminals. Wt., ½ oz. without bracket.

HP Series: Non-polarized, non-latching half-size relay. Same structure, contact material as HC Series but enclosed in high impact dust cover. Terminals on .200" grid for plug-in or PC board. Ideal for TV cameras, desk-top computers, dictating, etc. DPDT contacts rated low level to 2 amps. Continuous duty coils rated 5 msec operate, 3 msec release max. Size, .49" x .88" x .48" max. Wt., 0.3 oz.

HPS Series: Hermetically sealed version of HP; uses standard HP socket. For reliable performance in logic circuit applications or where prolonged submersion of PC boards in cleaning solvents may be required. Size, .810" x .410" x .410". Wt., ¼ oz.

P & B Number	Contacts	Coil Voltages	Net Each, Lots of*			
			1-24	25-50	51-99	100-249
P11A	DPDT	6, 12, 24 or 120 VAC	$10.90	$10.36	$ 9.81	$ 7.63
P11A	DPDT	240 VAC	11.50	10.93	10.35	8.05
P17A	4PDT	24 or 120 VAC	13.20	12.54	11.88	9.24
P11D	DPDT	6, 12 or 24 VDC	10.90	10.36	9.81	7.63
P11D	DPDT	110 VDC	11.70	11.12	10.53	8.19
P17D	4PDT	12 or 24 VDC	13.20	12.54	11.88	9.24
P17D	4PDT	110 VDC	14.00	13.30	12.60	9.80
C11D	DPDT	6, 12 or 24 VDC	22.40	21.28	20.16	15.68
L11D	DPDT	6, 12 or 24 VDC	25.15	23.89	22.64	17.61
C11D	DPDT	6, 12 or 24 VDC	22.65	21.52	20.39	15.86
C11DA	DPDT	12 or 24 VDC	22.65	21.52	20.39	15.86
C11DB	DPDT	6, 12 or 24 VDC	22.65	21.52	20.39	15.86
C11DC	DPDT	24 VDC	22.65	21.52	20.39	15.86
C11DD	DPDT	24 VDC	22.65	21.52	20.39	15.86
CG11D	DPDT	24 VDC	22.65	21.52	20.39	15.86
C7141	DPDT	26.5 VDC*	22.85	21.71	20.57	16.00
L11D	DPDT	6, 12 or 24 VDC	24.75	23.51	22.28	17.33
L11DA	DPDT	6, 12 or 24 VDC	24.75	23.51	22.28	17.33
L11DB	DPDT	6, 12 or 24 VDC	24.75	23.51	22.28	17.33
L11DC	DPDT	24 VDC	24.75	23.51	22.28	17.33
L11DD	DPDT	24 VDC	24.75	23.51	22.28	17.33
LG11D	DPDT	24 VDC	24.75	23.51	22.28	17.33
M11A	DPDT	24 or 120 VAC	9.05	8.60	8.15	6.34
M11AL11	DPDT/DPDT	120 VAC	12.85	12.21	11.57	9.00
M11D	DPDT	12 or 24 VDC	8.65	8.22	7.79	6.06
M11D	DPDT	110 VDC	9.25	8.79	8.33	6.48
M11DL11	DPDT/DPDT	12 or 24 VDC	12.55	11.92	11.30	8.79
M1N10A	SP-10 pos.	120 VAC	11.15	10.59	10.04	7.81
M1N12A	SP-12 pos.	120 VAC	11.30	10.74	10.17	7.91
M1N10D	SP-10 pos.	24 VDC	10.85	10.31	9.77	7.60
M1N12D	SP-12 pos.	24 VDC	11.00	10.45	9.90	7.70
C11D	DPDT	24 VDC	22.30	21.19	20.07	15.61
C11DA	DPDT	24 VDC	22.30	21.19	20.07	15.61
C11DB	DPDT	24 VDC	22.30	21.19	20.07	15.61
CM11D	DPDT	24 VDC	14.90	14.16	13.41	10.43
CM11DA	DPDT	24 VDC	15.60	14.82	14.04	10.92
CM11DB	DPDT	24 VDC	15.60	14.82	14.04	10.92
P11D	DPDT	6, 12 or 24 VDC	8.80	8.36	7.92	6.16
P11D	DPDT	48 VDC	9.40	8.93	8.46	6.58
PS11D	DPDT	12 or 24 VDC	10.65	10.12	9.59	7.46

MIL-R-5757/10C-141 or RY4NA3B3L01.

SPECIAL PURPOSE RELAYS

AP Series: Ratchet, impulse relay for reliability in on-off or reversing action for alternate operations of the control lead. Positive ratchet at all speeds on impulses as short as 60 milliseconds. Intermittent operation only. Silver contacts rated 5 amps. Three 5/32" mtg. holes on 3⅜" x ⅞" triangular ctrs.; 2 5/16" x 3¾" x 2¼"; 7 oz.

GM Series: Versatile impulse/sequencing relay for single-coil latching applications. The 2 Form C contact arrangement is switched alternately by cams. Positive switching is by indirect action during drop-out of the armature. Can also be furnished with additional 2 Form C auxiliary contacts, suffix "L", operated directly by the armature. Contacts rated at 3 amps. Available with AC or DC coils. AC version operates on a 50% coil duty cycle (5 min. max.). Mounting: 8-32 tapped core with a locating boss. Size, 1.437" x 2.03" x 2.07" max. Wt., with aux contacts, 4¾ oz.; without, 4 oz.

GM1N Series: Relays employing basic structure of GM Series with unidirectional printed circuit boards in choice of 10 or 12 steps. Board is attached to ratchet shaft extension. Movable contact arm advances one position each time armature drops out. Contacts rated at .25 amp. Size, 1.875" x 2" x 2.312". Wt., approx. 4 oz.

See another P & B page for accessories.

MDP SERIES SMALL POLARIZED RELAYS

mall size, ultra-sensitivity and high speed switching combine
ith efficient. bounce-free contact action. Operation depends on
oth magnitude and direction of coil current. Temp., −60° C to
-85° C. Size, 1½" sq. x 1 13/16" h. (seated); wt., 4¼ oz. Plastic
ust cover; 8-pin plugs.

BI-STABLE TYPES (1 FORM C)

rmature remains in its last energized position on coil de-energize.
ungsten and Paliney contacts rated .01–1 amp resistive with
itable arc suppression, 25–150 V.

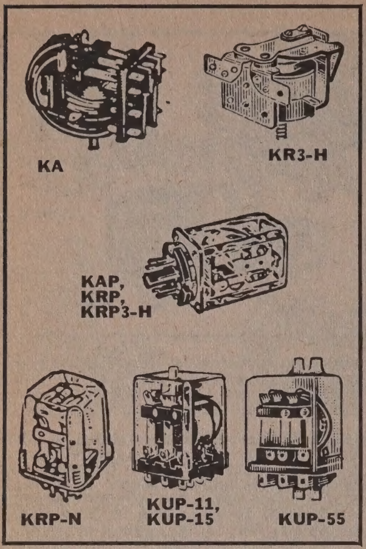
P & B No.	Pick-up Cur., mA	Pick-up Pwr., μW	No. Coils	Ohms/ Coil	Net Each, Lots of	
					1-9	10-49*
DP-300-1	1.5	338	2	150	$26.20	$23.58

CENTER-STABLE TYPES (1 FORM K)

Armature stays center-off with contacts open at coil de-energize. Silver contacts rated 3 A res. at 28 VDC.

P & B No.	Pick-up Cur., mA	Pick-up Pwr., μW	No. Coils	Ohms/ Coil	Net Each, Lots of	
					1-9	10-49*
MDP-1006	.32	33.8	1	330	$29.95	$26.96
MDP-1007	.27	35	1	480	29.95	26.96
MDP-1011	.1	35	1	3500	29.95	26.96
MDP-1013	.067	32.3	1	7200	29.95	26.96
MDP-2009	.32	102	2	1000	29.95	26.96
MDP-2011	.17	66.5	2	2300	29.95	26.96

★LARGER QUANTITY PRICES ON REQUEST



KA and KAP Series: Small, low cost, highly efficient relay for light power loads. All KA and KAP relays with "Y" suffix bear CSA listing and carry UL Component Recognition (File No. E22575). Continuous duty. Mechanical life 10 million operations. Contacts: Suffix **Y**, movable gold-flashed silver; stationary, silver overlay; rated 5 amps. Suffix **G**, movable contacts silver-cadmium-oxide rated 10 amps. Size and Mounting: KA, 1 15/32″ x 1 11/16″ x 1 27/32″ with 6-32 thd. stud and locating tab on 7/16″ ctrs.; wt., 2 oz. KAP, enclosed in clear polycarbonate dust cover 1 17/32″ x 1 7/16″ x 2 9/32″ with 8- or 11-pin plug terminals; wt., 3 oz.

KR3-H Series: Small size, heavy-duty relay. Open only, SPST-NO-DM contacts. Movable carrier has twin silver-cadmium-oxide contacts rated 20 A, 120 VAC 60 Hz resis. or 28 VDC; 1 hp at 120/240 V 60 Hz. Terminals: 1/4″ quick connect or solder for contacts; coil, solder only. One 6-32 mtg. stud on 7/16″ ctr. Size, 1 39/64″ x 1 43/64″ x 1 33/64″; seated, 1 7/32″ h. Weight, 2 oz.

KRP3-H Series: Same electrical specifications as KR3-H, but enclosed in clear, polycarbonate dust cover with octal plug-in base. Size, 1 17/32″ x 1 7/16″ x 2 9/32″ h. above plug. Weight, approx. 3 oz.

KRP Series: Multi-contact arrangements in clear polycarbonate dust cover. Mounts by standard octal 8-pin plug on KRP5 and KRP11 models; 11-pin on KRP14. Gold-flashed silver contacts rated 5 amps. Size, 1 13/32″ x 1 13/32″ x 2″ above plug. Wt., 3 oz. Suffix **G** means silver-cadmium oxide contacts on movables, rated 10 amps.

KRP-N Indicator Lamp Relay: General purpose, incorporating a lamp to indicate current or voltage in power circuit. Clear polycarbonate dust cover. Std. octal plug. Silver cadmium-oxide contacts, rated at 10 amps. Size, 1 13/32″ x 1 13/32″ x 2″. Wt., 3 oz.

KUP Series with Suffix 15: Reliable 10-amp relay for industrial control applications. Has .187″ quick connect/solder-type terminals. Enclosed in clear polycarbonate dust cover. Silver cadmium-oxide contacts assure long life. Continuous operation. Max. size, 1.531″ x 1.406″ x 1.906″ h. seated; terminals, .316″ lg.

KUP Series with Suffix 11: Same as 15 Series except silver contacts rated 5 amps.

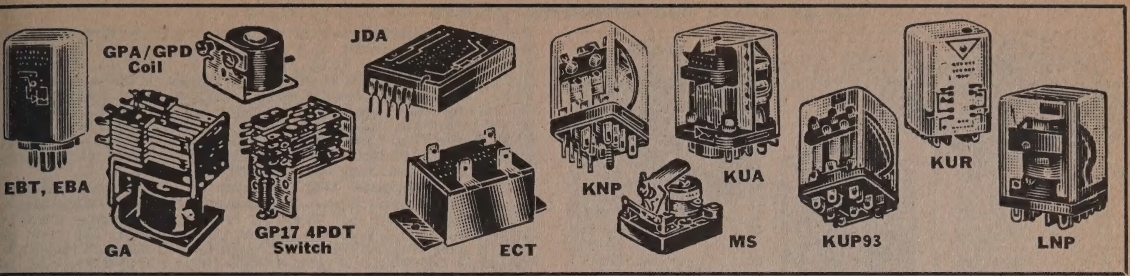
KUP Series with Suffix 55: Same as 15 Series but has slotted flange case for direct-to-chassis mounting. Identical electrically and mechanically, except not suitable for socket mounting. Rated at 10 amps. Has .187″ quick connect/solder-type terminals; .156″ wide slots are on 2.90″ max. mounting centers. Wt., 3 oz. All KUP Series are recognized under UL Component Program (File No. E22575).

See another P & B page for accessories.

★LARGER QUANTITY PRICES ON REQUEST

GENERAL PURPOSE RELAYS

P & B Number	Contacts	Coil Voltages	Net Each, Lots of*			
			1-24	25-50	51-99	100-24
KA5AG	SPDT	6, 12, 24 or 120 VAC	$ 4.00	$ 3.80	$ 3.60	$2.80
KA5AG	SPDT	240 VAC	4.50	4.28	4.05	3.15
KA5AY	SPDT	6, 12, 24 or 120 VAC	3.95	3.75	3.56	2.77
KA5AY	SPDT	240 VAC	4.45	4.23	4.01	3.12
KA11AG	DPDT	6, 12, 24 or 120 VAC	4.90	4.66	4.41	3.43
KA11AG	DPDT	240 VAC	5.30	5.04	4.77	3.71
KA11AY	DPDT	6, 12, 24 or 120 VAC	4.80	4.56	4.32	3.36
KA11AY	DPDT	240 VAC	5.20	4.94	4.68	3.64
KA11DY	DPDT	48 VDC	4.40	4.18	3.96	3.08
KA14AG	3PDT	6, 12, 24 or 120 VAC	5.40	5.13	4.86	3.78
KA14AG	3PDT	240 VAC	5.95	5.65	5.36	4.17
KA14AY	3PDT	6, 12, 24 or 120 VAC	5.20	4.94	4.68	3.64
KA14AY	3PDT	240 VAC	5.70	5.42	5.13	3.99
KA5DG	SPDT	6, 12 or 24 VDC	3.85	3.66	3.47	2.70
KA5DG	SPDT	110 VDC	4.55	4.32	4.10	3.19
KA5DY	SPDT	6, 12 or 24 VDC	3.80	3.61	3.42	2.66
KA5DY	SPDT	110 VDC	4.50	4.28	4.05	3.15
KA11DG	DPDT	6, 12 or 24 VDC	4.35	4.13	3.92	3.05
KA11DG	DPDT	110 VDC	5.10	4.85	4.59	3.57
KA11DY	DPDT	6, 12 or 24 VDC	4.20	3.99	3.78	2.94
KA11DY	DPDT	110 VDC	4.95	4.70	4.46	3.47
KA14DG	3PDT	6, 12 or 24 VDC	4.95	4.70	4.46	3.47
KA14DG	3PDT	110 VDC	5.65	5.37	5.09	3.96
KA14DY	3PDT	6, 12 or 24 VDC	4.75	4.51	4.28	3.33
KA14DY	3PDT	110 VDC	5.45	5.18	4.91	3.82
KAP5AG	SPDT	24 or 120 VAC	6.75	6.41	6.08	4.73
KAP11AG	DPDT	6, 24 or 120 VAC	7.55	7.17	6.80	5.29
KAP11AY	DPDT	24 or 120 VAC	7.45	7.08	6.71	5.22
KAP11AY	DPDT	240 VAC	7.90	7.51	7.11	5.53
KAP14AG	3PDT	24 or 120 VAC	9.35	8.88	8.42	6.55
KAP14AY	3PDT	24 or 120 VAC	9.20	8.74	8.28	6.44
KAP14AY	3PDT	240 VAC	9.60	9.12	8.64	6.72
KAP5DG	SPDT	24 VDC	6.65	6.32	5.99	4.66
KAP5DG	SPDT	110 VDC	7.40	7.03	6.66	5.18
KAP11DG	DPDT	24 VDC	7.50	7.13	6.75	5.25
KAP11DG	DPDT	110 VDC	8.25	7.84	7.43	5.78
KAP11DY	DPDT	12 or 24 VDC	7.40	7.03	6.66	5.18
KAP11DY	DPDT	110 VDC	8.15	7.74	7.34	5.71
KAP14DG	3PDT	24 VDC	9.30	8.84	8.37	6.51
KAP14DG	3PDT	110 VDC	10.05	9.55	9.05	7.04
KAP14DY	3PDT	12 or 24 VDC	9.10	8.65	8.19	6.37
KAP14DY	3PDT	110 VDC	9.80	9.31	8.82	6.86
KR3AH	SPST-NO-DB	12, 24 or 120 VAC	4.85	4.61	4.37	3.40
KR3DH	SPST-NO-DB	12 or 24 VDC	4.60	4.37	4.14	3.22
KR3DH	SPST-NO-DB	110 VDC	5.25	4.99	4.73	3.68
KRP3AH	SPST-NO-DB	12, 24 or 120 VAC	7.75	7.36	6.98	5.43
KRP3DH	SPST-NO-DB	12 or 24 VDC	7.50	7.13	6.75	5.25
KRP3DH	SPST-NO-DB	110 VDC	8.25	7.84	7.43	5.78
KRP5A	SPDT	6, 24 or 120 VAC	6.65	6.32	5.99	4.66
KRP5AG	SPDT	6, 24 or 120 VAC	6.85	6.51	6.17	4.80
KRP11A	DPDT	6, 12, 24 or 120 VAC	7.40	7.03	6.66	5.18
KRP11A	DPDT	240 VAC	7.90	7.51	7.11	5.53
KRP11AG	DPDT	6, 12, 24 or 120 VAC	7.65	7.27	6.89	5.36
KRP11AG	DPDT	240 VAC	8.15	7.74	7.34	5.71
KRP11AN	DPDT	6, 12, 24 or 120 VAC	8.75	8.31	7.88	6.13
KRP11AN	DPDT	240 VAC	9.25	8.79	8.33	6.48
KRP14A	3PDT	6, 12, 24 or 120 VAC	9.20	8.74	8.28	6.44
KRP14A	3PDT	240 VAC	9.65	9.17	8.69	6.76
KRP14AG	3PDT	6, 12, 24 or 120 VAC	9.55	9.07	8.60	6.69
KRP14AG	3PDT	240 VDC	10.05	9.55	9.05	7.04
KRP14AN	3PDT	6, 12, 24 or 120 VAC	10.65	10.12	9.59	7.46
KRP14AN	3PDT	240 VAC	11.15	10.59	10.04	7.81
KRP5D	SPDT	6, 12 or 24 VDC	6.60	6.27	5.94	4.62
KRP5D	SPDT	110 VDC	7.35	6.98	6.62	5.15
KRP5DG	SPDT	6, 12 or 24 VDC	6.75	6.41	6.08	4.73
KRP5DG	SPDT	110 VDC	7.50	7.13	6.75	5.25
KRP11D	DPDT	6, 12 or 24 VDC	7.35	6.98	6.62	5.15
KRP11D	DPDT	48 VDC	7.75	7.36	6.98	5.43
KRP11D	DPDT	110 VDC	8.10	7.70	7.29	5.67
KRP11DG	DPDT	6, 12 or 24 VDC	7.60	7.22	6.84	5.32
KRP11DG	DPDT	48 VDC	8.05	7.65	7.25	5.64
KRP11DG	DPDT	110 VDC	8.35	7.93	7.52	5.85
KRP11DN	DPDT	6, 12 or 24 VDC	8.65	8.22	7.79	6.06
KRP11DN	DPDT	110 VDC	9.45	8.98	8.51	6.62
KRP14D	3PDT	6, 12 or 24 VDC	9.10	8.65	8.19	6.37
KRP14D	3PDT	48 VDC	9.50	9.03	8.55	6.65
KRP14D	3PDT	110 VDC	9.80	9.31	8.82	6.86
KRP14DG	3PDT	6, 12 or 24 VDC	9.45	8.98	8.51	6.62
KRP14DG	3PDT	48 VDC	9.85	9.36	8.87	6.90
KRP14DG	3PDT	110 VDC	10.20	9.69	9.18	7.14
KRP14DN	3PDT	24 VDC	10.55	10.02	9.50	7.39
KUP5A15	SPDT	6, 12, 24 or 120 VAC	4.35	4.13	3.92	3.05
KUP5A15	SPDT	240 VAC	4.85	4.61	4.37	3.40
KUP5D15	SPDT	6, 12 or 24 VDC	4.20	3.99	3.78	2.94
KUP5D15	SPDT	110 VDC	4.90	4.66	4.41	3.43
KUP11A11	DPDT	120 VAC	5.15	4.89	4.64	3.61
KUP11A15	DPDT	6, 12, 24 or 120 VAC	5.30	5.04	4.77	3.71
KUP11A15	DPDT	240 VAC	5.80	5.51	5.22	4.06
KUP11D11	DPDT	24 VDC	4.60	4.37	4.14	3.22
KUP11D15	DPDT	6, 12 or 24 VDC	4.80	4.56	4.32	3.36
KUP11D15	DPDT	110 VDC	5.50	5.23	4.95	3.85
KUP14A11	3PDT	120 VAC	5.70	5.42	5.13	3.99
KUP14A15	3PDT	6, 12, 24 or 120 VAC	5.95	5.65	5.36	4.17
KUP14A15	3PDT	240 VAC	6.40	6.08	5.76	4.48
KUP14D15	3PDT	6, 12 or 24 VDC	5.45	5.18	4.91	3.82
KUP14D15	3PDT	110 VDC	5.95	5.65	5.36	4.17
KUP5A55	SPDT	120 VAC	4.35	4.13	3.92	3.05
KUP11A55	DPDT	24 or 120 VAC	5.30	5.04	4.77	3.71
KUP14A55	3PDT	6, 12, 24 or 120 VAC	5.95	5.65	5.36	4.17
KUP14A55	3PDT	240 VAC	6.40	6.08	5.76	4.48
KUP5D55	SPDT	24 VDC	4.20	3.99	3.78	2.94
KUP11D55	DPDT	6, 12 or 24 VDC	4.80	4.56	4.32	3.36
KUP11D55	DPDT	110 VDC	5.50	5.23	4.95	3.85
KUP14D55	3PDT	6, 12 or 24 VDC	5.45	5.18	4.91	3.82
KUP14D55	3PDT	110 VDC	5.95	5.65	5.36	4.17



GENERAL PURPOSE RELAYS

A Series: Multiple-contact, voltage switching relay designed for dustrial control applications. Silver contacts rated 5 A; tinned, erced solder terminals. Mounts on 8-32 tapped core with locating ss. Size, 1.063″ x 1.719″ x 1.781″. Weight, 3½ oz.

NP Series: Small relay designed for economizing chassis space. ecognized under UL Component Program and CSA listing for 10 hp at 120 VAC; 3 A at 32 VDC resistive or 3 A at 240 VAC, % PF. Fine silver cross bar contacts. Terminals are .110″ quick-nnect/solder; sockets available separately. May be chassis ounted by 3-48 stud. In clear polycarbonate dust cover. Size, 980″ x 1.000″ x 1.415″ seated. Weight, 1.4 oz. approximate.

UP93 Series: Provides rectangular terminal configuration for e in heating and air conditioning industries. Recognized under L Component Program. Gold flashed fine silver contacts rated A. In clear polycarbonate dust cover. Terminals are .187″ quick-nnect, standard; arranged in staggered rows. Fit specially de-gned skts. (not supplied). Size, 1.406″ x 1.531″ x 1.906″. Wt., 3 oz.

NP Series: Sensitive AC relays for use where limited control wer is available. Sensitivity of 0.75 VA at pick-up or nominal ltage. DPDT contacts rated 10 A at 28 VDC or 240 VAC, 60 Hz, % PF. Terminals are .187″ quick-connect/solder. Fit KU ckets. Size, 1.406″ x 1.531″ x 1.906″. Weight, 3 oz.

POWER RELAYS

F Series: Medium duty for industrial control applications. milar to GA series except long contact arms have silver contacts ted 10 A at 120 VAC or 28 VDC resistive; excellent wipe or lf-cleaning action. Tinned, pierced solder terminals; 8-32 tapped re with locating boss mtg. Size, 1.016″ x 2.531″ x 2.093″ max. eight, 4.75 oz.

MOTOR STARTING

S Series: For starting capacitor start, induction-run motors. perates on back EMF of start winding. Armature gap can be tered to change pick-up. Recognized under UL Component ogram. Two .156″ dia. mounting holes on 1.563″ centers. Con-cts rated ¾ hp, fine silver; 3 hp, silver cadmium. Size, 2.063″ x 063″ x 2.125″. Weight, 5 oz. maximum.

SPECIAL PURPOSE

P Series: Separate AC and DC coils to match with 2PDT or DT switches. Silver contacts rated 5 amps.

P & B No.	Con-tacts	Coil Voltages or Current	Net Ea., Lots of*		
			1-24	25-50	51-99
A11A	DPDT	6, 12, 24 or 120 VAC	$4.25	$4.04	$3.83
A11D	DPDT	6, 12 or 24 VDC	4.25	4.04	3.83
A11D	DPDT	110 VDC	4.80	4.56	4.32
A14A	3PDT	24 or 120 VAC	5.10	4.85	4.59
A17A	4PDT	6, 12, 24 or 120 VAC	6.15	5.84	5.54
A17A	4PDT	240 VAC	6.55	6.22	5.90
A17D	4PDT	6, 12 or 24 VDC	6.15	5.84	5.54
A17D	4PDT	110 VDC	6.65	6.32	5.99
F17A	4PDT	12, 24 or 120 VAC	8.20	7.79	7.38
F17A	4PDT	240 VAC	8.65	8.22	7.79
F17D	4PDT	6, 12 or 24 VDC	8.20	7.79	7.38
F17D	4PDT	110 VDC	8.75	8.31	7.88
PA	....	6, 12, 24 or 120 VAC	2.20	2.09	1.98
PA	....	240 VAC	2.70	2.57	2.43
PD	....	6, 12 or 24 VDC	2.70	2.57	2.43
PD	....	110 VDC	4.00	3.80	3.60
PD	....	2500 ohm coil	2.05	1.95	1.85
PD	....	5000 ohm coil	2.30	2.19	2.07
PD	....	10K ohm coil	2.70	2.57	2.43
P11	2PDT	Switch assembly	2.25	2.14	2.03
P17	4PDT	Switch assembly	3.80	3.61	3.42
NP5A21	SPDT	6, 12, 24 or 120 VAC	4.00	3.80	3.60
NP5D21	SPDT	6, 12 or 24 VDC	3.85	3.66	3.47
NP5D21	SPDT	110 VDC	4.40	4.18	3.96
NP11A21	DPDT	6, 12, 24 or 120 VAC	4.75	4.51	4.28
NP11D21	DPDT	6, 12 or 24 VDC	4.25	4.04	3.83
NP11D21	DPDT	48 VDC	4.40	4.18	3.96
NP14A21	3PDT	6, 12, 24 or 120 VAC	5.30	5.04	4.77
NP14D21	3PDT	6, 12 or 24 VDC	4.90	4.66	4.41
NP14D21	3PDT	48 VDC	5.05	4.80	4.55
NP14D21	3PDT	110 VDC	5.55	5.27	5.00
UP93-5A13	SPDT	120 VAC	4.35	4.13	3.92
UP93-5D13	SPDT	24 VDC	4.20	3.99	3.78
UP93-11A13	DPDT	24 or 120 VAC	5.30	5.04	4.77
UP93-11D13	DPDT	12 or 24 VDC	4.80	4.56	4.32
UP93-11D13	DPDT	110 VDC	5.50	5.23	4.95
UP93-14A13	3PDT	120 VAC	5.95	5.65	5.36
UP93-14D13	3PDT	6, 12 or 24 VDC	5.45	5.18	4.91
UP93-14D13	3PDT	48 VDC	5.65	5.37	5.09
UP93-14D13	DPDT	110 VDC	5.95	5.65	5.36
NP11A15	DPDT	12, 24 or 120 VAC	7.00	6.65	6.30
S2AY	SPST-NC	120 VAC, ¾ hp motor	4.70	4.47	4.23
S2AY		240 VAC, ¾ hp motor	5.25	4.99	4.73
S4AY	SPST-NC-DB	120 VAC, 3 hp motor	5.45	5.18	4.91
S4AY		240 VAC, 3 hp motor	6.00	5.70	5.40

EBT SERIES SOLID STATE HYBRID RELAYS

Combines the input/output isolation of a reed relay with the inrush switching capabilities and long life of a solid state switch. EBT relays switch 7 A, 60 Hz at 25° ambient temperature with nominal load voltage of 120 V. Rated 5 A rms, 60 Hz at 55° C ambient. Min. operating current, 200 mA, 60 Hz. Expected life, greater than 10 million bounce-free operations. Operate time, 2 msec max.; release time, 10 msec max. Typical "closed contact" voltage drop, 1.1 V. Octal terminals for standard 8-pin socket. Weight, approximately 5.5 oz.

P & B No.	Nominal Voltage	Net Each, Lots of*			
		1-9	10-24	25-49	50 Up
EBT1DA52	6, 12, 24 VDC	$16.65	$15.82	$14.99	$13.32

EBA SOLID STATE HYBRID RELAY

Has all the output switching characteristics, package and mounting of EBT, but includes a control signal amplifier. Designed to operate from current source output mode of DTL and TTL logic circuits; 60 μW signal will switch a 7 A load. Must operate voltage, 2.4 VDC at approx. 25 μA with 24 VDC supply. Max. input, 30 VDC or 1 mA; releases when voltage is reduced to .5 VDC or less. Control voltage change rate must exceed 1 V/msec. Polarity protection provided for control input and supply voltage terminals.

P & B No.	Nominal Voltage	Operate Time	Net Each, Lots of*			
			1-9	10-24	25-49	50 Up
EBA1GA52	24 VDC	2 msec	$23.45	$22.28	$21.11	$18.76

ECT SOLID STATE HYBRID RELAYS

ECT series is a medium power triac controlled and isolated by a reed relay. Input power is 290 mW for a 120 VAC, 50/60 Hz line. Expected life is in excess of 10 million operations. Operate time is 2 msec max.; release time, 10 msec max. at 25° C. **Size:** 2.64″ x 1.50″ x 1.52″.

P & B Number	Contacts	Nom. Volts	Net Each, Lots of			
			1-9	10-24	25-49	50-99
ECT1DC72	SPST-NO	5	$14.60	$13.87	$13.14	$11.68
ECT1DB44	SPST-NO	24	14.35	13.63	12.92	11.48

JDA AMPLIFIER-DRIVEN JDT REED RELAY

Sensitive reed relay features same design as JDT Series. Control signal is amplified by solid state driver circuit with 100 μW sensitivity. Control signals between 24 VDC and 30 VDC will operate JDA when specified supply voltage is applied. Releases when control signal is reduced to .5 VDC or less. Designed for control voltage change rate exceeding 1 V/msec. Contacts rated 10 watts max. resistive per contact, 50 VDC or .5 amp max. Terminals spaced on .1″ grid centers. Weight, 4 oz., approximate.

P & B No.	Contacts	Nominal Voltage	Net Each, Lots of*			
			1-9	10-24	25-49	50-99
JDA7GB1	DPDT-NO	24 VDC	$11.10	$10.55	$9.99	$8.88

KUA SOLID STATE AMPLIFIER-DRIVEN RELAY

Amplifier driven KUP relay operates from low power signals associated with IC circuits. Input sensitivity of 60 μW. Control signal of 24 VDC at 25 μA approx. operates relay at specified voltage. Control signal 30 VDC or 1 mA max. Must release control voltage 0.5 VDC at specified supply voltage. Polarity protection. Gold-flashed fine silver contacts switch 5 A at 28 VDC resis. or 120 V, 60 Hz, 80% PF. Clear polycarbonate case; .187″ quick-connect/solder terminals fit KU sockets. Weight, 3.5 oz. approx.

P & B No.	Contacts	Nominal Voltage	Net Each, Lots of*			
			1-24	25-50	51-99	100-249
KUA5G11	SPDT	24 VDC	$13.75	$13.06	$12.38	$9.63
KUA11G11	DPDT	24 VDC	14.20	13.49	12.78	9.94

KUR SERIES SOLID STATE HYBRID RELAYS

KUR direct action impulse relays for applications requiring on-off operation or alternate energizing of two loads. Solid state flip-flop circuit precedes permanent magnet latching relay; allows relay to remain latched during complete power loss. Requires 25 msec min. pulse width; up to 1200 pulses per minute repetition rate. Gold-flashed fine silver contacts rated 5 amps at 28 VDC or 120 VAC, 80% PF. Terminals are .187″ quick-connect/solder type and fit standard KU sockets. Yellow plastic cover. Weight, 3½ oz. approx.

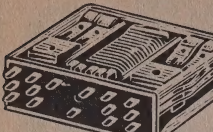
KUR11D11	DPDT	24 VDC	$15.05	$14.30	$13.55	$10.54

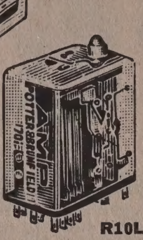
See another P & B page for accessories.

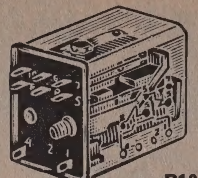
★LARGER QUANTITY PRICES ON REQUEST

AMF | POTTER & BRUMFIELD Relays

DC OPERATED RELAYS


R40


R10L


R10

2 AMPS

P&B Number R10-	Con- tacts	Coil Volts	Net Each, Lots of 1-9	10- 49	50- 99	100- 499	500- 999*
E1-Y2-V52	DPDT	6	$3.50	$3.15	$2.63	$2.45	$2.28
E1-Y2-V185	DPDT	12	3.50	3.15	2.63	2.45	2.28
E2-Y2-V185	DPDT	12	3.50	3.15	2.63	2.45	2.28
E1-Y2-V700	DPDT	24	3.50	3.15	2.63	2.45	2.28
E2-Y2-V700	DPDT	24	3.50	3.15	2.63	2.45	2.28
E1-Y2-V2.5K	DPDT	48	3.50	3.15	2.63	2.45	2.28
E1-Y2-V15.0K	DPDT	115	5.55	5.00	4.16	3.89	3.61
E1-Y4-V52	4PDT	6	3.85	3.47	2.89	2.70	2.50
E1-Y4-V185	4PDT	12	3.85	3.47	2.89	2.70	2.50
E2-Y4-V185	4PDT	12	3.85	3.47	2.89	2.70	2.50
E1-Y4-V700	4PDT	24	3.85	3.47	2.89	2.70	2.50
E2-Y4-V700	4PDT	24	3.85	3.47	2.89	2.70	2.50
E1-Y4-V2.5K	4PDT	48	4.20	3.78	3.15	2.94	2.73
E1-Y4-V15.0K	4PDT	115	5.90	5.31	4.43	4.13	3.84
E1-Y6-V25	6PDT	6	5.00	4.50	3.75	3.50	3.25
E1-Y6-V90	6PDT	12	5.00	4.50	3.75	3.50	3.25
E2-Y6-V90	6PDT	12	5.00	4.50	3.75	3.50	3.25
E1-Y6-V430	6PDT	24	5.00	4.50	3.75	3.50	3.25
E2-Y6-V430	6PDT	24	5.00	4.50	3.75	3.50	3.25
E1-Y6-V1.5K	6PDT	48	5.00	4.50	3.75	3.50	3.25
E2-Y6-V1.5K	6PDT	48	5.00	4.50	3.75	3.50	3.25
E1-Y6-V9.0K	6PDT	115	5.90	5.31	4.43	4.13	3.84

5 AMPS

E1-X2-V52	DPDT	6	$3.60	$3.24	$2.70	$2.52	$2.34
E1-X2-V185	DPDT	12	3.60	3.24	2.70	2.52	2.34
E1-X2-V700	DPDT	24	3.60	3.24	2.70	2.52	2.34
E2-X2-V700	DPDT	24	3.60	3.24	2.70	2.52	2.34
E1-X2-V2.5K	DPDT	48	3.60	3.24	2.70	2.52	2.34
E1-X2-V15.0K	DPDT	115	5.65	5.09	4.24	3.96	3.67
E1-X4-V52	4PDT	6	4.10	3.69	3.08	2.87	2.67
E1-X4-V185	4PDT	12	4.10	3.69	3.08	2.87	2.67
E1-X4-V700	4PDT	24	4.10	3.69	3.08	2.87	2.67
E1-X4-V2.5K	4PDT	48	4.10	3.69	3.08	2.87	2.67
E1-X4-V15.0K	4PDT	115	6.15	5.54	4.61	4.31	4.00
E1-X6-V25	6PDT	6	5.40	4.86	4.05	3.78	3.51
E1-X6-V90	6PDT	12	5.40	4.86	4.05	3.78	3.51
E1-X6-V430	6PDT	24	5.40	4.86	4.05	3.78	3.51
E1-X6-V1.5K	6PDT	48	5.40	4.86	4.05	3.78	3.51
E1-X6-V9.0K	6PDT	115	6.30	5.67	4.73	4.41	4.10

100 mA—BIFURCATED LOW LEVEL CONTACTS

E1-Z2-V52	DPDT	6	$3.90	$3.51	$2.93	$2.73	$2.54
E1-Z2-V185	DPDT	12	3.90	3.51	2.93	2.73	2.54
E1-Z2-V700	DPDT	24	3.90	3.51	2.93	2.73	2.54
E1-Z2-V2.5K	DPDT	48	3.90	3.51	2.93	2.73	2.54
E1-Z2-V15.0K	DPDT	115	5.95	5.36	4.46	4.17	3.87
E1-Z4-V52	4PDT	6	4.35	3.92	3.26	3.05	2.83
E1-Z4-V185	4PDT	12	4.35	3.92	3.26	3.05	2.83
E2-Z4-V185	4PDT	12	4.35	3.92	3.26	3.05	2.83
E1-Z4-V700	4PDT	24	4.35	3.92	3.26	3.05	2.83
E2-Z4-V700	4PDT	24	4.35	3.92	3.26	3.05	2.83
E1-Z4-V2.5K	4PDT	48	4.35	3.92	3.26	3.05	2.83
E1-Z4-V15.0K	4PDT	115	6.40	5.76	4.80	4.48	4.16
E1-Z6-V25	6PDT	6	5.65	5.09	4.24	3.96	3.67
E1-Z6-V90	6PDT	12	5.65	5.09	4.24	3.96	3.67
E2-Z6-V90	6PDT	12	5.65	5.09	4.24	3.96	3.67
E1-Z6-V430	6PDT	24	5.65	5.09	4.24	3.96	3.67
E2-Z6-V430	6PDT	24	5.65	5.09	4.24	3.96	3.67
E1-Z6-V1.5K	6PDT	48	5.65	5.09	4.24	3.96	3.67
E2-Z6-V1.5K	6PDT	48	5.65	5.09	4.24	3.96	3.67
E1-Z6-V9.0K	6PDT	115	6.55	5.90	4.91	4.59	4.26

2 AMPS—SENSITIVE CURRENT (J ADJUSTMENT)

E1-Y2-J2.5K	DPDT 85 mW	5.8*	$3.80	$3.42	$2.85	$2.66	$2.47
E1-Y2-J5.0K		4.1*	4.30	3.87	3.23	3.01	2.80
E1-Y2-J10.0K		3.1*	4.70	4.23	3.53	3.29	3.06
E1-Y4-J2.5K	4PDT 175 mW	8.4*	4.20	3.78	3.15	2.94	2.73
E1-Y4-J5.0K		6.2*	4.70	4.23	3.53	3.29	3.06
E1-Y4-J10.0K		4.5*	5.10	4.59	3.83	3.57	3.32
E1-Z4-J1.0K	4PDT 175 mW	13.0*	4.70	4.23	3.53	3.29	3.06
E1-Z4-J2.5K		8.4*	4.70	4.23	3.53	3.29	3.06
E2-Z4-J2.5K		8.4*	4.70	4.23	3.53	3.29	3.06
E1-Z4-J5.0K		6.2*	5.20	4.68	3.90	3.64	3.38
E2-Z4-J5.0K		6.2*	5.20	4.68	3.90	3.64	3.38

*mA.

★LARGER QUANTITY PRICES ON REQUEST

R10 Series: Dependable and versatile, a fine choice for switchi loads from dry circuit to 5 amps. Sensitivities to 20 mW/po available. Operating temp., −55° C to +72° C. Transpare enclosure. Three styles of contacts available: UL File No. E4281 Type R10-**E1** has plug-in solder terminals and mounting stu (sockets optional, see P&B Accessory Page); R10-**E2** has printe circuit terminals, no stud mounting. Final suffix signifies coil ohm **R10L Series:** Has light emitting diode (LED) indicator; produc highly visible red light when relay coil is energized. Other opera ing characteristics same as standard R10 Series.

R40 Series Slimline® 4PDT Relays: For PC boards; allows . board mtg. centers. Many contacts available with wide range coil voltages; only .43″ thick for low profile designs. Switchi range from true dry circuit to 5 A; pull-in power, 720 mW. Siz 1.20″ x 1.40″ x .43″. Final suffix signifies coil ohms. Type R40- has solder terminals or plug-in socket mtg.; R40-**E2** has PC pi for vertical mtg. less socket; R40-**E3** has PC pins for flat mt less socket.

R10 and R40 Series recognized under UL Component Progra

10 AMPS

P&B Number R10-	Con- tacts	Coil Volts	Net Each, Lots of 1-9	10- 49	50- 99	100- 499	500- 999
E1-W2-V185	DPDT	12	$4.15	$3.74	$3.11	$2.91	$2.70
E1-W2-V700	DPDT	24	4.15	3.74	3.11	2.91	2.70

AC

Contacts rated 5 amps.

E1-X2-115VAC	DPDT	115	$5.45	$4.91	$4.09	$3.82	$3.54
E1-X4-115VAC	4PDT	115	6.65	5.99	4.99	4.66	4.32
E1-X6-115VAC	6PDT	115	9.25	8.33	6.94	6.48	6.01
E1-X8-115VAC	8PDT	115	11.15	10.04	8.36	7.81	7.25

2 AMPS

P&B Number R10L-	Con- tacts	Coil Volts	Net Each, Lots of 1-9	10- 49	50- 99	100- 499	500- 999
E1-Y2-V52	DPDT	6	$7.00	$6.30	$5.25	$4.90	$4.55
E1-Y2-V185	DPDT	12	7.00	6.30	5.25	4.90	4.55
E2-Y2-V185	DPDT	12	7.00	6.30	5.25	4.90	4.55
E1-Y2-V700	DPDT	24	7.00	6.30	5.25	4.90	4.55
E1-Y2-V2.5K	DPDT	48	7.00	6.30	5.25	4.90	4.55
E1-Y4-V52	4PDT	6	7.35	6.62	5.51	5.15	4.78
E1-Y4-V185	4PDT	12	7.35	6.62	5.51	5.15	4.78
E1-Y4-V700	4PDT	24	7.35	6.62	5.51	5.15	4.78
E2-Y4-V700	4PDT	24	7.35	6.62	5.51	5.15	4.78
E1-Y6-V430	6PDT	24	8.50	7.65	6.38	5.95	5.53

5 AMPS

E1-X2-V185	2PDT	12	$7.10	$6.39	$5.33	$4.97	$4.62
E1-X2-V700	2PDT	24	7.10	6.39	5.33	4.97	4.62
E1-X4-V185	4PDT	12	7.60	6.84	5.70	5.32	4.94
E1-X4-V700	4PDT	24	7.60	6.84	5.70	5.32	4.94
E1-X4-V2.5K	4PDT	48	7.60	6.84	5.70	5.32	4.94
E1-X6-V430	6PDT	24	8.90	8.01	6.68	6.23	5.79

100 mA—BIFURCATED LOW LEVEL CONTACTS

E1-Z4-V700	4PDT	24	$7.85	$7.07	$5.89	$5.50	$5.10

2 AMPS

P&B Number R40-	Coil Volts	Net Each, Lots of 1-9	10- 49	50- 99	100- 499	500- 999	1000- 2499
E1-Y4-V50	6	$5.70	$5.13	$4.28	$3.99	$3.82	$3.71
E1-Y4-V200	12	5.70	5.13	4.28	3.99	3.82	3.71
E2-Y4-V200	12	5.70	5.13	4.28	3.99	3.82	3.71
E3-Y4-V200	12	5.70	5.13	4.28	3.99	3.82	3.71
E1-Y4-V800	24	5.70	5.13	4.28	3.99	3.82	3.71
E2-Y4-V800	24	5.70	5.13	4.28	3.99	3.82	3.71
E3-Y4-V800	24	5.70	5.13	4.28	3.99	3.82	3.71
E1-Y4-V3.2K	48	5.70	5.13	4.28	3.99	3.82	3.71
E3-Y4-V3.2K	48	5.70	5.13	4.28	3.99	3.82	3.71

5 AMPS

E2-X4-V50	6	$5.95	$5.36	$4.46	$4.17	$3.99	$3.87
E1-X4-V200	12	5.95	5.36	4.46	4.17	3.99	3.87
E2-X4-V200	12	5.95	5.36	4.46	4.17	3.99	3.87
E3-X4-V200	12	5.95	5.36	4.46	4.17	3.99	3.87
E1-X4-V800	24	5.95	5.36	4.46	4.17	3.99	3.87
E2-X4-V800	24	5.95	5.36	4.46	4.17	3.99	3.87
E3-X4-V800	24	5.95	5.36	4.46	4.17	3.99	3.87

100 mA—BIFURCATED LOW LEVEL CONTACTS

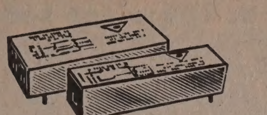
E1-Z4-V200	12	$6.20	$5.58	$4.65	$4.34	$4.15	$4.03
E2-Z4-V200	12	6.20	5.58	4.65	4.34	4.15	4.03
E3-Z4-V200	12	6.20	5.58	4.65	4.34	4.15	4.03
E1-Z4-V800	24	6.20	5.58	4.65	4.34	4.15	4.03
E2-Z4-V800	24	6.20	5.58	4.65	4.34	4.15	4.03
E3-Z4-V800	24	6.20	5.58	4.65	4.34	4.15	4.03
E2-Z4-V3.2K	48	6.20	5.58	4.65	4.34	4.15	4.03
E3-Z4-V3.2K	48	6.20	5.58	4.65	4.34	4.15	4.03

500 μA—DRY CIRCUIT CROSS BAR

E1-L4-V200	12	$7.15	$6.44	$5.36	$5.01	$4.79	$4.65
E3-L4-V200	12	7.15	6.44	5.36	5.01	4.79	4.65
E1-L4-V800	24	7.15	6.44	5.36	5.01	4.79	4.65
E3-L4-V800	24	7.15	6.44	5.36	5.01	4.79	4.65
E1-L4-V3.2K	48	7.15	6.44	5.36	5.01	4.79	4.65
E3-L4-V3.2K	48	7.15	6.44	5.36	5.01	4.79	4.65

See another P&B page for accessories.

SOLID STATE CJ SERIES DRY REED TIME DELAY RELAYS



Series time delay dry reed relays combine the basic timing racteristics of time delay relays with the long life and permance of miniature dry reed relays. Two CJ Series types are ailable: **CJC** fixed time delay on operate with internal relay tacts rated at 10 VA, and **CJH** external resistor-adjustable ay on operate. Pin terminations are for PC board mounting. **ne Delay Periods:** Choice of 3 sec, 0.1 to 10 sec, or 1 to 120 , adjustable to ±10% at nominal voltage at 25° C ambient nperature. **Operating Temperature:** −10° C to +55° C. **ntact Forms:** Up to 1C (A+B) in three cavities. **Size:** 2.718" x. x 0.688" to 1.094" x 0.710". Weight, 1½ oz. approx.

P & B Number	Time Delay, Seconds	Input Voltage	External Resistor Ohms*	Net Each 1-9★
CJC01-20003	3	12 VDC	None	$20.30
CJC01-30003	3	24 VDC	None	20.30
CJC02-20003	3	12 VDC	None	21.00
CJC02-30003	3	24 VDC	None	21.00
CJC03-20003	3	12 VDC	None	22.30
CJC03-30003	3	24 VDC	None	22.30
CJH01-20010	0.1 to 10	12 VDC	750K	20.85
CJH01-20120	1 to 120	12 VDC	1.8 megs	23.75
CJH01-30010	0.1 to 10	24 VDC	750K	20.85
CJH01-30120	1 to 120	24 VDC	1.8 megs	23.75
CJH02-20010	0.1 to 10	12 VDC	750K	21.55
CJH02-20120	1 to 120	12 VDC	1.8 megs	24.40
CJH02-30010	0.1 to 10	24 VDC	750K	21.55
CJH02-30120	1 to 120	24 VDC	1.8 megs	24.40
CJH03-20010	0.1 to 10	12 VDC	750K	22.85
CJH03-20120	1 to 120	12 VDC	1.8 megs	25.75
CJH03-30010	0.1 to 10	24 VDC	750K	22.85
CJH03-30120	1 to 120	24 VDC	1.8 megs	25.75

*Value of external resistor required for maximum delay time.

★LARGER QUANTITY PRICES ON REQUEST

ACCESSORIES FOR P&B RELAYS, DELAYS AND SENSORS

SOCKETS

P&B umber	For Relay	Contacts	Terminals	Box Qty.	Net/ Box
P1	HCM, HPS, HP	DPDT	Solder and socket retainer	10 ea.	$ 4.80
D2	KDP	8PDT	Solder	10	9.50
H1	KHP, KHS, KHU*	4PDT	Solder and socket retainer	10 ea.	6.60
H2		4PDT	Printed circuit	10	6.60
H5		4PDT	Screw—rated 3 A	5	25.00
N1	KNP	SPDT/ DPDT/ 3PDT	Solder	10	7.00
N2			Printed circuit	10	7.00
R31	KAP, KBP, KCP, KRP, KRP3-H, EBA, EBT†	8-pin	Screw—rated 10 A	5	12.50
R32		11-pin	Screw—rated 10 A	5	18.75
U1‡	KUL, KUP plain case, KUR§	SPDT/ DPDT/ 3PDT	Pierced solder—10 A	5	4.00
U2‡			Printed circuit	5	4.75
U5‡			Quick-connect—10 A	5	6.30
U6			Screw—10 A	4	14.00
U9301#	KUP93	SPDT/ DPDT/ 3PDT	Deep skt. with 11 crimp/solder terminals—10 A	1	.90
U93-2			PC—10 A	5	4.75

nd CD-31 time delay. †And CD-21, CD-38, CK, CH time ays; CPS, CS-38 sensors. ‡Recognized under UL Component ogram. §And CU, CL time delays. #Not assembled.

SOCKETS FOR R10 AND R10L SERIES RELAYS

ith ground; not recommended for relays carrying 5 amps AC d above.

P&B Number	Contacts	Terminal	Contents	Net per Box
R10-1	DPDT	Solder	10 each, sockets and hold down springs	$5.50
R10-2	4PDT	Solder		7.00
R10-3	6PDT	Solder		9.00
R10-4	DPDT	PC pins	10 each, sockets and hold down springs	5.50
R10-5	4PDT	PC pins		7.00
R10-6	6PDT	PC pins		9.00
R10-7*	DPDT	Solder	10 each, sockets and hold down springs	5.50
R10-8*	4PDT	Solder		7.00
R10-9*	6PDT	Solder		9.00
R10-10	Pkg. 50 strap hold down springs, PC skts.			2.50
R10-11*	DPDT	PC pins	10 each, sockets and hold down springs	5.50
R10-12*	4PDT	PC pins		7.00
R10-13*	6PDT	PC pins		9.00
R10-14*	4PDT	Solder brkt. mt.	5 ea., skts, hold down springs	5.00
R10-15	20 pre-punched break-away mounting plates for R-10 relay or sockets			28.20†

ithout ground. †Box of 12 strips.

SOCKETS FOR R40 SLIMLINE SERIES RELAYS

R40-1	4PDT	Right angle PC	10 each, sockets and hold down springs	$14.00
R40-2	4PDT	Vert. PC		10.00
R40-3	4PDT	Chassis mount—solder	As above, plus mounting clips	11.00

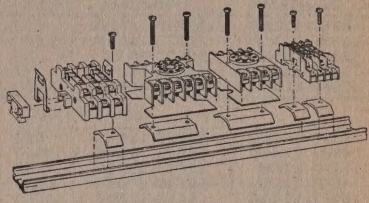
SOCKETS FOR R12 SERIES TIME DELAY RELAYS

R12-1	DPDT	Solder	10 ea., skts, hold down springs	$9.00
R12-2	DPDT	PC pins		9.00

SOCKETS FOR R13, R14 SERIES

R13-1	4PDT	Solder terminals	10 each, with grounding strip	$14.00
R14-1	4PDT			14.00

SCREW TERMINAL SOCKET SYSTEM



For mounting several industrial screw terminal sockets in compact row. In 3 ft. lengths; can be cut shorter for small chassis assemblies or full sections can be used end-to-end for larger installations. **No. 24A064:** Extruded aluminum mounting track with holes on 6.0" centers. Holes accept #8 screws. **No. 9KR33:** Aluminum mounting clip with two #4-40 tapped holes and screws. For 9KR31 and 9KR32 sockets. **No. 9KU7:** Steel mounting clip with single #6-40 tapped hole and screw. Holds 9KH5 and 9KU6 sockets. **No. 9KU8:** Molded Lexan* Quick-Mount clip; no screw required. For 9KU6 socket. **No. 9KU9:** Stainless steel hold down clip. For 9KU6 socket. *Registered GE trademark.

P&B No.	Box Qty.	Net/ Box	P&B No.	Box Qty.	Net/ Box	P&B No.	Box Qty.	Net/ Box
24A064	1	$2.00	**9KU7**	10	$0.60	**9KU9**	20	$1.50
9KR33	10	.75	**9KU8**	10	.75			

HOLD DOWN SPRINGS AND SOCKET RETAINERS

P&B No.	For Relay	Description	Box Qty.	Net/ Box
9KA1	KAP	Hold down spring	50	$6.00
9KD3	KDP	Hold down spring	50	5.50
9KH3	KHP, KHS, KHU*	Hold down spring	50	5.50
9KN3	KNP	Hold down spring	50	5.00
9KR15	KCP, KRP	Hold down spring	50	6.00
9KU3	KUP	Hold down spring	50	5.50
9KU7	KUP plain case, KUL, KUR†	Steel mounting clip, one screw	10	.60
9KU8		Quick-Mount clip, no screw	10	.75
9KU9		Stainless steel hold down	20	1.50
9KUL21	KUL	Hold down spring	25	4.50

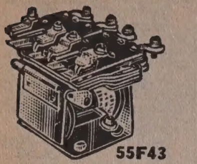
*And CD-31 time delays. †And CU, CL time delays.

ENCLOSURES AND ADAPTER

P&B No.	For Relay	Description	Box Qty.	Net/ Box
9PM1	PM	Adapter plate for mounting PM on PR mounting holes	10	$1.80
9PM2	PM	Plastic dust cover	4	2.00
35D013	PR	Metal dust cover	1	3.45
35D070	....	8-pin plug—clear polycarbonate case for mounting rectifiers, capacitors, resistors or any combination	1	.70
35D072	....	Same as 35D070 except 11-pin plug	1	.85
35D130	MS/MR	Metal dust cover	1	2.30
35D227	PM	Metal dust cover	1	3.45

SIGMA Relays INDUSTRIAL, COMMERCIAL, MILITAR

POWER RELAYS


55F43

57F2

48F

SERIES 55 DPDT, 3PDT, 4PDT AC AND DC RELAYS

Rugged, reliable relay for continuous heavy-duty, multipole switching of resistive loads to 15 amps at 240 VAC. Handles 60-amp inrush current without contact welding. Mechanical life at least 5 million operations. Temperature range, +14° to +158° F. Contact rating: Resistive, 15 A at 240 VAC, 10 A at 28 VDC; inductive, 7.5 A at 240 VAC, 5 A at 28 VDC. All unenclosed; screw mounted, **55F2:** 1$\frac{17}{32}$" w. x 1$\frac{29}{32}$" d. x 2$\frac{1}{32}$" h. **55F23:** 2$\frac{13}{64}$" w. x 2$\frac{3}{32}$" d. x 2$\frac{3}{32}$" h. **55F3:** 1$\frac{15}{16}$" sq. x 2$\frac{7}{32}$" h. **55F33:** 2$\frac{23}{64}$" w. x 2$\frac{7}{64}$" d. x 2$\frac{9}{32}$" h. **55F4:** 2$\frac{13}{32}$" w. x 1$\frac{15}{16}$" d. x 2$\frac{21}{64}$" h. **55F43:** 2$\frac{21}{32}$" w. x 2$\frac{7}{64}$" d. x 2$\frac{13}{32}$" h. Weight, 8 oz., max.

DPDT TYPE

Sigma No. and Nom. Coil Volts				
Solder Terminals	**Screw Terminals**	**Coil Ohms**	**Nom. Power**	**Net Each, Disc. Sch. 1***
55F2-120AC	**55F23-120AC**	635	5.6 VA	**$ 9.80**
55F2-240AC	**55F23-240AC**	3,150	5.6 VA	**9.80**
55F2-12DC	**55F23-12DC**	80	1.92 W	**9.50**
55F2-24DC	**55F23-24DC**	327	1.92 W	**9.50**
55F2-110DC	**55F23-110DC**	6,250	1.92 W	**11.40**

3PDT TYPE

55F3-120AC	**55F33-120AC**	635	5.6 VA	**$11.15**
55F3-240AC	**55F33-240AC**	3,150	5.6 VA	**11.15**
55F3-12DC	**55F33-12DC**	80	1.92 W	**10.80**
55F3-24DC	**55F33-24DC**	327	1.92 W	**10.80**
55F3-110DC	**55F33-110DC**	6,250	1.92 W	**12.75**

4PDT TYPE

55F4-120AC	**55F43-120AC**	635	5.6 VA	**$13.10**
55F4-240AC	**55F43-240AC**	3,150	5.6 VA	**13.10**
55F4-12DC	**55F43-12DC**	80	1.92 W	**12.45**
55F4-24DC	**55F43-24DC**	327	1.92 W	**12.45**
55F4-110DC	**55F43-110DC**	6,250	1.92 W	**14.40**

SERIES 57 SPDT, DPDT, 3PDT AC AND DC RELAYS

Snap-switch power relay for single or multiple switching of 10-to-15 ampere industrial loads as fractional horsepower motors, solenoids. Contact assembly is totally enclosed; snap-action precision switch featuring positive response to slowly-changing signals, isolation permitting reliable 3-phase switching of 5-to-15 amperes. All unenclosed, screw-mounted, screw terminals. **Load Rating:** Resistive, 15 amps at 240 VAC, 10 amps at 28 VDC; inductive (at 0.6 power factor), 7.5 amps at 240 VAC, 5 amps at 28 VDC. **Temperature Range:** +14° to +158° F. **Size:** 2$\frac{1}{32}$" x 2$\frac{31}{64}$" max. x 2$\frac{13}{16}$" max. h. Weight, 6 to 11 oz.

SPDT TYPE

Sigma No. and Nominal Coil Volts	Coil Ohms	Nominal Power	Net Each Disc. Sch. 3*
57F1-120AC	635	5.6 VA	**$10.95**
57F1-240AC	3,150	5.6 VA	**10.95**
57F1-12DC	96	1.5 W	**10.60**
57F1-24DC	384	1.5 W	**10.60**
57F1-110DC	6,250	1.92 W	**12.60**

DPDT TYPE

57F2-120AC	332	7.5 VA	**$13.30**
57F2-240AC	1,560	7.5 VA	**13.30**
57F2-12DC	72	2.0 W	**13.00**
57F2-24DC	274	2.0 W	**13.00**
57F2-110DC	5,500	2.2 W	**15.05**

3PDT TYPE

57F3-120AC	224	9.7 VA	**$15.70**
57F3-240AC	980	9.7 VA	**15.70**
57F3-12DC	62	2.4 W	**15.35**
57F3-24DC	250	2.3 W	**15.35**
57F3-110DC	4,210	2.9 W	**17.40**

SENSITIVE RELAYS

SERIES 48 SPDT LOW COST DC RELAYS

Excellent, low cost, sensitive relay for use in burglary, fire or police alarm systems requiring operation from 10 mW minimum input signal. Bridge-type contact structure. Solid contacts. Compliant armature for good contact wipe. Contact rating (at 28 VDC/120 VAC resistive): 2 amps. Temperature range, −4° to +158° F. **48F:** Unenclosed, screw mounting, solder terminals. Size, 1$\frac{17}{64}$" w. x 2$\frac{9}{32}$" d. x 1$\frac{7}{16}$" h. Weight, 3 oz. **48RO:** Plastic dust cover, 8-pin octal plug. Size, 1$\frac{23}{64}$" sq. x 2$\frac{7}{64}$" h. Weight, 4 oz.

Sigma Type No.	Coil Ohms	Pickup, Max. mADC	Dropout, Min. mADC	Net Each Disc. Sch. 1*
48F-1,000 G-SIL	1,000	3.2	.32	**$7.30**
48F-2,500 G-SIL	2,500	2.0	.2	**7.30**
48RO-1,000 G-SIL	1,000	3.2	.32	**8.50**
48RO-2,500 G-SIL	2,500	2.0	.2	**8.50**

★QUANTITY DISCOUNTS ON ANOTHER SIGMA PAGE

GENERAL PURPOSE RELAYS

SERIES 70 DPDT, 4PDT, 6PDT
DC RELAYS AND SOCKETS

Miniature industrial relay for low-level to 5-amp multiple circuit switching. Choice of solder or printed circuit terminal sockets for fast, easy connection. UL and CSA approved. Interchangeable with similar commercial relays in communications, data processing, process control equipment and recording devices. Choice of voltage adjusted (standard or bifurcated contacts) or current sensitive adjusted. Voltage adjusted with bifurcated contacts rated at 50 million operations. Sensitive current-adjusted pick up from sign as low as 85 mW. Mechanical life of both types is 100 milli operations. **Temperature Range:** +14° to +158° F.

2-AMP STANDARD CONTACTS

Sigma No. and Nom. Coil Volts					
Solder Terminals	**PC Terminals**	*****	**Coil Ohms**	**Nominal Power**	**Net Each**
70R2-6DC	**70RE22-6DC**	†	52	700 mW	**$3.2**
70R2-12DC	**70RE22-12DC**	†	185	700 mW	**3.2**
70R2-24DC	**70RE22-24DC**	†	700	700 mW	**3.2**
70R2-48DC	**70RE22-48DC**	†	2,500	700 mW	**3.3**
70R2-110DC	**70RE22-110DC**	†	15,000	700 mW	**4.7**
70R4-6DC	**70RE42-6DC**	‡	52	700 mW	**3.6**
70R4-12DC	**70RE42-12DC**	‡	185	700 mW	**3.6**
70R4-24DC	**70RE42-24DC**	‡	700	700 mW	**3.6**
70R4-48DC	**70RE42-48DC**	‡	2,500	700 mW	**3.8**
70R4-110DC	**70RE42-110DC**	‡	15,000	700 mW	**5.2**
70R6-6DC	**70RE62-6DC**	§	25	1.4 W	**4.6**
70R6-12DC	**70RE62-12DC**	§	90	1.4 W	**4.6**
70R6-24DC	**70RE62-24DC**	§	430	1.4 W	**4.6**
70R6-48DC	**70RE62-48DC**	§	1,550	1.4 W	**4.8**
70R6-110DC	**70RE62-110DC**	§	9,000	1.4 W	**5.8**

5 AMP STANDARD SILVER CADMIUM OXIDE CONTACT

To order 5 amp standard silver cadmium oxide contacts (SC add letters **SCO** after Sigma No. Example: 70R2-6DC-**SCO**, 70RE22-6DC-**SCO**.

70R2-6DC	**70RE22-6DC**	†	52	700 mW	**$3.3**
70R2-12DC	**70RE22-12DC**	†	185	700 mW	**3.3**
70R2-24DC	**70RE22-24DC**	†	700	700 mW	**3.3**
70R2-48DC	**70RE22-48DC**	†	2,500	700 mW	**3.4**
70R2-110DC	**70RE22-110DC**	†	15,000	700 mW	**4.8**
70R4-6DC	**70RE42-6DC**	‡	52	700 mW	**3.8**
70R4-12DC	**70RE42-12DC**	‡	185	700 mW	**3.8**
70R4-24DC	**70RE42-24DC**	‡	700	700 mW	**3.8**
70R4-48DC	**70RE42-48DC**	‡	2,500	700 mW	**4.0**
70R4-110DC	**70RE42-110DC**	‡	15,000	700 mW	**5.4**
70R6-6DC	**70RE62-6DC**	§	25	1.4 W	**5.0**
70R6-12DC	**70RE62-12DC**	§	90	1.4 W	**5.0**
70R6-24DC	**70RE62-24DC**	§	430	1.4 W	**5.0**
70R6-48DC	**70RE62-48DC**	§	1,550	1.4 W	**5.2**
70R6-110DC	**70RE62-110DC**	§	9,000	1.4 W	**6.0**

2-AMP BIFURCATED CONTACTS#

70R2T-6DC	**70RE2T-6DC**	†	52	700 mW	**$3.6**
70R2T-12DC	**70RE2T-12DC**	†	185	700 mW	**3.6**
70R2T-24DC	**70RE2T-24DC**	†	700	700 mW	**3.6**
70R2T-48DC	**70RE2T-48DC**	†	2,500	700 mW	**3.7**
70R2T-110DC	**70RE2T-110DC**	†	15,000	700 mW	**5.1**
70R4T-6DC	**70RE4T-6DC**	‡	52	700 mW	**4.2**
70R4T-12DC	**70RE4T-12DC**	‡	185	700 mW	**4.2**
70R4T-24DC	**70RE4T-24DC**	‡	700	700 mW	**4.2**
70R4T-48DC	**70RE4T-48DC**	‡	2,500	700 mW	**4.3**
70R4T-110DC	**70RE4T-110DC**	‡	15,000	700 mW	**5.6**
70R6T-6DC	**70RE6T-6DC**	§	25	1.4 W	**5.1**
70R6T-12DC	**70RE6T-12DC**	§	90	1.4 W	**5.1**
70R6T-24DC	**70RE6T-24DC**	§	430	1.4 W	**5.1**
70R6T-48DC	**70RE6T-48DC**	§	1,550	1.4 W	**5.2**
70R6T-110DC	**70RE6T-110DC**	§	9,000	1.4 W	**6.5**

*Contacts: †DPDT. ‡4PDT. §6PDT. #2 amp at 28 VDC; 1 an at 120 VAC.

1-AMP SENSITIVE TYPES

Sigma No. and Resis., Ohms	Contacts	Min. Dropout mADC	Pickup Power mW	Max. Pickup mADC	Net Each
70R2S-1000	DPDT	.85	85	8.5	**$3.6**
70R2S-2500	DPDT	.58	85	5.8	**3.6**
70R2S-5000	DPDT	.41	85	4.1	**4.0**
70R2S-10,000	DPDT	.31	85	3.1	**4.4**
70R2S-15,000	DPDT	.26	85	2.6	**4.8**
70R4S-1000	4PDT	1.3	175	13.0	**4.0**
70R4S-2500	4PDT	.84	175	8.4	**4.0**
70R4S-5000	4PDT	.62	175	6.2	**4.4**
70R4S-10,000	4PDT	.45	175	4.5	**4.8**
70R4S-15,000	4PDT	.35	175	3.5	**5.1**
70R6S-1000	6PDT	1.6	250	16.0	**5.1**
70R6S-2500	6PDT	1.0	250	10.0	**5.1**
70R6S-5000	6PDT	.72	250	7.2	**5.6**
70R6S-10,000	6PDT	.50	250	5.0	**6.1**
70R6S-15,000	6PDT	.42	250	4.2	**6.4**

SOCKETS

Sigma No.	Description	Net Each
AD64	Solder terminal socket for DPDT	**$0.55**
AD65	Solder terminal socket for 4PDT	**.65**
AD66	Solder terminal socket for 6PDT	**.95**
AD67	PC terminal socket for DPDT	**.55**
AD68	PC terminal socket for 4PDT	**.65**
AD69	PC terminal socket for 6PDT	**.95**

SIGMA Relays INDUSTRIAL, COMMERCIAL, MILITARY

GENERAL PURPOSE RELAYS

SERIES 62 DPDT, 4PDT, 6PDT UNIVERSAL-MOUNTING DC RELAYS...PLUS SOCKETS

nomical, low-level to 5-amp multiple circuit switching. xets designed for fast, easy connections. Available in choice of er terminals or printed-circuit terminals. Interchangeable with lar commercial relays in communications, data processing, ess control equipment. One million operations at max. load; million mechanical. **Terminals:** DPDT type has 8-pin plug; DT, 14-pin plug; 6PDT, 20-pin plug. **Temperature Range:** 4° to +158° F. Plastic dust cover, stud mounting. **Size:** All es: 1 17/64″ h. x 49/64″ d.; **62R2,** 61/64″ w.; **62R4,** 1 3/16″ w.; **62R6,** 4″ w. Weight, 1 oz.

2-AMP STANDARD CONTACTS

er rating, 2 amps at 28 VDC and 120 VAC resistive.

ma No. and Nom. Coil Volts		*	Coil Ohms	Nominal Power	Net Ea., Disc. Sch. 1*
Solder erminals	**PC Terminals**				
2-6DC	**62RE22-6DC**	†	52	700 mW	**$3.05**
2-12DC	**62RE22-12DC**	†	185	700 mW	**3.05**
2-24DC	**62RE22-24DC**	†	700	700 mW	**3.05**
2-48DC	**62RE22-48DC**	†	2,500	700 mW	**3.15**
2-110DC	**62RE22-110DC**	†	15,000	700 mW	**4.50**
4-6DC	**62RE42-6DC**	‡	52	700 mW	**3.40**
4-12DC	**62RE42-12DC**	‡	185	700 mW	**3.40**
4-24DC	**62RE42-24DC**	‡	700	700 mW	**3.40**
4-48DC	**62RE42-48DC**	‡	2,500	700 mW	**3.60**
4-110DC	**62RE42-110DC**	‡	15,000	700 mW	**5.00**
6-6DC	**62RE62-6DC**	§	25	1.4 W	**4.40**
6-12DC	**62RE62-12DC**	§	90	1.4 W	**4.40**
6-24DC	**62RE62-24DC**	§	430	1.4 W	**4.40**
6-48DC	**62RE62-48DC**	§	1,550	1.4 W	**4.65**
6-110DC	**62RE62-110DC**	§	9,000	1.4 W	**5.60**

AMP STANDARD SILVER CADMIUM OXIDE CONTACTS

order 5 amp standard silver cadmium oxide contacts (SCO) letters **SCO** after Sigma No. Example: 62R2-6DC-**SCO,** or E22-6DC-**SCO.** Power rating, 5 amps at 28 VDC; 4 amps at VAC resistive.

2-6DC	**62RE22-6DC**	†	52	700 mW	**$3.15**
2-12DC	**62RE22-12DC**	†	185	700 mW	**3.15**
2-24DC	**62RE22-24DC**	†	700	700 mW	**3.15**
2-48DC	**62RE22-48DC**	†	2,500	700 mW	**3.25**
2-110DC	**62RE22-110DC**	†	15,000	700 mW	**4.60**
4-6DC	**62RE42-6DC**	‡	52	700 mW	**3.60**
4-12DC	**62RE42-12DC**	‡	185	700 mW	**3.60**
4-24DC	**62RE42-24DC**	‡	700	700 mW	**3.60**
4-48DC	**62RE42-48DC**	‡	2,500	700 mW	**3.80**
4-110DC	**62RE42-110DC**	‡	15,000	700 mW	**5.20**
6-6DC	**62RE62-6DC**	§	25	1.4 W	**4.80**
6-12DC	**62RE62-12DC**	§	90	1.4 W	**4.80**
6-24DC	**62RE62-24DC**	§	430	1.4 W	**4.80**
6-48DC	**62RE62-48DC**	§	1,550	1.4 W	**5.00**
6-110DC	**62RE62-110DC**	§	9,000	1.4 W	**5.80**

BIFURCATED CONTACTS

er rating, 2 amps at 28 VDC; 1 amp at 120 VAC resistive. , 50 million operations, switching dry circuit loads; 10 million nax. load from low-power transistor drive and minimum coil ting.

2T-6DC	**62RE22T-6DC**	†	52	700 mW	**$3.45**
2T-12DC	**62RE22T-12DC**	†	185	700 mW	**3.45**
2T-24DC	**62RE22T-24DC**	†	700	700 mW	**3.45**
2T-48DC	**62RE22T-48DC**	†	2,500	700 mW	**3.55**
2T-110DC	**62RE22T-110DC**	†	15,000	700 mW	**4.90**
4T-6DC	**62RE42T-6DC**	‡	52	700 mW	**4.00**
4T-12DC	**62RE42T-12DC**	‡	185	700 mW	**4.00**
4T-24DC	**62RE42T-24DC**	‡	700	700 mW	**4.00**
4T-48DC	**62RE42T-48DC**	‡	2,500	700 mW	**4.10**
4T-110DC	**62RE42T-110DC**	‡	15,000	700 mW	**5.40**
6T-6DC	**62RE62T-6DC**	§	25	1.4 W	**4.90**
6T-12DC	**62RE62T-12DC**	§	90	1.4 W	**4.90**
6T-24DC	**62RE62T-24DC**	§	430	1.4 W	**4.90**
6T-48DC	**62RE62T-48DC**	§	1,550	1.4 W	**5.00**
6T-110DC	**62RE62T-110DC**	§	9,000	1.4 W	**6.30**

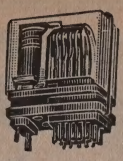
SENSITIVE TYPES

er rating, 1 amp at 28 VDC and 120 VAC resistive. Life, illion operations at maximum load.

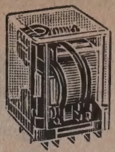
igma No. and Resis., Ohms		*	Min. mA DC	mW	Max. mA DC	Net Ea., Disc. Sch. 1*
Solder erminals	**PC Terminals**					
R2S-1000	**62RE22S-1000**	†	.85	85	8.5	**$3.40**
R2S-2500	**62RE22S-2500**	†	.58	85	5.8	**3.40**
R2S-5000	**62RE22S-5000**	†	.41	85	4.1	**3.80**
R2S-10,000	**62RE22S-10,000**	†	.31	85	3.1	**4.20**
R2S-15,000	**62RE22S-15,000**	†	.26	85	2.6	**4.60**
R4S-1000	**62RE42S-1000**	‡	1.3	175	13.0	**3.80**
R4S-2400	**62RE42S-2500**	‡	.84	175	8.4	**3.80**
R4S-5000	**62RE42S-5000**	‡	.62	175	6.2	**4.20**
R4S-10,000	**62RE42S-10,000**	‡	.45	175	4.5	**4.60**
R4S-15,000	**62RE42S-15,000**	‡	.35	175	3.5	**4.90**
R6S-1000	**62RE62S-1000**	§	1.6	250	16.0	**4.90**
R6S-2500	**62RE62S-2500**	§	1.0	250	10.0	**4.90**
R6S-5000	**62RE62S-5000**	§	.72	250	7.2	**5.40**
R6S-10,000	**62RE62S-10,000**	§	.50	250	5.0	**5.90**
R6S-15,000	**62RE62S-15,000**	§	.42	250	4.2	**6.20**

ntacts: †DPDT. ‡4PDT. §6PDT.

★QUANTITY DISCOUNTS ON ANOTHER SIGMA PAGE



62R6 and Socket



68R

63RO4

SERIES 62 (CONT'D.)

SOCKETS

Include grounding clip and hold-down spring.

Sigma No.	Description	Net Each, Sch. 1*
AD22	Solder terminal socket for DPDT	**$0.55**
AD41	PC terminal socket for DPDT*	**.55**
AD24	Solder terminal socket for 4PDT	**.65**
AD42	PC terminal socket for 4PDT*	**.65**
AD26	Solder terminal socket for 6PDT*	**.95**
AD43	PC terminal socket for 6PDT*	**.95**

*100″ grid.

SERIES 68 SPDT, DPDT, 3PDT UNIVERSAL-MOUNTING AC AND DC RELAYS, PLUS SOCKETS

Versatile, low cost and high efficiency for production-line switching of light to medium power loads. Fast installation; .187″ terminals may be soldered, quick-connected, or plugged into standard sockets. Life, 1 million operations at 28 VDC; ½ million at 120 VAC. Mechanical life, 10 million operations. UL Listed. **Contacts:** Rated 10 amps. SPDT has 5 terminals; DPDT, 8 terminals; 3PDT, 11 terminals. **Temperature Range:** AC types SPDT and DPDT, −49° F to +131° F; 3PDT to +113° F; DC types to +158° F. **Size:** 1.531″ w. x 1.406″ d. x 1.906″ h. in polycarbonate dust cover. Wt., 2.9 oz. max.

DC TYPES

Nominal power rating, 1.2 watts for all types.

Sigma No. and Nom. Coil Volts	Contacts	Coil Ohms	Pickup V Max.	Net Ea., Disc. Sch. 1*
68R1-6DC-SCO	SPDT	32	4.5	**$3.40**
68R1-12DC-SCO	SPDT	120	9	**3.40**
68R1-24DC-SCO	SPDT	470	18	**3.40**
68R1-110DC-SCO	SPDT	10,000	83	**3.85**
68R2-6DC-SCO	DPDT	32	4.5	**3.85**
68R2-12DC-SCO	DPDT	120	9	**3.85**
68R2-24DC-SCO	DPDT	470	18	**3.85**
68R2-110DC-SCO	DPDT	10,000	83	**4.40**
68R3-6DC-SCO*	3PDT	32	4.5	**4.40**
68R3-12DC-SCO*	3PDT	120	9	**4.40**
68R3-24DC-SCO*	3PDT	470	18	**4.40**
68R3-110DC-SCO*	3PDT	10,000	83	**4.85**

AC TYPES

Nominal power rating, 2.1 VA SPDT and DPDT; 2.5 VA, 3PDT.

68R1-6AC-SCO	SPDT	6	5.1	**$3.50**
68R1-12AC-SCO	SPDT	21	10.2	**3.50**
68R1-24AC-SCO	SPDT	75	20.4	**3.50**
68R1-120AC-SCO	SPDT	2,250	98	**3.50**
68R1-240AC-SCO	SPDT	9,110	196	**3.85**
68R2-6AC-SCO	DPDT	6	5.1	**4.30**
68R2-12AC-SCO	DPDT	21	10.2	**4.30**
68R2-24AC-SCO	DPDT	75	20.4	**4.30**
68R2-120AC-SCO	DPDT	2,250	98	**4.30**
68R2-240AC-SCO	DPDT	9,110	196	**4.75**
68R3-6AC-SCO*	3PDT	4.5	5.1	**4.85**
68R3-12AC-SCO*	3PDT	19	10.2	**4.85**
68R3-24AC-SCO*	3PDT	74	20.4	**4.85**
68R3-120AC-SCO*	3PDT	2,000	98	**4.85**
68R3-240AC-SCO*	3PDT	7,500	196	**5.30**

*Also available with top mounting flange (total height, 2.90″) molded on to case, at same price; to order, use prefix **68R34-** (e.g., **68R34-**6AC-SCO).

SOCKETS

Sigma No.	Terminals and Use	Net Each, Sch. 1*
AD62-1	Solder term.; all but 68R34	**$0.75**
AD63	PC terms.; all but 68R34	**.85**

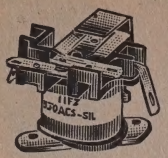
SERIES 63 DPDT, 4PDT TELEPHONE-TYPE DC RELAYS

Compact, telephone-type relay for reliable, minimum-distortion switching of low-level audio signals and use in logic circuitry. Good sensitivity, low and stable contact resistance; 10-million operation life. Contact ratings: 2 amps at 120 VAC; 1 amp at 28 VDC; .6 amp at 48 VDC. Nominal power: 720 mW. Temperature range, +14° to +158° F. **63RO2:** Plastic dust cover; 8-pin octal plug. Size, 1 13/32″ w. x 1 19/32″ d. x 2¼″ h. Weight, 4 oz. **63RO4:** Plastic dust cover; 20-pin plug (must be used with socket AD35). Size, 1 13/32″ w. x 1 13/16″ d. x 2¼″ h. Weight, 4 oz.

Sigma No. and Volts	Contacts	Coil Ohms	Net Each Disc. Sch. 1*
63RO2-6DC	DPDT	50	**$10.90**
63RO2-12DC	DPDT	200	**10.90**
63RO2-24DC	DPDT	800	**10.90**
63RO2-48DC	DPDT	3,200	**10.90**
63RO4-6DC	4PDT	50	**14.10**
63RO4-12DC	4PDT	200	**14.10**
63RO4-24DC	4PDT	800	**14.10**
63RO4-48DC	4PDT	3,200	**14.10**
AD35	Sigma socket for 63RO4 relays		**.50***

*No quantity discount offered.

SIGMA Relays INDUSTRIAL, COMMERCIAL, MILITAR



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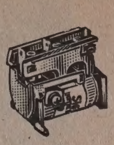

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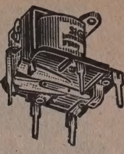

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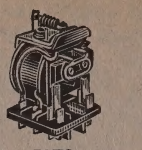


50F2

50RO1

67R4

GENERAL PURPOSE RELAYS

SERIES 11 SPDT SMALL, LOW-COST RELAYS

Rated for 1-amp switching at 28 VDC/120 VAC resistive. DC operation from sliding-current or on-off 50 mW signals; AC operation from .3 VA on-off signals. Good environmental capability. Temperature range, −40° to +122° F. UL and CSA Listed. Unenclosed. **Type 11FZ and 11F:** Screw mounting; 5 solder terminals. Size, 1⁷⁄₃₂″ w. x 1³⁄₁₆″ d. x 1¹⁄₁₆″ h. **Type 11F2:** Same, with insulated base. Size, 1⁷⁄₃₂″ w. x 1¹⁷⁄₃₂″ d. x 1³⁄₁₆″ h. **Type 11FP:** Shoulder lug mounting; printed circuit terminals. Size, 1⁷⁄₃₂″ sq. x 1⁵⁄₃₂″ h. Weight, 1.2 oz. max.

AC TYPES

Sigma Type No.	Coil Ohms	Pickup Max., mA	Nominal Volts	Net Each, Disc. Sched. *: AC, 1; DC, 2
11FZ-25-ACS SIL	25	....	6	**$4.95**
11FZ-550-ACS SIL	550	....	24	**5.10**
11FZ-9,000-ACS SIL	9,000	....	120	**5.80**
DC TYPES				
11F-100-G SIL	100	22.0	....	**$3.25**
11F-250-G SIL	250	14.0	6	**3.20**
11F-550-G SIL	550	9.5	....	**3.20**
11F-1,000-G SIL	1,000	7.0	12	**3.20**
11F-1,500-G SIL	1,500	5.8	....	**3.20**
11F-2,300-G SIL	2,300	4.6	....	**3.20**
11F-6,000-G SIL	6,000	2.9	24	**3.50**
11F-9,000-G SIL	9,000	2.4	....	**3.80**
11F2-1,000-G SIL	1,000	7.0	12	**3.50**
11F2-2,300-G SIL	2,300	4.6	....	**3.50**
11F2-6,000-G SIL	6,000	2.9	24	**3.80**
11F2-9,000-G SIL	9,000	2.4	....	**4.20**
11FP-1,000-G SIL	1,000	7.0	12	**3.25**
11FP-1,500-G SIL	1,500	5.8	....	**3.50**
11FP-2,300-G SIL	2,300	4.6	....	**3.25**
11FP-6,000-G SIL	6,000	2.9	24	**3.80**

SERIES 59 SPDT SNAP-SWITCH DC RELAYS

Dependable, low-cost relay for commercial applications where economy and size determine choice. Snap-switch contact assembly provides positive operation from on-off or slowly changing signals. Contact rating, 2 amps at 28 VDC/120 VAC resistive. Mechanical life, 1 million operations. Temperature range, +14° to +158° F. UL and CSA Listed. **Type 59F1D:** Unenclosed, screw mounting, solder terminals. Size, 1⅛″ w. x ²⁹⁄₃₂″ d. x 1³⁄₆₄″ h. Weight, .8 oz. **Type 59AO1D:** Metal dust cover, 8-pin octal plug. Size, 1⁵⁄₁₆″ dia. x 1¹⁹⁄₃₂″ h. Weight, 1.5 oz.

Sigma No.	Nom. Coil VDC	Coil Ohms	Net Each, Disc. Sch. 2*
59F1D-6DC	6	120	**$2.70**
59F1D-12DC	12	465	**2.70**
59F1D-24DC	24	1,800	**2.70**
59AO1D-6DC	6	120	**4.65**
59AO1D-12DC	12	465	**4.65**
59AO1D-24DC	24	1,800	**4.65**

SERIES 65 SPDT COMMERCIAL DC RELAYS

Small, low-cost commercial relay offering positive response to low-power signals. Excellent adjustment stability, sturdy construction, 5-million operation mechanical life. Typical applications: Remote TV channel selectors, vending machines, semi-automatic home slide projectors, automatic toys and games. Contact rating, 3 amp at 28 VDC/120 VAC resistive. Nominal power, 90 mW. Temperature range, +14° to +158° F. All unenclosed, screw mounting. **65F1A:** Solder terminals. Size, 1¹⁄₁₆″ w. x 1³⁄₁₆″ d. x ⁶³⁄₆₄″ h. **65FP1A:** Printed-circuit terminals. Size, 1¹⁄₁₆″ w. x 1³⁄₁₆″ d. x 1¼″ h. Weight, 1 oz.

Sigma No.	DC Volts	Coil Ohms	Net Each, Disc. Sch. 2*
65F1A-6DC	6	410	**$1.60**
65F1A-12DC	12	1,640	**1.60**
65F1A-24DC	24	6,560	**1.60**
65FP1A-6DC	6	410	**1.70**
65FP1A-12DC	12	1,640	**1.70**
65FP1A-24DC	24	6,560	**1.70**

★QUANTITY DISCOUNT SCHEDULES

Disc. Sch. 1		Disc. Sch. 2		Disc. Sch. 3		Disc. Sch. 4	
Lots of	**Discount**	**Lots of**	**Discount**	**Lots of**	**Discount**	**Lots of**	**Discount**
1–24	Net	1–99	Net	1–24	Net	1–9	Net
25–49	−5%	100–499	−10%	25–49	−5%	10–24	−10%
50–74	−10%	500–2499	−30%	50–74	−10%	25–49	−20%
75–99	−20%			75–99	−15%	50–99	−30%
100–249	−30%			100–499	−25%	100–249	−35%
250–499	−35%					250 Up	−40%

SERIES 50 SPDT, DPDT, 3PDT AC AND DC RELAY

Highly efficient, compact, low-cost relay for switching of indu trial loads of 5 amps to activate small solenoids or other relay Mechanical life, 10 million operations. 50ROL types have inc cating lamp which lights when coil is energized. UL and CS Listed. Temperature range: 50F, +14° to +158° F; 50RO ar 50ROL, to +131° F. **50F:** Unenclosed, screw mounting, sold terminals. Size, 1¹¹⁄₆₄″ sq. x 1¹⁵⁄₁₆″ h. Weight, 2 oz. **50RO ar** **50ROL:** Plastic dust cover. Size, 1⅜″ sq. x 2³⁄₃₂″ h. **50RO1 ar** **50RO2:** 8-pin octal plug; **50RO3,** standard 11-pin plug. Weigh 3 oz. **Note:** Silver-cadmium-oxide contacts, rated 10 amps at VDC/120 VAC resistive, are available on all relays listed belo To order, add suffix **SCO** to number (e.g., 50F1-6AC-**SCO**); ac **10c** to prices shown for SPDT types; **15c** to DPDT; **20c** to 3PD

SPDT TYPES

Nom. Coil Volts*	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1*	
			Unenclosed* Sigma No. 50F1-	**Enclosed* Sigma No. 50RO**
6 AC	5.8	2.2 VA	**$3.25**	**$5.70**
12 AC	23.5	2.2 VA	**3.25**	**5.70**
24 AC	95	2.2 VA	**3.25**	**5.70**
120 AC	2,300	2.2 VA	**3.25**	**5.70**
240 AC	7,500	2.2 VA	**3.80**	**6.10**
6 DC	23.5	1.5 W	**3.20**	**5.55**
12 DC	95	1.5 W	**3.20**	**5.55**
24 DC	430	1.5 W	**3.20**	**5.55**
48 DC	1,630	1.5 W	**3.20**	**5.55**
110 DC	10,000	1.5 W	**3.70**	**6.05**

DPDT TYPES

Nom. Coil Volts*	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1*	
			Unenclosed* Sigma No. 50F2-	**Enclosed* Sigma No. 50RO**
6 AC	5.8	2.2 VA	**$4.00**	**$6.30**
12 AC	23.5	2.2 VA	**4.00**	**6.30**
24 AC	95	2.2 VA	**4.00**	**6.30**
120 AC§	2,300	2.2 VA	**4.00**	**6.30**
240 AC	7,500	2.2 VA	**4.40**	**6.75**
6 DC	23.5	1.5 W	**3.60**	**6.30**
12 DC	95	1.5 W	**3.60**	**6.30**
24 DC†	430	1.5 W	**3.60**	**6.30**
48 DC	1,630	1.5 W	**3.60**	**6.30**
110 DC	10,000	1.5 W	**4.10**	**6.70**

3PDT TYPES

Nom. Coil Volts*	Coil Ohms	Nominal Power	Net Each, Disc. Sch. 1*	
			Unenclosed* Sigma No. 50F3-	**Enclosed* Sigma No. 50RO**
6 AC	5.8	2.2 VA	**$4.40**	**$7.25**
12 AC	23.5	2.2 VA	**4.40**	**7.25**
24 AC	95	2.2 VA	**4.40**	**7.25**
120 AC#	2,300	2.2 VA	**4.40**	**7.25**
240 AC	7,500	2.2 VA	**4.85**	**7.80**
6 DC	23.5	1.5 W	**4.05**	**7.25**
12 DC	95	1.5 W	**4.05**	**7.25**
24 DC‡	430	1.5 W	**4.05**	**7.25**
48 DC	1,630	1.5 W	**4.05**	**7.25**
110 DC	10,000	1.5 W	**4.55**	**7.70**

*To order, add suffix for voltage to Sigma No.; e.g., 50RO1-6A

†Available as **50ROL2-24DC-SCO**—Net Each.......... **$7.6**

‡Available as **50ROL3-24DC-SCO**—Net Each.......... **8.6**

§Available as **50ROL2-120AC-SCO**—Net Each.......... **7.6**

#Available as **50ROL3-120AC-SCO**—Net Each.......... **8.6**

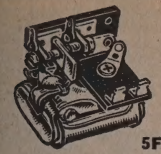
SERIES 67 4PDT MINIATURE AC AND DC RELAY

Miniature, rugged relays. Solder or printed-circuit termin sockets for fast chassis top mounting and easy wiring. Rel and sockets interchangeable with comparable types. Plastic du cover, stud mounting, 14-pin plug. **Contact Rating:** 5 amps 28 VDC/120 VAC resistive. **Temperature Range:** −4° to +14 F. **Operations at Rated Load:** 100,000 min.; 100 million mecha ical DC types; 50 million AC types. UL and CSA Listed. **Si** 1⁷⁄₆₄″ w. x ⁵⁵⁄₆₄″ d. x 1¹⁹⁄₆₄″ h. Weight, 1¼ oz.

Sigma No. and Volts	Coil Ohms	Nominal Power	Net Each, Disc. Sch.
67R4-12AC	43	1.2 VA	**$5.00**
67R4-24AC	160	1.2 VA	**5.00**
67R4-120AC	3,900	1.2 VA	**5.40**
67R4-6DC	40	900 mW	**4.40**
67R4-12DC	160	900 mW	**4.40**
67R4-24DC	650	900 mW	**4.40**
67R4-48DC	2,600	900 mW	**4.60**
67R4-110DC	11,000	900 mW	**5.10**
67RV4-12DC-SCO*	160	900 mW	**4.40**
67RV4-24DC-SCO*	650	900 mW	**4.40**
67RV4-24AC-SCO*	160	1.2 VA	**5.00**
67RV4-120AC-SCO*	3,900	1.2 VA	**5.40**
AD28	Solder term. skt. for 67R4		**.60†**
AD29	PC terminal socket for 67R4		**.60†**

*Same as 67R4, but with arc barrier added. †No quantity disco offered.

SIGMA Relays INDUSTRIAL, COMMERCIAL, MILITARY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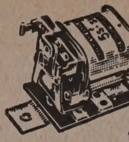
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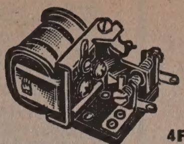
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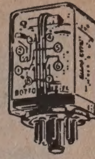

42RO

SENSITIVE RELAYS

ERIES 5 SPDT HIGH-SENSITIVITY DC RELAYS

n exceptionally versatile, rugged relay; highly sensitive, precise,
ble. Unusually high contact forces at inputs as low as 1 mW
djustment SS; 5 mW, S), gradually changing or on-off. Useful
overload-underload detection. Reacts without amplification to
nute variations from normal. Withstands heavy voltage or
rrent 30-to-1 overloads. Contact ratings, S, 1 amp; SS, .25 amp;
th 28 VDC/120 VAC resistive. All types are UL Listed
use in burglary protection equipment. Temperature range: S,
4° to +158° F; SS, +50° to +140° F. **5F:** Unenclosed, screw
ounting, solder terminals. Size, 1⅜" w. x 1¾" d. x 1½" h.
eight, 4¼ oz. **5JO:** Hermetically sealed; 8-pin plug. Size,
8" sq. x 2⅝" h. Weight, 7¼ oz. **5R:** Dust cover; 5-pin plug,
O, 8-pin. Size, 1 9/16" sq. x 2 9/32" h. Weight, 5¾ oz.

Sigma Type No.	Coil Ohms	Pickup, Max. mADC	Dropout, Min. mADC	Net Ea., Disc. Sch. 1*
-1,000 S-SIL	1,000	2.3	.80	$12.30
-2,500 S-SIL	2,500	1.4	.50	12.30
-5,000 S-SIL	5,000	1.0	.40	13.15
-10,000 S-SIL	10,000	.70	.25	14.40
-16,000 S-SIL	16,000	.55	.20	15.50
-1,000 SS-PAL	1,000	1.0	.40	13.95
-10,000 SS-PAL	10,000	.30	.13	16.00
O-1,000 S-SIL	1,000	2.3	.80	22.55
O-2,500 S-SIL	2,500	1.4	.50	22.55
O-5,000 S-SIL	5,000	1.0	.40	23.40
O-10,000 S-SIL	10,000	.70	.25	24.60
O-16,000 S-SIL	16,000	.55	.20	25.95
-1,000 S-SIL	1,000	2.3	.80	15.50
-2,500 S-SIL	2,500	1.4	.50	15.50
-5,000 S-SIL	5,000	1.0	.40	16.35
-10,000 S-SIL	10,000	.70	.25	17.50
-16,000 S-SIL	16,000	.55	.20	18.85
-1,000 SS-PAL	1,000	1.0	.40	18.40
-10,000 SS-PAL	10,000	.30	.13	20.75
O-1,000 S-SIL	1,000	2.3	.80	16.70
O-2,500 S-SIL	2,500	1.4	.50	16.70
O-5,000 S-SIL	5,000	1.0	.40	17.55
O-10,000 S-SIL	10,000	.70	.25	18.85
O-16,000 S-SIL	16,000	.55	.20	20.25

RIES 41 SPDT INDUSTRIAL AC AND DC RELAYS

ugged, versatile industrial relay. One-billion-operation me-
anical life. Balanced design for coil overload capacity 4-6 times
ed input; long contact life. Operates from on-off AC or DC
nals, gradually changing DC signals. Pickup power: Adjust-
nt S: 40 mW; ACS: .2 VA; ACG: .4 VA. Contact rating: ACG,
amps at 28 VDC/120 VAC; S, ACS: 2 amps. Temperature
ge, −67° to +185° F except plastic covers, to +158° F. All
en and dust-covered types are UL and CSA Listed. **41F,**
FZ: Unenclosed, screw mounting, solder terminals. Size, 1 17/64"
x 2 9/32" d. x 1 7/16" h. **41RO, 41ROZ:** Dust cover, 8-pin octal plug.
e, 1 21/64" sq. x 2 1/16" h. **41RO6:** Plastic dust cover, 8-pin octal
g. Size, 1 23/64" sq. x 2 7/64" h. **41JOZ:** Hermetically sealed, 8-pin
al plug. Size, 1⅝" sq. x 2⅝" h. **41R, 41RZ:** Dust cover, 5-pin
g. Size, 41R-1 15/16" sq. x 1 17/32" h.; 41RZ-1 17/32" sq. x 1 15/16" h.
ights: Enclosed, 5¼ oz. max.; unenclosed, 2½ oz.

AC TYPES

Sigma Type No.	Coil Ohms	Nominal Volts	Pickup Max.†	Net Ea., Sch. 1*
FZ-10 ACG-BSL	10	6	4 V	$ 5.00
FZ-200 ACG-BSL	200	24	18 V	5.70
FZ-5,000 ACG-BSL	5,000	120	90 V	5.70
FZ-35 ACS-SIL	35	6	4 V	5.80
FZ-10,000 ACS-SIL	10,000	120	85 V	7.00
OZ-10,000 ACS-SIL	10,000	120	85 V	17.20
OZ-12,000 ACS-SIL	12,000	150	95 V	16.80
ROZ-5,000 ACG-BSL	5,000	120	90 V	8.80
RZ-5,000 ACG-BSL	5,000	120	90 V	8.00

DC TYPES

F-200 S-SIL	200	6	15 mA	$ 6.00
F-500 S-SIL	500	....	9.0 mA	6.00
F-1,000 S-SIL	1,000	12	6.5 mA	6.00
F-2,500 S-SIL	2,500	....	4.0 mA	6.30
F-5,000 S-SIL	5,000	24	3.0 mA	6.30
F-10,000 S-SIL	10,000	....	2.0 mA	6.60
F-200 G-BSL*	200	12	32 mA	5.70
F-1,000 G-BSL*	1,000	24	14 mA	5.70
F-5,000 G-BSL*	5,000	....	6.5 mA	5.45
R-1,000 S-SIL	1,000	12	6.5 mA	8.95
R-5,000 S-SIL	5,000	24	3.0 mA	9.20
R-8,000 S-SIL	8,000	....	2.3 mA	9.60
RO-1,000 S-SIL	1,000	12	6.5 mA	9.45
RO-2,500 S-SIL	2,500	....	4.0 mA	9.45
RO-5,000 S-SIL	5,000	24	3.0 mA	9.75
RO-10,000 S-SIL	10,000	....	2.0 mA	10.10
RO6-500 S-SIL	500	....	9.0 mA	8.95
RO6-1,000 S-SIL	1,000	12	6.5 mA	8.55
RO6-2,500 S-SIL	2,500	....	4.0 mA	8.55
RO6-5,000 S-SIL	5,000	24	3.0 mA	8.75

SERIES 4 SPDT PLATE CIRCUIT DC RELAYS

Stable, precise, low cost. For vacuum tube and transistor drives, applications requiring high dropout or narrow differential, and operation from gradually changing or on-off signals. Ideal for circuits where energizing current does not drop to zero. Pickup power, 20 mW. Contact rating, 2 amps at 28 VDC/120 VAC resistive. Temperature range, +32° to +122° F. **4F:** Unenclosed, screw mounting, solder terminals. Size, 1¾" w. x 1½" d. x 1 15/32" h. Weight, 2¼ oz. **4R:** UL Listed for use in burglary protection equipment. Dust cover, 5-pin plug. Size, 1 9/16" sq. x 2 19/32" h. Weight, 3¾ oz.

Sigma Type No.	Coil Ohms	Pickup, Max. mADC	Dropout Min. mADC	Net Each Disc. Sch. 1*
4F-1,000 S-SIL	1,000	4.5	2.0	$ 8.65
4F-2,500 S-SIL	2,500	3.0	1.3	8.65
4F-5,000 S-SIL	5,000	2.0	.90	9.10
4F-8,000 S-SIL	8,000	1.6	.75	9.40
4F-10,000 S-SIL	10,000	1.4	.65	9.40
4R-1,000 S-SIL	1,000	4.5	2.0	11.80
4R-2,500 S-SIL	2,500	3.0	1.3	13.00
4R-5,000 S-SIL	5,000	2.0	.90	12.15
4R-8,000 S-SIL	8,000	1.6	.75	12.50
4R-10,000 S-SIL	10,000	1.4	.65	12.50

SERIES 42 DPDT AC AND DC RELAYS

For general-purpose applications from alarm and control systems to demand meters and timing circuits. Combines sensitivity from 100 mW with rugged design for 1 billion operation mechanical life (1 million under load). Low power minimizes coil load in circuits with limited load-handling ability. Excellent stability, high circuit isolation; coil overload capacity 4 to 6 times rated input. High release for use in circuits with high idle current. Pickup power: Adjustment S: 100 mW; G: 200 mW; ACS: .3 VA; ACG; .5 VA. Contact ratings (at 28 VDC/120 VAC resistive): ACG, G: 5 A; ACS, S: 2 A. Dust-covered and open types UL and CSA Listed. Temperature range, −67° to +185° F except plastic covers, to +158° F. **42RO, 42ROZ:** Plastic dust cover, 8-pin octal plug. Size, 1 23/64" sq. x 2 7/64" h. **42RO6, 42RO6Z:** Differ in wiring only. **42JOZ:** Hermetically sealed, 8-pin plug. Size, 1⅝" sq. x 2⅝" h. **42F:** Unenclosed, stud mounting, solder terminals. 1 1/16" w. x 1 19/32" d. x 1 13/32" h. Weight, 2½ to 5¼ oz.

AC TYPES

Sigma Type No.	Coil Ohms	Nominal Volts	Pickup Max.†	Net Ea., Disc. Sch. 1*
42JOZ-4,000 ACG-SIL	4,000	120 VAC	90 V	$15.70
42ROZ-8 ACG-SIL	8	6 VAC	4 V	9.10
42ROZ-50 ACG-SIL	50	12 VAC	9 V	9.10
42ROZ-200 ACG-SIL	200	24 VAC	18 V	9.10
42ROZ-4,000 ACG-SIL	4,000	120 VAC	90 V	9.10
42ROZ-7,000 ACS-SIL	7,000	120 VAC	90 V	10.85
42RO6Z-8 ACG-SIL	8	6 VAC	4 V	9.45
42RO6Z-4,000 ACG-SIL	4,000	120 VAC	90 V	9.10

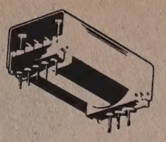
DC TYPES

42F-150 G-SIL	150	....	38 mA	$ 7.10
42F-500 G-SIL	500	....	20 mA	7.10
42F-1,000 G-SIL	1,000	24 VDC	14 mA	7.10
42F-2,500 G-SIL	2,500	48 VDC	9.0 mA	7.10
42RO-50 G-SIL	50	6 VDC	65 mA	9.60
42RO-100 G-SIL	100	....	45 mA	9.60
42RO-200 G-SIL	200	12 VDC	32 mA	9.10
42RO-500 G-SIL	500	....	20 mA	9.10
42RO-1,000 G-SIL	1,000	24 VDC	14 mA	9.10
42RO-2,500 G-SIL	2,500	48 VDC	9.0 mA	9.10
42RO-5,000 G-SIL	5,000	....	6.5 mA	9.45
42RO-10,000 G-SIL	10,000	....	4.5 mA	9.70
42RO-12,000 G-SIL	12,000	....	4.0 mA	10.15
42RO-100 S-SIL	100	....	32 mA	10.45
42RO-150 S-SIL	150	6 VDC	26 mA	10.00
42RO-200 S-SIL	200	....	22 mA	10.45
42RO-500 S-SIL	500	12 VDC	14 mA	10.00
42RO-1,000 S-SIL	1,000	....	10 mA	10.00
42RO-2,500 S-SIL	2,500	24 VDC	6.2 mA	10.00
42RO-5,000 S-SIL	5,000	....	4.5 mA	10.35
42RO-10,000 S-SIL	10,000	....	3.1 mA	10.65
42RO6-50 G-SIL	50	6 VDC	65 mA	9.60
42RO6-500 G-SIL	500	....	20 mA	9.10
42RO6-1,000 G-SIL	1,000	24 VDC	14 mA	9.10
42RO6-2,500 G-SIL	2,500	48 VDC	9.0 mA	9.10
42RO6-5,000 G-SIL	5,000	....	6.5 mA	9.45
42RO6-10,000 G-SIL	10,000	....	4.5 mA	9.70
42RO6-500 S-SIL	500	12 VDC	14 mA	10.45
42RO6-1,000 S-SIL	1,000	....	10 mA	10.00
42RO6-2,500 S-SIL	2,500	24 VDC	6.2 mA	10.00

*Pickup power, 200 mW; contact rating 10 amps. †Dropout will always be higher than 20% of max. pickup.

★SEE PREVIOUS PAGE FOR QUANTITY DISCOUNTS

S-D Dry Reed Relays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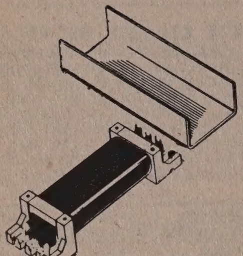
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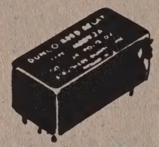
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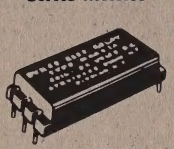
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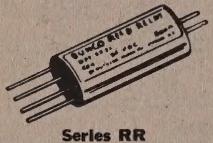
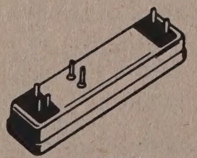
Series MRR


Series RR

Series MRR-M


Series RRLM

★QUANTITY DISCOUNTS

For larger quantity orders, the following discounts apply. Use price shown and multiply with multipliers shown.

For Lots	Discount	Multiplier
25–49	−5%	.95
50–74	−10%	.90
75–99	−20%	.80
100 Up	−30%	.70

DRY REED RELAYS

Quality-made dry reed relays featuring fast response, excellent sensitivity, and reliabl performance. Fully equipped with contamination-proof, glass-sealed reed switches, non critical mounting, and complete magnetic shielding for exceptionally fast low-level an light-duty switching. Available with either miniature or standard size reed switches, in wide selection of Form A (SPST-NO), Form B (SPST-NC), or Form C (SPDT) contac arrangements. **Rating:** Miniature size, not to exceed 10 VA at maximums of 0.5 am or 250 VAC or VDC (3 VA at maximums of 0.25 amp or 100 VAC or VDC for Form C) standard size, not to exceed 15 VA at maximums of 1 amp or 250 VAC or VDC (10 V at maximums of 0.5 amp or 250 VAC or VDC for Form C). **Performance Time:** Operate 0.5–1.5 millisec for miniature size, 1.5–2.0 millisec for standard size; release, 0.5–1. millisec, all sizes. **Life:** 200 million operations (50 for Form C miniature size) in dr circuit, 20 million operations with miniature switches, and 100 million operations (50 fo Form C) with standard switches at half rating. 10 million operations with miniatur switches, and 20 million operations with standard switches at full rating. **Dielectri Strength:** Miniature type, 250 volts rms; standard type, 400 volts rms. **Ambient Tem perature Range:** −20° C to +60° C. **Insulation Resistance:** Minimum 1000 megohms

OPEN TYPE RELAYS FOR P/C MOUNTING

Compact units for low cost applications. Coils and reed-switch capsules are protected b snap-on metal cans that also provide magnetic shielding. Reed switch leads connect t "in-line" non-magnetic PC terminals. **Terminal Spacing:** Miniature reed MRRN type 1″ centers, 0.1″ grid; standard reed RRN type, 1.9″ centers, 0.2″ grid.

		Coil Resis., Ohms DC			Body Size Inches W. x D. x H.	Net Each*	
S-D Type	Contacts and Form	at 6 VDC■	at 12 VDC■	at 24 VDC■		6, 12 VDC	24 VDC
MRRN1A	1A	190	750	3000	1.125 x .406 x .375	$ 3.30	$ 3.70
MRRN2A	2A	125	500	2000	1.125 x .535 x .375	4.70	5.00
MRRN3A	3A	100	400	1600	1.125 x .609 x .375	6.40	6.40
MRRN4A	4A	65	250	1000	1.125 x .706 x .375	8.00	8.00
MRRN1B	1B	125	500	2000	1.125 x .535 x .375	3.70	4.10
MRRN2B	2B	100	400	1600	1.125 x .609 x .375	5.30	5.60
MRRN1C	1C	190	750	3000	1.125 x .406 x .375	6.50	6.50
MRRN2C	2C	100	400	1600	1.125 x .609 x .375	9.50	9.50
MRRN3C	3C	65	250	1000	1.125 x .706 x .375	12.50	12.50
RRN1A	1A	150	600	2400	2.500 x .740 x .641	3.00	3.00
RRN2A	2A	100	400	1600	2.500 x .958 x .641	4.60	4.60
RRN3A	3A	50	200	800	2.500 x 1.188 x .641	5.30	5.30
RRN4A	4A	40	150	600	2.500 x 1.418 x .641	7.00	7.00
RRN1B	1B	100	400	1600	2.500 x .958 x .641	3.40	3.40
RRN2B	2B	50	200	800	2.500 x 1.188 x .641	5.20	5.20
RRN1C	1C	150	600	2400	2.500 x .740 x .641	5.80	5.80
RRN2C	2C	50	200	800	2.500 x 1.188 x .641	8.30	8.30
RRN3C	3C	40	150	600	2.500 x 1.418 x .641	11.30	11.30

PLASTIC CASE TYPE RELAYS FOR P/C MOUNTING

Mechanically protected relays come with ultrasonically welded thermoplastic cas Standoff pads near terminations facilitate production line soldering. Internal magneti shields. **Terminal Spacing:** 0.1″ grid. Miniature reed switch type only.

MRRK1A	1A	100	400	1600	1.290 x .660 x .445	$ 3.60	$ 4.00
MRRK2A	2A	100	400	1600	1.290 x .660 x .445	5.20	5.40
MRRK3A	3A	100	400	1600	1.290 x .660 x .445	7.00	7.00
MRRK1A1B	1A and 1B	100	400	1600	1.290 x .660 x .445	5.60	5.60
MRRK1B	1B	100	400	1600	1.290 x .660 x .445	4.00	4.20
MRRK2B	2B	100	400	1600	1.290 x .660 x .445	5.80	5.80
MRRK1C	1C	100	400	1600	1.290 x .660 x .445	7.00	7.00
MRRK2C	2C	100	400	1600	1.290 x .660 x .445	10.00	10.00

LOW PROFILE EPOXY MOLDED RELAYS FOR P/C MOUNTING

Low-profile, one, two, and four-pole relays for use on printed circuit boards. Molded int rigid, homogeneous structures with internal magnetic shielding. In-line PC terminals a on 0.172″ grid spacing. Miniature reed switch type only.

MRRS1A	1A	144	576	2300	1.300 x .500 x .350	$4.40	$4.4
MRRS2A	2A	95	380	1440	1.300 x .625 x .350	6.10	6.1
MRRS4A	4A	31	125	500	1.300 x 1.00 x .350	7.70	7.7
MRRS1A1B	1A and 1B	31	125	500	1.300 x 1.00 x .350	8.40	8.4
MRRS1B	1B	95	380	1440	1.300 x .625 x .350	6.10	6.1

EPOXY MOLDED RELAYS WITH AXIAL LEADS

Epoxy molded units for maximum mechanical protection. Leads may be soldered t terminal studs or supporting wire, or bent at right angle for printed circuit use. Wra around cans for external magnetic shielding. **Terminal Spacing:** Miniature reed MR type, 0.115″; standard reed RR type, 0.2″.

MRR1A	1A	288	1152	4600	1.062 x .425 dia.	$ 4.20	$ 6.2
MRR2A	2A	144	576	2300	1.062 x .430 x .515	6.20	7.7
MRR4A	4A	72	288	1152	1.062 x .535 x .810	10.60	10.6
MRR12A	12A	24	94	384	1.062 x .635 x 1.805	27.30	27.3
RR1A	1A	90	360	1440	1.875 x .655 dia.	3.20	3.2
RR2A	2A	36	145	580	1.875 x .670 x .840	5.00	5.0
RR4AF	4A	24	95	380	1.875 x .810 x 1.385	8.60	8.6
RR1B	1B	90	360	1440	1.875 x .655 dia.	4.10	4.1

METAL CAN TYPE RELAYS FOR P/C MOUNTING

Quality designed relays in metal cans. Steel cases provide magnetic shielding and comple mechanical protection. **Terminal Spacing:** Miniature reed MRR-M type, 0.1″; standa reed RR-M type, 0.2″.

MRR1AM	1A	144	576	2304	1.125 x .500 x .500	$ 5.70	$ 5.7
MRR2AM	2A	72	288	1152	1.125 x .500 x .500	6.80	6.8
MRR3AM	3A	72	288	1152	1.125 x .500 x .500	7.90	7.9
MRR1BM	1B	144	576	2304	1.125 x .500 x .500	5.90	5.9
MRR2BM	2B	72	288	1152	1.125 x .500 x .500	7.00	7.0
MRR1CM	1C	144	576	2304	1.125 x .500 x .500	10.60	10.6
MRR1A1BM	1A and 1B	72	288	1152	1.125 x .500 x .500	7.70	7.7
MRR2A2BM	2A and 2B	40	135	800	1.795 x .795 x .495	14.30	14.3
RR2BM	2B	36	144	576	2.938 x .800 x .550	7.00	7.0
RR1CM	1C	288	1152	4600	2.938 x .600 x .550	12.70	12.7
RR1A1BM	1A and 1B	36	144	576	2.938 x .800 x .550	7.00	7.0
RR2A2BM	2A and 2B	18	72	288	2.938 x 1.200 x .550	12.30	12.3
RRLM1CM	1C*	288	1152	4600	2.938 x .600 x .550	11.80	11.8
RRLM-1CM102	1C†	120	480	1920	2.938 x .600 x .550	12.70	12.7
RRFF4-A2BM	‡	22	90	360			
	‡	45	180	720	2.938 x 2.100 x .650	24.20	24.2

*Single coil, bistable, magnetic latching type. †Double coil, bistable, magnetic latchi type. ‡4A and 2B contacts, of which 2A and 1B available for load handling.

■Specify type number and coil voltage when ordering.

Reed and Hybrid Relays

"DIP" REED RELAYS FOR P/C MOUNTING

lly compatible with 14-terminal dual-in-line ICs, highly sensitive relays need little or buffering with DTL and TTL computer logic or HNIL solid state industrial control. **ting:** Form A, not to exceed 10 VA at maximums of 250 mA or 100 volts; Form C, t to exceed 3 VA at maximums of 250 mA or 28 volts. **Spacing:** 0.1". **Size:** 0.750" w. x " d. x 0.275" h. (0.350" h. for MRR2ADLX series), above PC board.

S-D Type	Contacts	Coil Data▪						Net Each*
		Nom. at 25° C Amb.			Must operate at 70° C‡			
		VDC	mW	Ohms	VDC	mA	mW	
RR1AD*	1 Form A	5	70	360	4.0	9.3	37	$3.50
RR1ADSR	1 Form A	5	50	500	4.5†	9.8†	40†	4.50
RR1ADS	1 Form A	5	70	360	4.0	9.3	37	3.50
RR1ADS	1 Form A	6	100	360	4.8	11.2	54	3.50
RR1ADS	1 Form A	12	100	1440	9.6	5.6	54	3.50
RR1ADS	1 Form A	24	100	5760	19.2	2.8	54	3.50
RR1CDL	1 Form C	5	250	100	4.0	33.0	132	7.00
RR1CDL	1 Form C	6	290	125	4.8	32.0	154	7.00
RR1CDL	1 Form C	12	290	500	9.6	16.0	154	7.00
RR1CDL	1 Form C	24	290	2000	19.2	8.0	154	8.00
RR2ADLX	2 Form A	5	200	125	4.0	37.0	108	5.50
RR2ADLX	2 Form A	6	290	125	4.8	32.0	154	5.50
RR2ADLX	2 Form A	12	290	500	9.6	16.0	154	5.50
RR2ADLX	2 Form A	24	290	2000	19.2	8.0	154	6.50

ontacts wired to pins 1–8 only. †25° C maximum ambient temperature. ‡Maximum.
▪Specify type number and coil voltage when ordering.

SOLID STATE HYBRID RELAYS

DC METERING RELAYS

ed for precise monitoring of DC voltages and current, DC metering relays operate at DC and/or 1 mA. Models 11A and 11B are latching types, reset by removing primary power, which is supplied from Model 13, 120 to 8 volt transformer. Models 12A and 3 are On/Off types, operating and releasing according to DC signal with 1% differential. ad contacts are single pole, Form A dry reed switches, rated 10 watts maximum at volts maximum or 500 mA maximum non-inductive.

-D ype	Type	Net Each*	S-D Type	Type	Net Each*
1A	Overvoltage Latching	$18.10	12B	Undervoltage On/Off	$19.80
1B	Undervoltage Latching	19.80	13	Transformer 120 V to 8 V, 50–400 Hz	12.50
2A	Overvoltage On/Off	18.10			

AC NULL SENSING RELAYS

null sensing relays are used in AC bridge networks or with LVDT's, to sense and nitor unbalanced conditions. AC primary power supply and AC signal system must be same source. Phase relation between primary voltage and signal voltage determines unbalance. Relays operate at 120 VAC, 50–400 Hz and are accurate up to 10% ferential between the pull-in and signal voltage. Load contacts are single pole Form A reed switches. **Contact Rating:** Not to exceed 10 watts at maximums of 250 volts 500 mA. **Size:** 1⅞" w. x 1½" d. x 2" h.

S-D Type	Input Imped. Ohms	Min. Signal rms Millivolts	Max. Signal rms Volts	Net Each*
14	200K	500	25	$24.00
15	20K	5	10	35.00

DC SENSITIVE RELAYS

ghly sensitive, low power On/Off relays operate from low level DC signals. Models 16 l S16 have two Form A dry reed load contacts. Contact Rating: Not to exceed 10 watts maximums of 250 volts or 500 mA, non-inductive. Models 20 and 22 have DPDT relay d contacts rated 5 amps at 120 VAC non-inductive. Model 22 relays are mounted on pin octal style plugs. All others have solder terminals. **Size:** Model 16, 1⅜" w. x d. x ¾" h.; Model 20, 1 15/32" w. x 1 11/16" d. x 1 15/32" h.; Model 22, 1 11/16" w. x 1 15/32" d. x 16" h.

S-D Type	Nominal		Max. VDC	Add'l Res. Ohm/Volt	Primary VDC	Net Each*
	VDC	μA DC				
6AA1	+0.7	50	+7	10K	6	$ 8.60
6AA2					12	8.60
6AA3					24	9.20
16AA1	+1.4	1	+35	10K	6	8.80
16AA2					12	8.80
16AA3					24	9.40
0-2	+0.7	1	+35	1K	12	10.90
0-3					24	10.90
2-2	+0.7	1	+35	1K	12	10.90
2-3					24	10.90

TIME DELAY RELAYS

ewdriver-adjustable time delay relays preset the delay on transfer of DPDT relay tacts, after power is applied. Timing remains stable over a voltage range of ±10% m nominal with ±5% repeat accuracy at constant ambient temperature (0°–50° C). ow time of 50 millisec between repetitive, fully timed-out periods or 200 millisec after errupted timing period to ensure repeat accuracy. Relays have DPDT load contacts ed 10 amps, ⅙ hp at 120 VAC and 5 amps; ⅓ hp at 240 VAC. Enclosed in polycarbonate stic enclosures and mounted on octal plugs. **Size:** 1 31/32" w. x 1 31/32" d. x 3 3/32" h.

S-D Type*	Delay, Sec.	Net Each*	S-D Type*	Delay, Sec.	Net Each*
1-002-120AC	0.2–2	$19.80	41-020-24DC	2–20	$19.80
1-002-24AC	0.2–2	19.80	41-200-120AC	20–200	22.00
1-002-24DC	0.2–2	19.80	41-200-24AC	20–200	22.00
1-020-120AC	2–20	19.80	41-200-24DC	20–200	22.00
1-020-24AC	2–20	19.80			

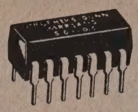
iffix indicates control voltage (e.g., 41-002-**120AC** relay comes with 120 VAC control tage). All AC voltages are 50/60 Hz.

AC POWER SWITCHES

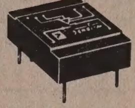
power switches, using triacs with high inrush capabilities, control AC loads of 18 to VAC. Triacs can be fired by external contact closure or DC signals. Control signals are contact type. All switches are enclosed in metal enclosures and mounted on octal gs. **Size:** Model 53, 2 7/32" h. x 1 5/16" dia.; Model 54, 3 13/32" h. x 1 11/16" dia.

S-D Type	Control Signal V	Current Ratings, Amps			Net Each*
		Continuous*	50% Duty	10 msec†	
53-000	Contact	3	5	20	$ 9.90
53-101	10–28 V	3	5	20	11.00
54-000	Contact	10	15	60	15.40
54-101	10–28 V	10	15	60	16.50

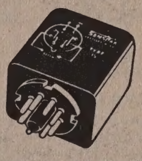
oad energized for 10 minutes or more. †Peak.



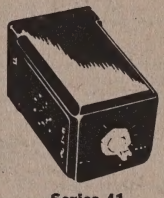
Series MRR-D



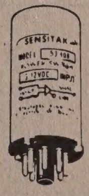
Series 11, 12



Series 14, 15, 16–22



Series 41



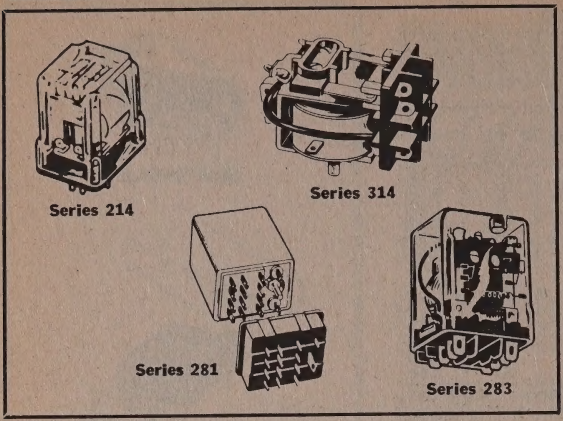
Series 53, 54

★QUANTITY DISCOUNTS

For larger quantity orders, the following discounts apply. Use price shown and multiply with multipliers shown.

For Lots	Discount	Multiplier
25–49	−5%	.95
50–74	−10%	.90
75–99	−20%	.80
100 Up	−30%	.70

S-D Industrial Relays, Sockets



COMPACT 10-AMP OPEN TYPE RELAYS

Compact relays provide reliable 1-, 2- and 3-pole switching of resistive loads to 10 amps in minimum space and minimum cost. Metal frame has non-twist-tab and single mounting stud. Solder tab terminals. **Contact Rating:** 10 amps, 115 VAC (non-inductive). **Size:** 1⅞″ w. x 1⅜″ d. x 1 11/16″ h.

S-D Type	Contacts	Coil Voltages■	Net Each*
214XAX	SPDT	6, 12, 24, 120, or 240 VAC; 6, 12, or 24 VDC	$3·00
214XBX	DPDT		3·30
214XCX	3PDT		3·70
214XAX	SPDT	115 VDC	3·30
214XBX	DPDT	115 VDC	3·60
214XCX	3PDT	115 VDC	4·10

INDUSTRIAL 10-AMP OPEN TYPE RELAYS

Industrial relays with silver cadmium oxide contacts. Solder lug terminals are aligned in molded support with integral insulating barriers. Mount with single 6-32 threaded stud and turn resistant tab. **Contact Rating:** 10 amps, 120 VAC non-inductive (⅙ hp); 5 amps, 240 VAC non-inductive (⅓ hp). **Size:** 1⅞″ w. x 1⅜″ d. x 1 11/16″ h. UL Recognized (File #E-13224).

S-D Type	Contacts	Coil Voltages■	Net Each*
314XAX	SPDT	6, 12, 24, 120, or 240 VAC; 6, 12, 24, or 48 VDC	$3·20
314XBX	DPDT		3·90
314XCX	3PDT		4·40
314XAX	SPDT	115 VDC	3·70
314XBX	DPDT	115 VDC	4·40
314XCX	3PDT	115 VDC	4·70

COMPACT, ENCLOSED PLUG-IN RELAYS

Inexpensive, compact relays for general purpose, moderate lo applications. Available with regular coils or with integral ne lamps wired across the coil to indicate when coil is energize Include dust-tight, flame-resistant, clear plastic covers. **Conta Ratings:** 10 amps at 30 VDC; 10 amps at 115 VAC. **Size:** 1⅜″ w. 1⅜″ d. x 2⅛″ h.

S-D Type	Contacts	No. of Terminals	Coil Voltages■	Net Each
214XAX48P	SPDT	Octal	6, 12, 24, 120, or 240 VAC; 6, 12, 24 VDC	$4.7
214XBX48P	DPDT	Octal		5.3
214XCX48P	3PDT	11		6.3
214XAX48P	SPDT	Octal	115 VDC	5.1
214XBX48P	DPDT	Octal	115 VDC	5.8
214XCX48P	3PDT	11	115 VDC	7.0

WITH NEON LAMP ACROSS COIL

S-D Type	Contacts	No. of Terminals	Coil Voltages■	Net Each
214XAX48PL	SPDT	Octal	120 VAC	$6.2
214XBX48PL	DPDT	Octal	120 VAC	6.8
214XCX48PL	3PDT	11	120 VAC	7.8

ENCLOSED PLUG-IN INDUSTRIAL RELAYS

Compact, plug-in relays for general purpose, industrial type d vices. Include gold plated, silver cadmium oxide contacts flexing arm; dust-tight, clear polycarbonate covers. **Mechanic Life:** 10 million operations. **Contact Ratings:** 10 amps, 120 VA (⅙ hp); 5 amps, 240 VAC (⅓ hp). **Size:** 1½″ w. x 1½″ d. x 2¼″ UL Recognized (File #E13224).

S-D Type	Contacts	No. of Terminals	Coil Voltages■	Net Each
314XAX48P	SPDT	Octal	6, 12, 24, 120, or 240 VAC; 6, 12, 24, 48 VDC	$5.6
314XBX48P	DPDT	Octal		6.0
314XCX48P	3PDT	11		7.8
314XAX48P	SPDT	Octal	115 VDC	6.1
314XBX48P	DPDT	Octal	115 VDC	6.5
314XCX48P	3PDT	11	115 VDC	8.2

WITH NEON LAMP ACROSS COIL

S-D Type	Contacts	No. of Terminals	Coil Voltages■	Net Each
314XAX48PL	SPDT	Octal	120 VAC	$6.6
314XBX48PL	DPDT	Octal	120 VAC	7.0
314XCX48PL	3PDT	11	120 VAC	8.8

SOLDER OR PLUG-IN MINIATURE RELAYS

Miniature 14-terminal relays feature high contact packagi density for applications requiring large banks of closely mount relays. Fully equipped with solder-tab terminals and single moun ing stud for direct wired applications. Performs as a plug-in rel when provided with a socket (listed below). **Contact Rating:** amps at 30 VDC or 115 VAC. **Size:** 1⅛″ w. x ⅞″ d. x 1 9/32″ UL Recognized (File #E-7104).

S-D Type	Contacts	Coil Voltages■	Net Each
281XDX	4PDT	6, 12, or 24 VDC	$4·50
281XDX	4PDT	48 VDC	4·65
281XDX	4PDT	110 VDC	4·80
281XDX	4PDT	6, 12, or 24 VAC	5·20
281XDX	4PDT	115 VAC	5·60

OPEN AND ENCLOSED PLUG-IN RELAYS

Open and enclosed plug-in, 10-amp industrial relays come with rugged, gold-diffused, silver-cadmium oxide contacts. Excellent wiping action permits the use on variety of loads ranging from instrument and logic circuits to the control of heaters, solenoids, small motors, and other relays. Available in one, two, or three-pole contact combinations. Q-C terminals (.187″ flat male), spaced for standard plug-in mounting, and are pierced to accommodate solder wiring. All relays come with AC or DC standard coils with various nominal voltages. **Contact Ratings:** 10 amps resistive, 28 VDC; 10 amps resistive, 120–240 VAC with ⅓ hp motor at 120 VAC, and ½ hp motor at 240 VAC. **Size:** Type 283XCX, 1⅜″ w. x 1¼″ d. x 2″ h.; type 283XBXC, 1½″ w. x 1½″ d. x 2 5/32″ h.; type 283XCXC1, 1½″ w. x 1⅜″ d. x 2 29/32″ h.

CONTINUOUS DUTY COILS
1 and 2 Pole 2 VA, 50/60 Hz

Nominal VAC	Current in mA	Resistance in Ohms
6	335.00	6
12	168.00	21
24	84.00	75
120	17.50	2250
240	8.75	9110

3 Pole 2.7 VA, 50/60 Hz, AC Coils

Nominal Voltage	Current in mA	Resistance in Ohms
6	460	4.2
12	230	18.0
24	115	72.0
120	24	1700.0
240	12	7200.0

1.2 Watts, DC Coils

Nominal Voltage	Current in mA	Resistance in Ohms
6	188.0	32.1
12	100.0	120.0
24	51.0	472.0
48	26.6	1800.0
110–125	10.5–12.5	10000.0

OPEN, WITH TAPPED 6-32 HOLE

S-D Type	Contacts	Coil Voltages■	Net Each*
283XAX	SPDT	6/12/24/120 VAC	$3·50
283XAX	SPDT	240 VAC	3·95
283XAX	SPDT	6/12/24 VDC	3·35
283XAX	SPDT	110 VDC	4·00
283XBX	DPDT	6/12/24/120 VAC	4·40
283XBX	DPDT	240 VAC	4·85
283XBX	DPDT	6/12/24 VDC	3·90
283XBX	DPDT	110 VDC	4·60
283XCX	3PDT	6/12/24/120 VAC	5·00
283XCX	3PDT	240 VAC	5·45
283XCX	3PDT	6/12/24 VDC	4·55
283XCX	3PDT	110 VDC	5·00

ENCLOSED, PLUG-IN TYPE

S-D Type	Contacts	Coil Voltages■	Net Each*
283XAXC	SPDT	6/12/24/120 VAC	$3·80
283XAXC	SPDT	240 VAC	4·25
283XAXC	SPDT	6/12/24 VDC	3·65
283XAXC	SPDT	110 VDC	4·30
283XBXC	DPDT	6/12/24/120 VAC	4·70
283XBXC	DPDT	240 VAC	5·15

ENCLOSED PLUG-IN TYPE (Cont'd)

S-D Type	Contacts	Coil Voltages■	Net Each
283XBXC	DPDT	6/12/24 VDC	$4·20
283XBXC	DPDT	110 VDC	4·90
283XCXC	3PDT	6/12/24/120 VAC	5·30
283XCXC	3PDT	240 VAC	5·75
283XCXC	3PDT	6/12/24 VDC	4·85
283XCXC	3PDT	110 VDC	5·30

ENCLOSED, BRACKET-MOUNTED

S-D Type	Contacts	Coil Voltages■	Net Each
283XAXC1	SPDT	6/12/24/120 VAC	$3·80
283XAXC1	SPDT	240 VAC	4·25
283XAXC1	SPDT	6/12/24 VDC	3·65
283XAXC1	SPDT	110 VDC	4·30
283XBXC1	DPDT	6/12/24/120 VAC	4·70
283XBXC1	DPDT	240 VAC	5·15
283XBXC1	DPDT	6/12/24 VDC	4·20
283XBXC1	DPDT	110 VDC	4·90
283XCXC1	3PDT	6/12/24/120 VAC	5·30
283XCXC1	3PDT	240 VAC	5·75
283XCXC1	3PDT	6/12/24 VDC	4·85
283XCXC1	3PDT	110 VDC	5·30

■Specify type number and coil voltage when ordering.

SOCKETS

S-D Type 32884 Socket—Socket with solder tab terminals for S-D Type 281XDX relays. Size, 1 5/32″ w. x 1″ d. x ⅜″ h. Net Ea. . . . **60c**

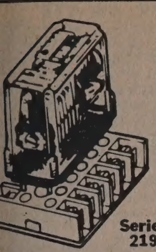
S-D Type 32885 Socket—Socket with PC terminals for S-D Type 281XDX relays. Size, 1 5/32″ w. x 1″ d. x ⅜″ h. Net Each. **60c**

S-D Type 36580 Socket—Socket with .187″ Q-C terminals for S-D Type 283X relays. Size, 1 31/64″ w. x 2″ d. x ⅝″ h. Net Ea. . . . **75c**

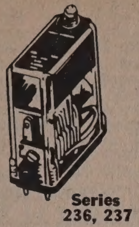
★QUANTITY DISCOUNTS

For Lots	Discount	Multiplier
25–49	−5%	.95
50–74	−10%	.90
75–99	−20%	.80
100 Up	−30%	.70

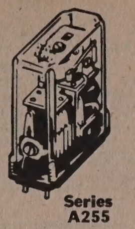
Industrial Relays, Sockets



Series 219



Series 236, 237



Series A255

Series 211

GENERAL PURPOSE RELAYS

d diffused, silver cadmium oxide contacts, normally rated at 10 amps; clear burn-stant plastic covers. **Mechanical Life:** 20 million operations. **Contact Rating:** 10 amps, VAC, resistive. **Coils▪:** 6/12/24/115/230 VAC, 60 Hz, 5 VA; 6/12/24/115–125 C, 1.8 watts. **Size:** 2⅝″ w. x 1 15/32″ d. x 3 13/32″ h. (with pins). UL Recognized.

S-D Type	Contacts	Contacts Fig.	Net Each*
219XBXP	DPDT	A	$16.30
219BBXP	DPDT, 2 NO	B	19.50
219ABAP	DPDT, 1 NO, 1 NC	C	19.50

4 POLE AND 6 POLE GENERAL PURPOSE RELAYS

ne as above, but provide 4PDT or 6PST switching. Includes 14 pins. **Size:** 3 1/16″ w. x 2″ d. x 3 13/32″ h. (with pins).

219DXBP	4PNO, 2PNC	D	$22.10
219FXXP	6PNO	E	22.10
219XDXP	4PDT	F	22.10

OPTIONAL FEATURES FOR GENERAL PURPOSE RELAYS

Order: Add suffix to the type, and add price of option to the item (e.g., S-D Type XBXP**LM** indicates 219XBXP type relay with indicator lamp and manual actuator).

Suffix L Indicator Lamp—Lamp wired across coil indicates when coil is energized. Each **$1.60***

Suffix M Manual Actuator—Manual actuator on cover allows manual operation of y contacts; spring returns contacts to normal. Net Each **$1.60***

Suffix 33 Bifurcated Contacts—Twin contacts of gold diffused fine silver, with quate pressure and overtravel for reliability. Net Each **$5.30***

LATCH RELAYS

ch relays are mechanically latched, electrically reset versions of the 219 type relays. tacts operate from common armature to avoid overlapping. **Mechanical Life:** 10 ion operations. **Contact Rating:** 10 amps, 115 VAC, resistive. **Coils▪:** 6, 12, 24, or 230 VAC at 60 Hz and 5 VA; 6, 12, 24, or 115–125 VDC at 1.8 watts. **Size:** 2⅝″ w. x 2″ d. x 4 9/16″ h. (with pins).

A255XBXP	DPDT	G	$32.10
A255XCXP	3PDT	H	34.70
A255BXBP	2 NO, 2 NC	I	34.70

TIME DELAY RELAYS

d state timing network for type 219 relays. "On Delay" (type 236) network energizes y at preset timing period, after power is applied. "Off Delay" (type 237) network plies power to relay coil for preset period of time, after signal circuit is deenergized. **ay Range:** "On Delay", 0.2–12 sec, 0.2–20 sec, or 2–200 sec; "Off Delay", 0.2–20 sec, –200 sec. **Contact Rating:** 10 amps, 115 VAC, resistive. **Coils▪:** 24 or 115 VAC, 60 24 or 115 VDC. **Size:** 2⅝″ w. x 1 15/32″ d. x 4 9/16″ h. (with pins).

236ABXP	DPDT, 1 NO	J	$75.10
237XBXP	DPDT	K	88.20

SEQUENCE RELAYS

uence relays contain a rugged 8-tooth ratchet operating two contact cams. Contacts nge position on each impulse; hold last position until next impulse. Cam position nges when coil is energized or deenergized. **Contact Rating:** 5 amps, 115 VAC, resis-. **Coils▪:** 6, 12, 24, 115, or 230 VAC at 60 Hz; 6, 12, 24, 115 VDC. **Size:** 2⅝″ w. x 2″ d. x 4 9/16″ h. (with pins).

211XBXP*	DPDT	L	$33.10
211AXAP*	1 NO, 1 NC	M	30.00
211XBXPR†	DPDT	L	33.10
211AXAPR†	1 NO, 1 NC	M	30.00

ntacts transfer when coil is energized. †Contacts transfer when coil is deenergized.

OVER AND UNDER VOLTAGE RELAYS

pe 349 relays contain an adjustable solid state voltage sensing device. Potentiometer ft extends through the cover for setting pick-up voltage. **Contact Rating:** 10 amps, VAC resistive. **Coil▪:** 85–135 VAC adjustable pull-in range. **Size:** 2⅝″ w. x 1 15/32″ d. x ″ h. (with pins).

349BBXP*	DPDT, 2 NO	N	$ 95.50
349ABXP†	DPDT, 1 NO	P	95.50
349XBXP†	DPDT	R	108.00

ith 3 ±1 volt fixed differential. †With 2–14 volts adjustable differential.

ALARMS

lity designed units combine the functions of two intertwined relays. Alarms operate n sustained or momentary contacts. Relay operates both alarm and light. Signal may urned off manually or automatically, when alarm initiating condition clears. **Contact ing:** 10 amps, 115 VAC resistive. **Coil▪:** 115 VAC, 60 Hz. **Size:** 2⅝″ w. x 1 15/32″ d. x 2″ h. (with pins).

Type RSX1440Z Alarm—Initiated by sustained, momentary, or intermittent closure NO trouble contacts. Net Each **$26.40***

Type RSX1440S Alarm—Initiated by NC trouble contacts. Net Each . . . **26.40***

SOCKETS

Type 27390 Sockets—12-terminal socket accepts all relays shown on this page except pin versions of series 219. Front connect screws with captive clamp plates hold up to #14 wires. Mounted to panel with two 6-32 screws. Size, 2 21/32″ w. x 2 3/16″ d. x 27/32″ h. Each **$2.50**

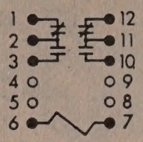
Type 33377 Sockets—Same as above, but with 14 pins. Used only for series 219, erminal relays. Size, 3 3/32″ w. x 2 3/16″ d. x 27/32″ h. Net Each **$2.80**

▪Specify type number and coil voltage when ordering.

★QUANTITY DISCOUNTS

r Lots	Discount	For Lots	Discount	For Lots	Discount	For Lots	Discount
5–49	–5%	50–74	–10%	75–99	–20%	100 Up	–30%

CONTACTS DIAGRAMS



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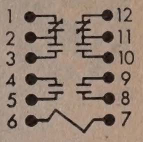

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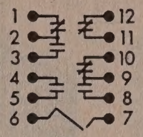

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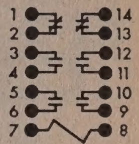

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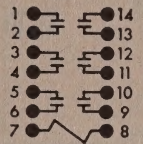

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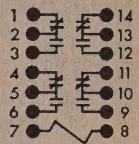

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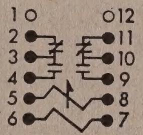

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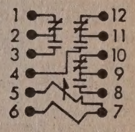

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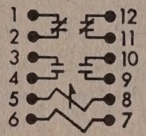

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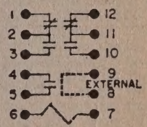

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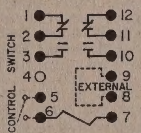

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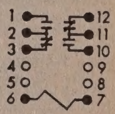

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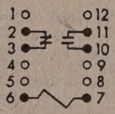

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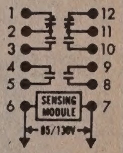

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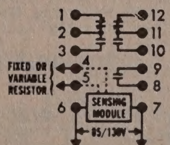

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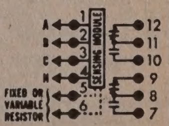
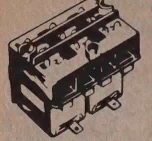


R

MOTOR CONTROLS AND COMMERCIAL RELAYS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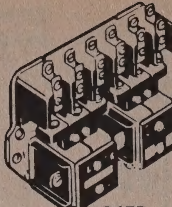
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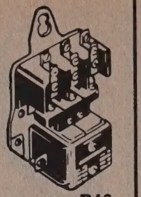
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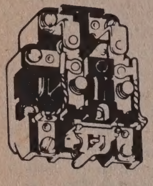
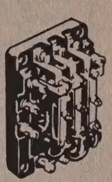

Series 425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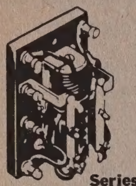
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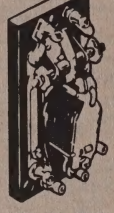

Series B11

MOTOR CONTROLS

COMPACT REVERSING MOTOR CONTROLS

Compact reversing contactors contain two sets of 3-pole contactors on a common frame, mechanically interlocked to prevent simultaneous closure. Simplified clapper-type armature with 3-point suspension results in an unusually quiet and dependable unit. Available with one or two SPDT snap-action type auxiliary contacts on each side, for electrical interlock and/or lock-up (maintaining contact). Tab terminals (0.250″) fit standard quick-connect receptacles. **Load Contacts:** 3 DBNO on each of two interlocked armatures. **Contact Rating:** 15 amps at 110 VAC; 15 amps at 120 VAC; 10 amps at 240 VAC; or 5 amps at 480 VAC. **Motor Horse Power:** 1 hp at 120 or 240 VAC, 1, 2, or 3 phase; 1 hp at 480 VAC, 3 phase. **Coils■:** 12, 24, 120, or 230 VAC at 60 Hz (18 VA); 12, 24, 48, or 110 VDC at 3 watts. Include silver cadmium oxide contacts molded in arc chutes for overload safety factors. **Housing:** Code 4 (see next page). UL Recognized (File #E-13224).

S-D Type A275KXX Reversing Contactor—Mechanical life of 10 million cycles. Size, 2⅞″ w. x 2³⁄₁₆″ d. x 3⁷⁄₃₂″ h. Net. **$19.50•**

S-D Type A275KXX90 Reversing Contactor—With SPDT on each armature and 10 million cycles of mechanical life. Net . **$22.50•**

S-D Type A275KXX91 Reversing Contactor—With DPDT auxiliary contact on each armature and 10 million cycles of mechanical life. Size, 2⅞″ w. x 2¾″ d. x 3⅝″ h. Net Each . . . . **$23.50•**

STANDARD REVERSING MOTOR CONTROLS

Designed for continuous service, rugged 15-amp contactors are used for control of overhead doors, elevators, hoists, machine tools, and similar devices. Fully equipped with mechanically interlocked solenoids on a common frame, each operating 3 double-break normally open contacts. **Load Contacts:** 3 DBNO on each of two interlocked solenoids. **Contact Rating:** 15 amps at 110, 115, 220, 230, 440, or 550 VAC; 15 amps at 115 VDC; 2 amps at 230 VDC. **Coils■:** 12, 24, 115, 230, 440, or 550 VAC at 60 Hz (22 VA); 12, 24, 48, 115, or 230 VDC at 10 watts. **Motor Horse Power:** 1 hp at 120 VAC, 1 phase; 1½ hp at 230 VAC, 1 phase; 2 hp at 110 VAC, 2 or 3 phase; 3 hp at 220 to 550 VAC, 3 phase. **Housing:** Code 9 (see next page). UL Listed (File #E-13224).

S-D Type B175KXX Standard Reversing Contactor—
Net Each . . . . **$31.00•**

S-D Type B175KXX90 Standard Reversing Contactor—With SPDT auxiliary contact on each solenoid. Size, 5¼″ w. x 3″ d. x 4⁷⁄₁₆″ h. (overall). Net Each . . . . **$36.30•**

NON-REVERSING CONTACTORS

Non-reversing contactors include fine silver contacts in arc chutes for overload safety precautions. Available in 3-pole or 4-pole versions. Each contact pair is individually spring mounted for accurate alignment. **Contact Rating:** 15 amps at 110/115/220/230/440/550 VAC; 15 amps at 115 VDC; or 2 amps at 230 VDC. **Motor Horse Power:** 1 hp at 120 VAC, 1 phase; 1½ hp at 230 VAC, 1 phase; 2 hp at 110 VAC, 2 or 3 phase; 3 hp at 220 to 550 VAC, 3 phase. **Coils■:** 12, 24, 115, 230, 440, or 550 VAC at 60 Hz (22 VA); 12, 24, 48, 115, or 230 VDC at 10 watts. **Housing:** Code 6 (see next page). UL Listed (File #E-13224).

S-D Type B48KXX Non-Reversing Contactor—With 3 DBNO load contacts. Size, 2¹³⁄₁₆″ w. x 2½″ d. x 5⅛″ h. (overall).
Net Each . . . . **$17.90•**

S-D Type B48LXX Non-Reversing Contactor—Same as above, but with 4 DBNO load contacts. Size, 3⅝″ w. x 2½″ d. x 4¹⁷⁄₃₂″ h. (overall). Net Each . . . . **$20.50•**

•QUANTITY DISCOUNTS

For Lots	Discount	For Lots	Discount
50–99	–10%	100 Up	–20%

GENERAL PURPOSE POWER RELAYS

Heavy duty, low cost power relays with excellent wiping acti contacts are designed for over 100,000 operations at rated loa Mechanical life exceeds 10 million operations. High impact mold phenolics are used for bases and moving contacts insulation. "H Armature" types have movable contacts electrically common to t armature and magnetic structures. **Hot Armature Type Conta Rating:** 30 amps at 28 VDC or 120–240 VAC resistive. Insulat armature types have movable contacts electrically isolated fro armature and magnetic structures. **Insulated Armature Ty Contact Rating:** 30 amps, 28 VDC, or 120–240 VAC resistiv 10 amps at 600 VAC; 125 VDC for types with pm blowou UL (File #E13224) and CSA (File #LR9494) Listed.

■STANDARD COILS

AC COILS 9.8 VA, 50/60 Hz

Nominal Voltage	Current, mA	Resistance, Ohms
6	1600	0.86
12	820	3.20
24	410	12.00
120	85	290.00
240	43	1200.00
480	22	4500.00

DC COILS 2.0 WATTS

Nominal Voltage	Current, mA	Resistance, Ohms
6	333	18
12	169	71
24	84	288
110–125	18–21	6050

HOT ARMATURE TYPE

S-D Type	Contacts	Base Size	Coils■	Ne Ea.
425XAX	SPDT	2½″ x 2½″	6/12/24/120 VAC	$4.6
425XAX	SPDT	2½″ x 2½″	208/240 VAC	5.0
425XAX	SPDT	2½″ x 2½″	6/12/24 VDC	4.6
425XAX	SPDT	2½″ x 2½″	110–125 VDC	5.2
425HXX	SPST-NO†	2½″ x 2½″	6/12/24/120 VAC	4.6
425HXX	SPST-NO†	2½″ x 2½″	208/240 VAC	5.0
425HXX	SPST-NO†	2½″ x 2½″	6/12/24 VDC	4.6
425HXX	SPST-NO†	2½″ x 2½″	110–125 VDC	5.2

INSULATED ARMATURE TYPE—600 V

S-D Type	Contacts	Base Size	Coils■	Ne Ea.
425HXX2	SPST-NO†	2½″ x 2½″	6/12/24/120 VAC	$5.2
425HXX2	SPST-NO†	2½″ x 2½″	208/240 VAC	5.7
425HXX2	SPST-NO†	2½″ x 2½″	6/12/24 VDC	5.2
425HXX2	SPST-NO†	2½″ x 2½″	110–125 VDC	5.9
425BXX	DPST-NO	2½″ x 2½″	6/12/24/120 VAC	5.2
425BXX	DPST-NO	2½″ x 2½″	208/240 VAC	5.7
425BXX	DPST-NO	2½″ x 2½″	6/12/24 VDC	5.2
425BXX	DPST-NO	2½″ x 2½″	110–125 VDC	5.9
425XBX	DPDT	2½″ x 3½″	6/12/24/120 VAC	6.9
425XBX	DPDT	2½″ x 3½″	208/240 VAC	7.5
425XBX	DPDT	2½″ x 3½″	480 VAC	8.4
425XBX	DPDT	2½″ x 3½″	6/12/24 VDC	6.9
425XBX	DPDT	2½″ x 3½″	110–125 VDC	7.5
425XBX90*	DPDT	2½″ x 3½″	24/120 VAC	8.9
425XBX90*	DPDT	2½″ x 3½″	208/240 VAC	9.5

*Has SPDT auxiliary switch extending ⅞″ beyond base; 10 am 250 VAC. †DM action.

6-AMP GENERAL PURPOSE RELAYS

General purpose type relays are conventional single-coil rela Contacts open, close, or transfer when coil is energized; return normal when coil is deenergized. All UL Listed (File #E710 **Coils■:** 6, 12, 24, 115, 230 VAC, 60 Hz; 6, 12, 24, 115 VDC. **Co tact Rating:** 6 amps at 24 or 115 VAC; 3 amps at 230 VAC; 6 am at 24 VDC; 0.5 amp at 115 VDC; all non-inductive type.

S-D Type	Contacts	Base Size	Housing Code*	Net Each
B1HXX	SP NO DB	1⅞″ x 2¾″	1	$12.7
B1XAX	SPDT	1⅞″ x 2¾″	1	14.3
B1XBX	DPDT	1⅞″ x 2¾″	1	17.6
A1CXX	3P NO	2½″ x 3½″	2	21.5
A1XCX	3PDT	2½″ x 3½″	2	24.2

6-AMP LATCHING RELAYS

Dependable mechanical latching with electrical reset. Simple, op construction for long, dependable operation. **Coils■:** 6 VA at 12, 24, 115, 230 VAC, 60 Hz; 3 watts at 6, 12, 24, 115 VD **Contact Rating:** 6 amps at 24 or 115 VAC; 3 amps at 230 VA 6 amps at 24 VDC; 0.5 amp at 115 VDC; all non-inductive ty

S-D Type	Contacts	Base Size	Housing Code*	Net Each
51BXX46	DP NO	2⅜″ x 3¼″	3	$25.9
51AXA46	1 NO, 1 NC	2⅜″ x 3¼″	4	25.9
51XBX46	DPDT	2⅜″ x 5¹⁄₁₆″	4	42.9
51BXB46	2 NO, 2 NC	2⅜″ x 5¹⁄₁₆″	4	42.9

*See next page.

6-AMP SEQUENCE RELAYS

Operate in predetermined sequence; cams are stepped from o position to next by impulse to coil. Fine-silver contacts; int mittent duty coils. **Coils■:** Specify 24, 115, or 230 VAC, 60 (6 VA); 24, or 115 VDC (6 watts). **Contact Rating:** 6 amps 24 or 115 VAC; 3 amps at 230 VAC; 6 amps at 24 VDC; 0.5 a at 115 VDC; all non-inductive type.

S-D Type	Contacts	Base Size	Housing Code‡	Net Each
B11BXX*	DPST	2″ x 3¹³⁄₁₆″	2	$34.1
B11AXA†	1 NO, 1 NC	2″ x 3¹³⁄₁₆″	2	34.1

*Contacts open and close together. †Contacts alternate. ‡S next page.

■**Specify type number and coil voltage when ordering.**

SEE FOLLOWING PAGE FOR HOUSING CODE EXPLANATION AND LISTING

COMMERCIAL RELAYS, TIMERS AND HOUSINGS

POWER RELAYS

wer relays available in general use, latch, and sequence types. Heavy duty contacts nsfer when coil is energized. Ideal for controlling small motors, heaters, solenoids, dible and visual signals, or for transferring power from main to auxiliary supply or load.

GENERAL PURPOSE 30-AMP TYPE RELAYS

igged, high current relays on heavy insulated bases. Contacts are ⅜″ diameter fine ver buttons. Movable contact arms are double-sprung, rigid assemblies individually justed for wipe and pressure. 600-volt electrical spacing. **Coil■:** 24, 115, 230, or 440 AC, 60 Hz (15 VA); 24, 115 or 230 VDC (7 watts). **Contact Ratings:** 30 amps at 24, 5, or 230 VAC; 30 amps at 24 VDC; 3 amps at 115 VDC; 0.75 amp at 230 VDC; all n-inductive type.

Type	Contacts	Base Size	Housing Code	Net Each•
A8HXX*†	SP NO DB	3″ x 4¼″	4	**$22.60**
8BXX*	DP NO	3″ x 4¼″	4	**29.20**
8AXA*	1 NO, 1 NC	3″ x 4¼″	4	**29.20**
A8CXX	3 NO	3″ x 4¼″	4	**33.00**
8DXX	4 NO	4″ x 5″	4	**37.40**
84BXB	2 NO, 2 NC	3″ x 6¼″	5	**40.70**
84XBX	DPDT	3″ x 6¼″	5	**37.40**

L Listed (File #E-7104). †Has SP double-break contacts rated at 6 amps, 115 VDC; mps, 230 VDC; and 30 amps, 230 VAC.

30-AMP LATCHING RELAYS

tching types are two-coil relays that memorize the last impulse received. Pulse to the ver coil latches contacts into operated position permanently, until released by a pulse the upper coil. Coils operate on a single 1/20-second or longer pulse; can be used for ntinuous duty. Electrical spacing, 600 volts. **Coil■:** Specify 24, 115, 230, or 440 VAC, Hz (15 VA); 24, 115, or 230 VDC (7 watts). **Contact Ratings:** 30 amps at 24, 115, or 230 AC; 30 amps at 24 VDC; 3 amps at 115 VDC; 0.75 amp at 230 VDC; all non-inductive.

A5BXX46	DP NO	3¼″ x 4½″	4	**$34.10**
A5AXA46	1 NO, 1 NC	3¼″ x 4½″	4	**34.10**
A5BXB46	2 NO, 2 NC	4″ x 7″	8	**46.20**
A5XBX46	DPDT	4″ x 7″	8	**42.90**

20-AMP SEQUENCE RELAYS

quence type relays have single coil operating a ratchet wheel. Control cams step from e position to the next on each impulse. Relay operates on a 1/20-second pulse. Coils are momentary or intermittent duty only. **Coil■:** Specify 24, 115, 230, or 440 VAC, 60 Hz 3 VA); 24, 115, or 230 VDC (14 watts). **Contact Ratings:** 20 amps at 24 or 115 VAC; amps at 230 VAC; 20 amps at 24 VDC; 1 amp at 115 VDC; 0.25 amp at 230 VDC; non-inductive type.

S-D Type	Contacts	Base Size	Housing Code	Net Each•
C85BXX	DPST*	3″ x 5″	6	**$53.90**
C85AXA	1 NO, 1 NC†	3″ x 5″	6	**53.90**

ontacts open and close together. †Contacts alternate.

SENSITIVE RELAYS

ngle pole-double throw relays operate on very low current to protect delicate instrument ntacts or conserve power. Special hinge construction gives long, trouble-free life. ficient magnetic circuit provides increased contact pressure with minimum coil current. **fe:** Over 1 million operations. **Housing:** Code 1. **Contact Ratings:** 2 amps at 24 or 115 AC; 1 amp at 230 VAC; 2 amps at 24 VDC; 0.25 amp at 115 VDC; all non-inductive pe. **Base Size:** 2½″ x 2⅜″.

S-D Type	Coil Data			Net Each•
	Voltage■	mA	Ohms	
A112XAX	6 VAC (60 Hz)	31.5	190	**$18.20**
A112XAX	12 VAC (60 Hz)	19.0	630	**18.20**
A112XAX	24 VAC (60 Hz)	9.7	3000	**18.20**
A112XAX	115 VAC (60 Hz)	2.0	53000	**18.20**
A112XAX	8 VDC	1.6	5050	**16.80**
A112XAX	11.7 VDC	1.0	11700	**21.20**

■Specify type number and coil voltage when ordering.

TIMERS

ROUND-AND-ROUND REPEATING

as 1 minute cycle; 50/50 split adjustable cam operates SPDT contacts. Operates on 115 AC, 60 Hz. **Housing:** Code 4. **Contact Ratings:** 10 amps at 115 VAC (½ hp motor); mps at 230 VAC; all non-inductive type load. **Size:** 2⅛″ w. x 2¼″ d. x 3 11/16″ h. overall.

D Type APSY1 Round-and-Round Repeating Motor—Net Each.......... **$34.10•**

RECYCLING

djustable "On" time delay from 5 to 45 seconds. SPDT contacts transfer at preset time d hold in "operated" position while motor is energized. Cam spring-returned to starting sition when deenergized. **Housing:** Code 2. **Contact Ratings:** 10 amps at 115/230 VAC 2 hp motor); 10 amps at 12 VDC; 1.5 amps at 24 VDC; 0.2 amp at 125 VDC; 0.1 amp at 0 VDC; all non-inductive type loading. **Size:** 2¼″ w. x 1 15/16″ d. x 2 3/16″ h. overall.

D Type PSAP4 Recycling Motor Timer—Operates on 115 VAC, 60 Hz. Net. . **$30.80•**

D Type PSAP2 Recycling Motor Timer—Operates on 230 VAC, 60 Hz. Net. . **30.80•**

RELAY HOUSING

ode designations in the foregoing listings indicate housing types available for the various lays as per the following table. Code No. 1, for instance, indicates that either an H6 sheet etal, an H4 weatherproof, or an H9 explosion proof housing can be supplied. Specify closure by type number when ordering. All sheet metal housings have gray crackle finish.

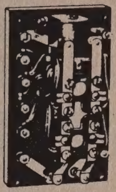
OVERALL DIMENSIONS

Type	Width	Height	Depth	Type	Width	Height	Depth
H2	6⅞″	8 5/16″	4⅛″	**H11**	8⅞″	10⅜″	4⅛″
H3	6 3/16″	7⅞″	3¾″	**H12**	10⅞″	10⅜″	4⅛″
H4	3″	5 5/16″	3⅛″	**H21**	8″	7″	5 9/16″
H6	6⅜″	6⅝″	3⅝″	**H76**	4⅝″	4⅝″	2⅝″
H9	4⅛″	4⅛″	3 3/16″	**W6**	6⅛″	9½″	4¼″

CODE AND PRICING

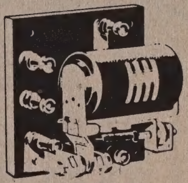
ode	Sheet Metal		Weatherproof		Explosion Proof	
	Type	Net Each	Type	Net Each	Type	Net Each
1	**H6**	**$11.00**	**H4**	**$12.10**	**H9**	**$ 23.70**
2	**H6**	**11.00**	**W6**	**44.60**	**H21**	**106.70**
3	**H3**	**11.00**	**W6**	**44.60**	**H76**	**31.90**
4	**H3**	**11.00**	**W6**	**44.60**	**H21**	**106.70**
5	**H2**	**14.30**	**W6**	**44.60**	....	....
6	**H3**	**11.00**	**W6**	**44.60**	....	....
7	**H6**	**11.00**	**W6**	**44.60**	**H9**	**23.70**
8	**H11**	**20.40**	....	....	....	....
9	**H12**	**22.00**	....	....	....	....

Series 8, 84

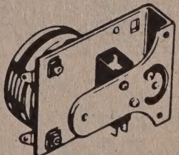


Series A5

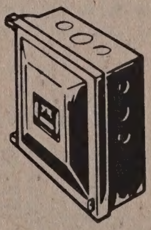
Series C85



A112XAX



PSAP4



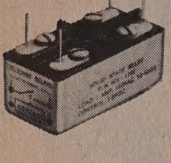
Housings

•QUANTITY DISCOUNTS

For larger quantity orders, the following discounts apply. Use price shown, and multiply with multipliers shown.

For Lots	Discount	Multiplier
50–99	−10%	.90
100 Up	−20%	.80

SERIES 601-1400 OPTICALLY ISOLATED SOLID STATE AC RELAYS

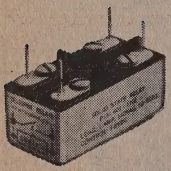


SPST solid state AC relays featuring optical isolation and synchronous/zero voltage switching to virtually eliminate RFI for any type of load, resistive or reactive. Available in 5 or 10 amp steady state current ratings, for 120 or 240 volt loads. Ultra-sensitive 3–32 VDC control input is TTL compatible. The versatile "adaptive" package design of Series 601-1400 provides either screw or quick disconnect terminals for chassis or panel mounting, or solder pins for direct PC board applications. Compact size (1″ x 2″ x 0.9″) makes it the smallest 10 amp AC solid state relay available.

Teledyne No.*	Output Rating		Net Each, Lots of			
	VAC	Amps	1-24	25-49	50-99	100-249
601-1401	140	5	$15.50	$14.00	$12.60	$11.30
601-1402	140	10	19.00	17.10	15.40	13.90
601-1403	250	5	16.50	14.90	13.40	12.10
601-1404	250	10	20.00	18.00	16.20	14.60

*Supplied with screw terminals. Add suffix **P** for printed circuit mounting pins; add suffix **Q** for quick disconnect terminals.

SERIES 601-1000 SOLID STATE AC RELAYS



Lower cost version of the Series 601-1400 above. Asynchronous turn-on/zero current turn-off. Features adaptive package design, providing choice of either screw or quick disconnect terminals for chassis mounting or solder pins for PC board mounting. Available in 1, 3, 5, 7 or 10 amp ratings for 120 or 240 volt loads.

140 VAC OUTPUT

Teledyne No.*	Input (Control) Voltage Range	Output Cur., Amps	Net Each, Lots of			
			1-24	25-49	50-99	100-249
601-1001	3–10 VDC	1	$14.00	$12.20	$11.20	$ 9.80
601-1002		3	15.50	13.50	12.40	10.85
601-1003		5	17.00	15.30	13.60	11.90
601-1004		7	18.50	16.60	14.80	12.95
601-1005		10	20.50	18.45	16.40	14.35
601-1011	6–32 VDC or 15–45 VAC	1	14.00	12.20	11.20	9.80
601-1012		3	15.50	13.50	12.40	10.85
601-1013		5	17.00	15.30	13.60	11.90
601-1014		7	18.50	16.60	14.80	12.95
601-1015		10	20.50	18.45	16.40	14.35

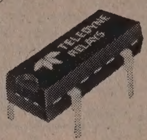
*Supplied with screw terminals. Add suffix **P** for printed circuit mounting pins only; add suffix **Q** for quick disconnect terminals.

250 VAC OUTPUT

Teledyne No.*	Input (Control) Voltage Range	Output Cur., Amps	Net Each, Lots of			
			1-24	25-49	50-99	100-249
601-1006	3–10 VDC	1	$14.75	$13.30	$11.80	$10.30
601-1007		3	16.25	14.60	13.00	11.40
601-1008		5	17.75	16.00	14.20	12.40
601-1009		7	19.25	17.30	15.40	13.50
601-1010		10	21.25	19.15	17.05	14.90
601-1016	6–32 VDC or 15–45 VAC	1	14.75	13.30	11.80	10.30
601-1017		3	16.25	14.60	13.00	11.40
601-1018		5	17.75	16.00	14.20	12.40
601-1019		7	19.25	17.30	15.40	13.50
601-1020		10	21.25	19.15	17.05	14.90

*Supplied with screw terminals. Add suffix **P** for printed circuit mounting pins only; add suffix **Q** for quick disconnect terminals.

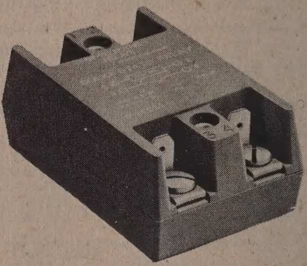
SERENDIP® SPST SOLID STATE DIP RELAYS



Completely solid state SPST relay in dual inline package. Replacement for DIP reed relays, etc. No moving parts. Input drive compatible with 5 volt logic. Features fast response time (up to 100,000 operations per second for Model 640-1). No bounce; flip-flop IC's can be driven directly. No inductive coil kick-back; therefore, suppression diodes are not required. Total isolation (10^{11} ohm min.) between input and output. No derating required for lamp loads. Standard low profile 14-pin dual inline TO-116 package; two input and two output terminals.

Teledyne No.	Output Current	Output Voltage	Net Each, Lots of			
			1-24	25-49	50-99	100-249
640-1	±100 mA	±50 VAC/DC	$ 9.90	$ 8.90	$ 7.90	$6.9
641-1	1.0 amp	140 VAC rms	13.25	11.90	10.60	9.2
641-2	1.0 amp	280 VAC rms	13.95	12.70	11.25	9.8
643-1	400 mADC	60 VDC	9.90	8.90	7.90	6.9
643-2	100 mADC	250 VDC	12.60	11.30	10.05	8.7
644-1	±5 mA	±5 V (low off-set V)	13.95	12.50	11.20	10.1

SERIES 611 OPTICALLY ISOLATED 25 AMP SOLID STATE AC RELAYS



SPST solid state AC relay features optical isolation and synchronous/zero voltage switching to virtually eliminate RFI for any type of load, resistive or reactive. Load rating, 25 amps, 140 or 250 VAC. Ultra-sensitive 3-32 VDC control input is TTL compatible. Electrical connections are combination .250″ quick disconnect and screw terminals.

Teledyne No.	Output Voltage	Net Each, Lots of			
		1-24	25-49	50-99	100-249
611-1	140 VAC	**Prices on Request**			
611-2	250 VAC				

MINI-T SUBMINIATURE GENERAL PURPOSE RELAY

Small industrial/commercial heavy duty power relay (5 amp, 120 volt). Available with AC or DC coils for 6, 12, 24, 48 and 120 volt operation. DPDT contact arrangement. **Contact Ratings:** Low level to 2 amps (Type Y fine silver contact material); or 1.0 to 5.0 amps (Type G silver alloy contact material). Tight fitting transparent plastic dust cover protects against harsh industrial environments. **Alternate Mounting Configurations:** Solder terminals on .200″ grid for direct PC board mounting; or plug-in socket terminals. 8-pin mating socket and retaining hardware available as accessories. **Size** .690″ x .690″ x .875″ high. Weight, 0.5 oz. max.

Teledyne Type	Net Each, Lots of				
	1-9	10-24	25-49	50-99	100-499
Mini-T Relay*	$7.70	$6.90	$6.55	$5.77	$5.40
TS-1 Chassis Socket†	.80	.75	.70	.55	.51
TS-2 PCB Socket†	.80	.75	.70	.55	.51

*For 110 VDC coil, add **$1.00** to prices shown. †Includes mounting hardware.

TELEDYNE RELAYS

SERIES 400 MILITARY TO-5 RELAYS

Continuous duty DC relays in all welded, hermetically sealed TO-5 transistor enclosures. Excellent for high isolation and RF switching. Capable of switching 1 amp 28 VDC resistive loads. Designed to withstand high shock and vibration. Contacts are gold plated for dry circuit requirements. **Insulation Resistance:** 10,000 megohms min. between mutually insulated terminals. **Contact Resistance:** Before life, .1 ohm max.; after life, .2 ohm x. **Series D** have internal diodes for arc suppression. **Series DD** ve internal diodes for arc suppression and polarity reversal protion. **Series T,** transistor driven with diode coil suppression· models except Series T are qualified to MIL-R-5757F and IL-R-39016B. Series T designed to meet MIL-R-28776.

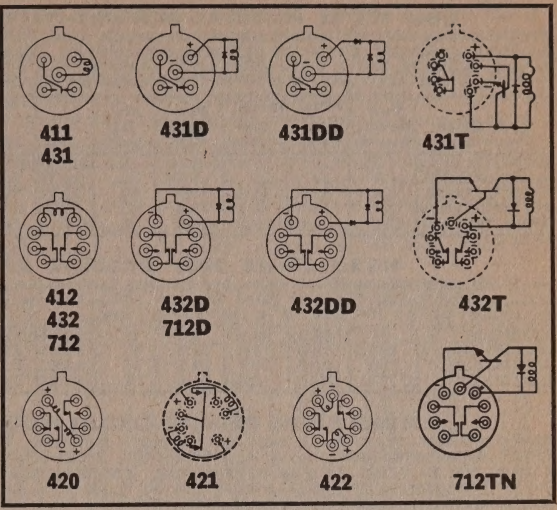
eledyne No.	Con-tacts	Coil		Net Each, Lots of			
		Nom. VDC	DC Ohms	1-24	25-49	50-99	100-249
11-5	SPDT	5	63	$20.60	$18.55	$16.50	$14.40
11-6	SPDT	6	125	20.60	18.55	16.50	14.40
11-9	SPDT	9	280	20.60	18.55	16.50	14.40
11-12	SPDT	12	500	20.60	18.55	16.50	14.40
11-18	SPDT	18	1130	20.60	18.55	16.50	14.40
11-26	SPDT	26.5	2000	20.60	18.55	16.50	14.40
12-5	DPDT	5	50	27.20	24.50	21.80	19.05
12-6	DPDT	6	98	27.20	24.50	21.80	19.05
12-9	DPDT	9	220	27.20	24.50	21.80	19.05
12-12	DPDT	12	390	27.20	24.50	21.80	19.05
12-18	DPDT	18	880	27.20	24.50	21.80	19.05
12-26	DPDT	26.5	1560	27.20	24.50	21.80	19.05

agnetic latching relay with bi-stable contacts.

eledyne No.	Contacts	Coil		Net Each, Lots of 1-99
		Nom. VDC	DC Ohms	
420-5	DPDT	5	61	$35.40
420-6	DPDT	6	120	35.40
420-9	DPDT	9	280	35.40
420-12	DPDT	12	500	35.40
420-18	DPDT	18	1130	35.40
420-26	DPDT	26.5	2000	35.40
421-5	SPDT	5	61	28.70
421-6	SPDT	6	120	28.70
421-9	SPDT	9	280	28.70
421-12	SPDT	12	500	28.70
421-18	SPDT	18	1130	28.70
421-26	SPDT	26.5	2000	28.70
422-5	DPDT	5	61	39.40
422-6	DPDT	6	120	39.40
422-9	DPDT	9	280	39.40
422-12	DPDT	12	500	39.40
422-18	DPDT	18	1130	39.40
422-26	DPDT	26.5	2000	39.40

nsitive non-latching relays.

eledyne No.	Con-tacts	Coil		Net Each, Lots of		
		Nom. VDC	DC Ohms	1-24	25-49	50-99
1T-5	SPDT	5	125	$29.60	$27.55	$25.50
1T-6	SPDT	6	255	29.60	27.55	25.50
1T-9	SPDT	9	630	29.60	27.55	25.50
1T-12	SPDT	12	1025	29.60	27.55	25.50
1T-18	SPDT	18	2300	29.60	27.55	25.50
1T-26	SPDT	26.5	4000	29.60	27.55	25.50
1DD-100	SPDT	5	100	28.60	26.55	24.50
1-125	SPDT	5	125	23.60	21.55	19.50
1D-125	SPDT	5	125	27.60	25.55	23.50
1DD-200	SPDT	6	200	28.60	26.55	24.50
1-255	SPDT	6	255	23.60	21.55	19.50
1D-255	SPDT	6	255	27.60	25.55	23.50
1-630	SPDT	9	630	23.60	21.55	19.50
1-1.0K	SPDT	12	1025	23.60	21.55	19.50
1-2.3K	SPDT	18	2300	23.60	21.55	19.50
1-4.0K	SPDT	26.5	4000	23.60	21.55	19.50
1-6.5K	SPDT	32	6500	25.60	23.55	21.50
1-11K	SPDT	40	11,000	26.70	24.65	22.60
2T-5	DPDT	5	100	36.20	33.50	30.80
2T-6	DPDT	6	200	36.20	33.50	30.80
2T-9	DPDT	9	400	36.20	33.50	30.80
2T-12	DPDT	12	850	36.20	33.50	30.80
2T-18	DPDT	18	1600	36.20	33.50	30.80
2T-26	DPDT	26.5	3300	36.20	33.50	30.80
2DD-64	DPDT	5	64	35.20	32.50	29.80
2-100	DPDT	5	100	30.20	27.50	24.80
2D-100	DPDT	5	100	34.20	31.50	28.80
2DD-125	DPDT	6	125	35.20	32.50	29.80
2-200	DPDT	6	200	30.20	27.50	24.80
2D-200	DPDT	6	200	34.20	31.50	28.80
2-400	DPDT	9	400	30.20	27.50	24.80
2-850	DPDT	12	850	30.20	27.50	24.80
2-1.6K	DPDT	18	1600	30.20	27.50	24.80
2-3.3K	DPDT	26.5	3300	30.20	27.50	24.80
2-6.5K	DPDT	36	6500	32.20	29.50	26.80
2-11K	DPDT	48	11,000	33.30	30.60	27.90



SERIES 712/732
COMMERCIAL/INDUSTRIAL TO-5 RELAYS

Continuous-duty DC relays in all-welded, hermetically sealed TO-5 enclosures. Excellent for high isolation and RF switching. Contacts are suitable for dry circuits to 1 amp. **Series D** have internal diode for arc suppression; **Series TN** are transistor-driven with diode coil suppression. **Insulation Resistance:** 1000 megs min. between mutually insulated terminals. **Temperature Range:** −55° C to +71° C. **Operations:** 10 million min. mechanical; 1 million at .5 A; 100,000 at 1 A, 28 VDC resistive.

Teledyne No.	Con-tacts	Coil Data		Net Each, Lots of			
		VDC	Ohms	1-49	50-99	100-249	250-499
712-5	DPDT	5	50	$ 9.90	$ 9.40	$ 8.50	$ 8.05
712-6	DPDT	6	100	9.90	9.40	8.50	8.05
712-9	DPDT	9	220	9.90	9.40	8.50	8.05
712-12	DPDT	12	390	9.90	9.40	8.50	8.05
712-18	DPDT	18	880	9.90	9.40	8.50	8.05
712-26	DPDT	26.5	1560	9.90	9.40	8.50	8.05
712D-5	DPDT	5	50	11.15	10.65	9.75	9.30
712D-6	DPDT	6	100	11.15	10.65	9.75	9.30
712D-9	DPDT	9	220	11.15	10.65	9.75	9.30
712D-12	DPDT	12	390	11.15	10.65	9.75	9.30
712D-18	DPDT	18	880	11.15	10.65	9.75	9.30
712D-26	DPDT	26.5	1560	11.15	10.65	9.75	9.30
712TN-5	DPDT	5	50	13.90	13.40	12.50	12.05
712TN-6	DPDT	6	100	13.90	13.40	12.50	12.05
712TN-9	DPDT	9	220	13.90	13.40	12.50	12.05
712TN-12	DPDT	12	390	13.90	13.40	12.50	12.05
712TN-18	DPDT	18	880	13.90	13.40	12.50	12.05
712TN-26	DPDT	26.5	1560	13.90	13.40	12.50	12.05

SENSITIVE TYPE SERIES 732

Teledyne No.	Con-tacts	Nominal Coil Data		Net Each, Lots of			
		VDC	Ohms	1-49	50-99	100-249	250-499
732-5	DPDT	5	100	$12.90	$12.40	$11.50	$11.05
732-6	DPDT	6	200	12.90	12.40	11.50	11.05
732-9	DPDT	9	400	12.90	12.40	11.50	11.05
732-12	DPDT	12	850	12.90	12.40	11.50	11.05
732-18	DPDT	18	1600	12.90	12.40	11.50	11.05
732-26	DPDT	26.5	3300	12.90	12.40	11.50	11.05
732D-5	DPDT	5	100	14.15	13.65	12.75	12.30
732D-6	DPDT	6	200	14.15	13.65	12.75	12.30
732D-9	DPDT	9	400	14.15	13.65	12.75	12.30
732D-12	DPDT	12	850	14.15	13.65	12.75	12.30
732D-18	DPDT	18	1600	14.15	13.65	12.75	12.30
732D-26	DPDT	26.5	3300	14.15	13.65	12.75	12.30
732TN-5	DPDT	5	100	16.90	16.40	15.50	15.05
732TN-6	DPDT	6	200	16.90	16.40	15.50	15.05
732TN-9	DPDT	9	400	16.90	16.40	15.50	15.05
732TN-12	DPDT	12	850	16.90	16.40	15.50	15.05
732TN-18	DPDT	18	1600	16.90	16.40	15.50	15.05
732TN-26	DPDT	26.5	3300	16.90	16.40	15.50	15.05

MODEL 192-10
TO-5 SPREADER PAD

Preforms leads to .1″ grid pattern. Simplifies insertion of leads into PC boards. Reduces stress on leads; serves as board spacer. Aids visual inspection of solder flow.
Teledyne No. 192-10 TO-5 Spreader Pad—Net Each, 1–499 **$0.34**

NOTE: All TO-5 relays, except Series 411 and 431, can be supplied with 192-10 spreader pad installed (add **M** to Teledyne No.; Example, 412M-5).

MODULAR MERCURY-WETTED CONTACT RELAYS

HGM SERIES MODULAR MERCURY-WETTED RELAYS

Consist of standard HG switch capsules in module form, with plated steel covers for excellent mechanical protection and magnetic shielding. Standard HG switch is not polarity sensitive. SPDT make-before-break contacts rated 5 amps, 500 volts, 250 VA maximum. Life expectancy, 22 x 10^9 at specified ratings. Size, ¾" x ¾" x 3¹³⁄₆₄".

C. P. Clare Number	Coil Resis., Ohms	Must mADC		Must Oper. VDC	Max. DC Volts	Net Each, Lots of				
		Operate	Release			1-9	10-24	25-49	50-99	100 Up
HGM11111C00	40	119	52	5.24	12.6	$13.70	$10.30	$9.60	$8.95	$8.25
HGM11111F00	150	53	23	8.75	24	13.70	10.30	9.60	8.95	8.25
HGM11111J00	450	32.9	14.5	16.3	42	13.70	10.30	9.60	8.95	8.25
HGM11111K00	750	18.6	8.2	15.4	55	13.70	10.30	9.60	8.95	8.25
HGM11111L00	1100	21.6	9.5	26.2	66	13.70	10.30	9.60	8.95	8.25

HG2M SERIES DPDT MODULAR RELAYS

Same characteristics as HGM series, but contains two capsules for DPDT make-before-break configuration. Contacts rated 5 amps, 500 volts, 100 VA maximum with life expectancy of 22 x 10^9. Size, ¾" x 1³⁄₃₂" x 3¹³⁄₆₄" max.

HG2M1007	90	82.2	28.6	8.2	19	$18.65	$13.99	$13.06	$12.12	$11.19
HG2M1008	350	42.0	14.6	16.2	37	18.65	13.99	13.06	12.12	11.19
HG2M1020	580	32.5	11.2	20.7	48	18.65	13.99	13.06	12.12	11.19
HG2M1026	1250	23.0	8.0	31.8	70	18.65	13.99	13.06	12.12	11 19

HGSM SERIES PRINTED CIRCUIT MODULE RELAYS

Mercury-wetted relays for printed circuit board mounting. **HGSM-1000** series have SPDT make-before-break contacts; **HGSM-5000,** break-before-make. Contacts rated 2 amps, 500 volts, 100 VA max. at rated load. Max. dissipation, 2 watts continuous at 25° C. Temperature rise, 30° C per watt at 25° C ambient. Life expectancy, 22 x 10^9. Single side stable, except as indicated. Size, ⅝" x ⅝" x 2¹⁄₁₆" max.

C. P. Clare Number	Coil Resis., Ohms	Must mADC		Must Oper. VDC	Max. VDC	Net Each, Lots of				
		Operate	Release			1-9	10-24	25-49	50-99	100 Up
HGSM1009	275	17.0	2.8	5.2	23.4	$11.80	$8.85	$8.30	$7.70	$7.10
HGSM1010	450	12.9	2.1	6.4	30.0	11.80	8.85	8.30	7.70	7.10
HGSM1011	675	11.6	1.9	8.6	36.7	11.80	8.85	8.30	7.70	7.10
HGSM1002	940	10.1	1.7	10.5	43.3	11.80	8.85	8.30	7.70	7.10
HGSM1001	1425	8.3	1.4	13	53.4	11.80	8.85	8.30	7.70	7.10
HGSM1003	2400	7.35	1.2	20.6	69.2	11.80	8.85	8.30	7.70	7.10
HGSM1016*	1100/1100	7.25/5.7	.....	8.77/6.9	46.9/46.9	11.80	8.85	8.30	7.70	7.10
HGSM5035	275	17.0	2.8	5.2	23.4	11.80	8.85	8.30	7.70	7.10
HGSM5009	450	12.9	2.1	6.4	30.0	11.80	8.85	8.30	7.70	7.10
HGSM5010	675	11.6	1.9	8.6	36.7	11.80	8.85	8.30	7.70	7.10
HGSM5011	940	10.1	1.7	10.5	43.3	11.80	8.85	8.30	7.70	7.10
HGSM5001	1425	8.3	1.4	13	53.4	11.80	8.85	8.30	7.70	7.10
HGSM5064	2400	7.35	1.2	20.6	69.2	11.80	8.85	8.30	7.70	7.10
HGSM5003*	1100/1100	±7.25/5.7	.....	±8.77/6.9	46.9/46.9	11.80	8.85	8.30	7.70	7.10

*Bi-stable double wound.

HGS2MT SERIES MERCURY-WETTED CONTACT RELAYS

Capable of handling input switching functions for any type of reasonable high speed, low level data acquisition system. Contacts rated 2 amps, 500 volts, 100 VA maximum. DPDT, Form C break-before-make. Life expectancy, 22 x 10^9. Size, ¾" x 1³⁄₃₂" x 2¹⁄₁₆" max.

C. P. Clare Number	Nom. VDC	Coil Resis., Ohms	Must VDC		Net Each, Lots of				
			Operate	Release	1-9	10-24	25-49	50-99	100 Up
HGS2MT51111F00	6	130	3.0	0.5	$22.15	$16.61	$15.51	$14.40	$13.29
HGS2MT51111J00	12	520	5.3	1.1	26.25	19.69	18.38	17.06	15.75
HGS2MT51111M00	24	2200	11.0	2.2	26.25	19.69	18.38	17.06	15.75

HGJM SERIES MERCURY-WETTED CONTACT RELAYS

Noise is only 15 μV at 4 ms after coil energization with 10 kHz bandwidth; less than 5 μV at 5 ms. Fast response time approaches 1 ms; ultra-stable to 250 Hz. SPDT contacts rated 2 amps at 500 volts max.; 100 VA max. AC or DC.

0.350" LOW PROFILE SINGLE SIDE STABLE

C. P. Clare Number	Nom. VDC	Coil Resis. Ohms	Must VDC		Net Each, Lots of				
			Operate	Release	1-9	10-24	25-49	50-99	100 Up
HGJM51131J00	5.0	68	3.0	0.50	$13.60	$10.20	$9.55	$8.85	$8.20
HGJM51131N00	12.0	375	6.6	1.0	13.60	10.20	9.55	8.85	8.20
HGJM51131R00	24.0	1425	14.0	2.3	13.60	10.20	9.55	8.85	8.20
HGJM51131V00	48.0	6100	27.5	5.0	13.60	10.20	9.55	8.85	8.20

0.400" HIGH SENSITIVITY SINGLE SIDE STABLE

HGJM51111K00	5.0	125	3.2	0.57	$13.00	$9.75	$9.10	$8.45	$7.80
HGJM51111P00	12.0	685	7.5	1.4	13.00	9.75	9.10	8.45	7.80
HGJM51111T00	24.0	2650	15.0	2.6	13.00	9.75	9.10	8.45	7.80
HGJM51111W00	48.0	9850	31.0	5.5	13.00	9.75	9.10	8.45	7.80

HGJ2MT SERIES MERCURY-WETTED CONTACT RELAYS

Same as HGJM Series except two capsules for DPDT configurations.

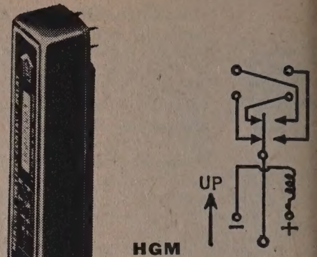
0.350" LOW PROFILE SINGLE SIDE STABLE

HGJ2MT51231E00	5.0	27	2.6	.54	$25.35	$19.05	$17.75	$16.50	$15.25
HGJ2MT51231K00	12.0	230	6.0	1.36	25.35	19.05	17.75	16.50	15.25
HGJ2MT51231N00	24.0	800	12.0	2.4	25.35	19.05	17.75	16.50	15.25
HGJ2MT51231R00	48.0	2850	23.0	4.65	25.35	19.05	17.75	16.50	15.25

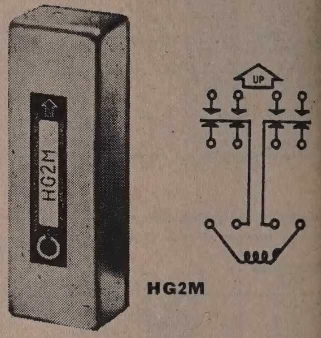
0.400" HIGH SENSITIVITY SINGLE SIDE STABLE*

HGJ2MT54211G00	5.0	55	2.8	0.50	$24.35	$18.35	$17.05	$15.83	$14.61
HGJ2MT54211L00	12.0	370	7.3	1.0	24.35	18.35	17.05	15.83	14.61
HGJ2MT54211P00	24.0	1370	14.0	2.3	24.35	18.35	17.05	15.83	14.61
HGJ2MT54211T00	48.0	5300	29.0	4.9	24.35	18.35	17.05	15.83	14.61

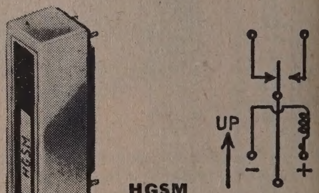
*With common open time.



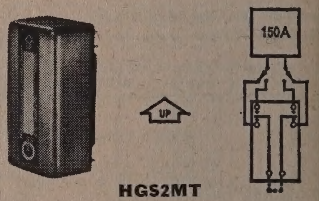
HGM



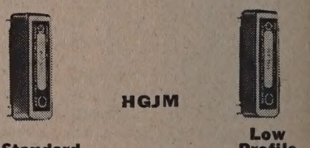
HG2M



HGSM



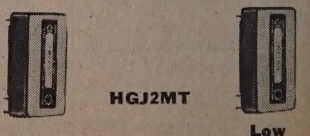
HGS2MT



HGJM

Standard

Low Profile



HGJ2MT

Standard

Low Profile

SERIES PRB PICOREED® RELAYS

PRB

A state-of-the-art advancement in sealed contact reed relays; small in size, ultra-fast in operation. Response time, physical size, sensitivity and reliability characteristics combine to provide complete electrical and packaging compatibility with integrated circuit devices. Ideal for economical and reliable solid-state input-output isolation buffering applications. High speed operation, with operate time as low as 500 µsec., including bounce, at normal coil power. Contacts rated 0.5 amp max., 100 volts max., 10 VA max.; 1.0 amp maximum carry load. Life expectancy: 100 million operations at low-level loads; 5 million operations at 28 VDC, 0.125 amp. Series 3000 five-volt Picoreed relays are specially designed for compatibility with standard 5-volt DTL and TTL logic families; have must operate voltage value of 3.75 volts at 25° C. PRB low profile Series have straight pin terminals; permits PC board mounting on .375" centers. Suffix **H** indicates high sensitivity units that allow .500" mtg. centers; others are low-profile types. All types are .800" long (width and height shown in table).

C. P. Clare Number	Nom. V	Coil Resis., Ohms	Con-tact Form	Size, Inches W.	Size, Inches H.	Net Each, Lots of 1-24	25-99	100-249	250 Up
PRB-2510	6	387	1A	.275	.187	$2.75	$2.48	$2.20	$2.07
PR2B-2007	6	136	2A	.375	.225	4.00	3.60	3.20	3.00
PR3B-2006	6	117	3A	.475	.225	5.25	4.73	4.20	3.94
PR4B-2005	6	88	4A	.575	.225	6.50	5.85	5.20	4.88
PRB-2513	12	1200	1A	.275	.187	2.75	2.48	2.20	2.07
PR2B-2011	12	740	2A	.375	.225	4.00	3.60	3.20	3.00
PR3B-2009	12	483	3A	.475	.225	5.25	4.73	4.20	3.94
PR4B-2008	12	351	4A	.575	.225	6.50	5.85	5.20	4.88
PR5B-2008	12	419	5A	.675	.225	7.75	6.98	6.20	5.81
PRB-2516	24	5380	1A	.275	.187	3.05	2.75	2.44	2.29
PR2B-2014	24	3042	2A	.375	.225	4.30	3.87	3.44	3.23
PR3B-2013	24	2254	3A	.475	.225	5.55	5.00	4.44	4.17
PR4B-2012	24	1856	4A	.575	.225	6.80	6.12	5.44	5.10
PR5B-2011	24	1424	5A	.675	.225	8.05	7.25	6.44	6.04
PRB-2009H	6	535	1A	.400	.350	3.00	2.70	2.40	2.25
PR2B-2007H	6	297	2A	.500	.350	4.25	3.83	3.40	3.19
PR3B-2006H	6	228	3A	.600	.350	5.50	4.95	4.40	4.13
PR4B-2005H	6	155	4A	.700	.350	6.75	6.08	5.40	5.07
PR5B-2005H	6	180	5A	.800	.350	8.00	7.20	6.40	6.00
PRB-2013H	12	2870	1A	.400	.350	3.00	2.70	2.40	2.25
PR2B-2010H	12	1180	2A	.500	.350	4.25	3.83	3.40	3.19
PR3B-2009H	12	877	3A	.600	.350	5.50	4.95	4.40	4.13
PR4B-2008H	12	663	4A	.700	.350	6.75	6.08	5.40	5.07
PR5B-2008H	12	771	5A	.800	.350	8.00	7.20	6.40	6.00
PRB-2016H	24	11900	1A	.400	.350	3.40	3.06	2.72	2.55
PR2B-2013H	24	3780	2A	.500	.350	4.65	4.19	3.72	3.49
PR3B-2013H	24	4700	3A	.600	.350	5.90	5.31	4.72	4.43
PR4B-2012H	24	3620	4A	.700	.350	7.15	6.44	5.72	5.37
PR5B-2011H	24	3150	5A	.800	.350	8.40	7.56	6.72	6.30
PRB-3510	5	387	1A	.275	.187	3.05	2.75	2.44	2.29
PR2B-3007	5	136	2A	.375	.225	4.30	3.87	3.44	3.23
PR3B-3006	5	117	3A	.475	.225	5.55	5.00	4.44	4.17
PR4B-3005	5	88	4A	.575	.225	6.80	6.12	5.44	5.10
PR5B-3005	5	105	5A	.675	.225	8.05	7.25	6.44	6.04
PRB-3009H	5	535	1A	.400	.350	3.40	3.06	2.72	2.55
PR2B-3007H	5	297	2A	.500	.350	4.65	4.19	3.72	3.49
PR3B-3006H	5	228	3A	.600	.350	5.90	5.31	4.72	4.43
PR4B-3005H	5	155	4A	.700	.350	7.15	6.44	5.72	5.37
PR5B-3005H	5	180	5A	.800	.350	8.40	7.56	6.72	6.30

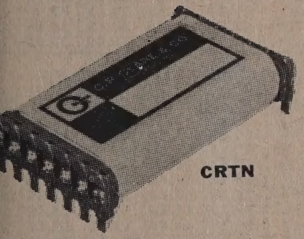
SERIES MRME MICRO-CLAREED RELAYS

MRME

ne high performance standards as regu- Clareed relays (listed below), in only fifth the size. Provide isolation between and contacts. Immune to false opera- by the type of transients that affect d state devices; insensitive to overload nsients that would damage solid state ices. Offer switching speed as fast as microseconds, fully compatible with er mechanics of process control. De- ned for PC board use. Contacts are ed 15 VA max., ¾ amp max. In molded xy module.

C. P. Clare Number	Nom. V	Coil Resis., Ohms	Con-tact Form	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-99	100-249	250 Up
MRME-1540	5	130	1A	1 19/64 x 13/32 x .385	$3.50	$3.15	$3.00	$2.80
MR2ME-1540	5	100	2A	1 19/64 x 33/64 x .385	4.85	4.40	4.15	3.90
MR3ME-1540	5	80	3A	1 19/64 x 39/64 x .385	6.20	5.60	5.30	5.00
MR4ME-1540	5	60	4A	1 19/64 x 45/64 x .385	7.55	6.80	6.45	6.05
MRME-1041	6	218	1A	1 19/64 x 13/32 x .385	3.50	3.15	3.00	2.80
MR2ME-1041	6	168	2A	1 19/64 x 33/64 x .385	4.85	4.40	4.15	3.90
MR3ME-1041	6	125	3A	1 19/64 x 39/64 x .385	6.20	5.60	5.30	5.00
MR4ME-1041	6	95	4A	1 19/64 x 45/64 x .385	7.55	6.80	6.45	6.05
MRME-1042	12	790	1A	1 19/64 x 13/32 x .385	3.50	3.15	3.00	2.80
MR2ME-1042	12	635	2A	1 19/64 x 33/64 x .385	4.85	4.40	4.15	3.90
MR3ME-1042	12	510	3A	1 19/64 x 39/64 x .385	6.20	5.60	5.30	5.00
MR4ME-1042	12	410	4A	1 19/64 x 45/64 x .385	7.55	6.80	6.45	6.05
MRME-1043	24	3060	1A	1 19/64 x 13/32 x .385	4.05	3.65	3.45	3.25
MR2ME-1043	24	2580	2A	1 19/64 x 33/64 x .385	5.40	4.90	4.60	4.35
MR3ME-1043	24	1950	3A	1 19/64 x 39/64 x .385	6.75	6.10	5.75	5.40
MR4ME-1043	24	1500	4A	1 19/64 x 45/64 x .385	8.10	7.30	6.90	6.50

SERIES CRTN CLAREED RELAYS


CRTN

ra-reliable reed relays for printed circuit rd mounting. Reed contacts are sealed an inert gas atmosphere, within a glass e. Coils are wound on molded bobbins able of accepting up to six Clareed tch capsules. Standard Clareed relays ve 1, 2, 4 and 6 Form A contacts rated VA maximum, non-inductive; 1 amp ximum, 250 volts maximum; with carry d of 5 amps maximum (not switched). e expectancy, over 20 million operations rated load. Insulation resistance, 500K gohms minimum. Breakdown voltage, V rms, 60 Hz minimum. Available for 12, 24 or 48 volts.

C. P. Clare Number	V	Coil Resis., Ohms	Con-tact Form	Maximum Size	Net Each, Lots of 1-24	25-99	100-249	250 Up
CRTN-1007	6	160	1A	5/8" x 9/16" x 2 21/32"	$ 3.50	$3.15	$2.80	$2.63
CR2TN-1004	6	88	2A	27/32" x 9/16" x 2 21/32"	4.50	4.05	3.60	3.38
CR4TN-1104	6	56	4A	1 9/32" x 9/16" x 2 21/32"	6.50	5.85	5.20	4.88
CR6TN-1003	6	31	6A	1 49/64" x 9/16" x 2 21/32"	8.50	7.65	6.80	6.38
CRTN-1010	12	600	1A	5/8" x 9/16" x 2 21/32"	3.50	3.15	2.80	2.63
CR2TN-1007	12	235	2A	27/32" x 9/16" x 2 21/32"	4.50	4.05	3.60	3.38
CR4TN-1107	12	136	4A	1 9/32" x 9/16" x 2 21/32"	6.50	5.85	5.20	4.88
CR6TN-1006	12	120	6A	1 49/64" x 9/16" x 2 21/32"	8.50	7.65	6.80	6.38
CRTN-1013	24	2500	1A	5/8" x 9/16" x 2 21/32"	4.50	4.05	3.60	3.38
CR2TN-1010	24	1400	2A	27/32" x 9/16" x 2 21/32"	5.50	4.95	4.40	4.13
CR4TN-1110	24	835	4A	1 9/32" x 9/16" x 2 21/32"	7.50	6.75	6.00	5.63
CR6TN-1009	24	510	6A	1 49/64" x 9/16" x 2 21/32"	9.50	8.55	7.60	7.13
CRTN-1016	48	9450	1A	5/8" x 9/16" x 2 21/32"	6.00	5.40	4.80	4.50
CR2TN-1013	48	5400	2A	27/32" x 9/16" x 2 21/32"	7.00	6.30	5.60	5.25
CR4TN-1113	48	2195	4A	1 9/32" x 9/16" x 2 21/32"	9.00	8.10	7.20	6.75
CR6TN-1012	48	1900	6A	1 49/64" x 9/16" x 2 21/32"	11.00	9.90	8.80	8.25

CLARE

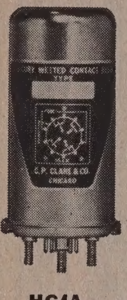
a GENERAL INSTRUMENT company

PLUG-IN MERCURY-WETTED CONTACT RELAYS

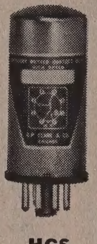
HG

HGP

HG2A, HG3A



HG4A



HGS

BASE/WIRING DIAGRAMS

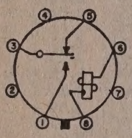


Fig. S4

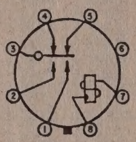


Fig. 1

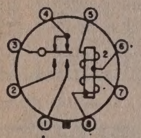


Fig. 2

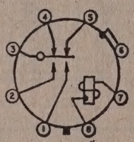


Fig. 4

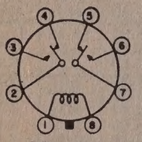


Fig. 2A1

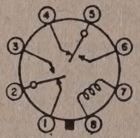


Fig. 2A2

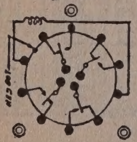


Fig. 4A1

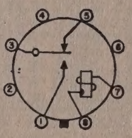


Fig. S1

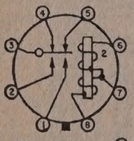


Fig. 3

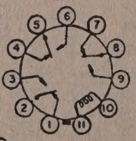


Fig. 3A1

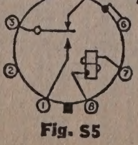


Fig. S5

HG SERIES PLUG-IN MERCURY-WETTED CONTACT RELAYS

Type HG relays have SPDT make-before-break form D contacts rated 5 amps, 500 V, 2 VA max.; operating time, 2 msec. **Type HG2A:** DPDT operation; 2 capsules; operati time, 2¼ msec. **Type HG3A:** 3PDT operation; 3 capsules; operating time, 2½ ms **Type HG4A:** 4PDT operation; 4 capsules; operating time, 3¾ msec. Life, 22 x 10^9 specified ratings. Octal plug-in base, except HG4A (10-pin glass-to-metal plug). Size (n including pins): HG, 1.105" dia. x 2.636" h.; HG2A and HG3A, $1\frac{17}{32}$" dia. x $3\frac{27}{64}$" HG4A, $1\frac{1}{16}$" dia. x 3⅜" h.

C. P. Clare Number	Coil Resis., Ohms	Must mADC Oper-ate	Must mADC Re-lease	Must Oper. VDC	Max. VDC	Base Fig-ure	Net Each, Lots of 1-9	10-24	25-49	50-99	100 Up
HG11031B00	40	67	30	2.9	11	4	$17.65	$13.25	$12.40	$11.50	$10.
HG11031E00	130	37	16	5.4	20	4	17.65	13.25	12.40	11.50	10.
HG11011H01	500	20	8.7	11	39	1	17.65	13.25	12.40	11.50	10.
HG11011J01	700	19	8.3	15	45	1	17.65	13.25	12.40	11.50	10.
HG11011J00	1000	15	6.6	17	55	1	17.65	13.25	12.40	11.50	10.
HG11011L00	2500	10	4.4	28	87	1	17.65	13.25	12.40	11.50	10.
HG11011M00	4000	7.5	3.3	33	110	1	17.65	13.25	12.40	11.50	10.
HG11031M00	4000	7.5	3.3	33	110	4	17.65	13.25	12.40	11.50	10.
HG11011N00	7000	5.8	2.6	45	145	1	17.65	13.25	12.40	11.50	10.
HG11011P00	11,000	5.0	2.2	61	180	1	17.65	13.25	12.40	11.50	10.
HG11011R00	25,000	3.4	1.5	94	275	1	17.65	13.25	12.40	11.50	10.
HG1003†	700/ 3300	32/ 13	14/ 4.9	25/ 47	46/ 99	2	17.65	13.25	12.40	11.50	10.
HG2A1042	140	67	28	10	24	2A1	28.60	21.45	20.05	18.60	17.2
HG2A1003	315	44	19	15	36	2A2	28.60	21.45	20.05	18.60	17.2
HG2A1017	500	35	15	19	45	2A2	28.60	21.45	20.05	18.60	17.2
HG2A1009	700	31	13	24	53	2A1	28.60	21.45	20.05	18.60	17.2
HG2A1002	700	31	13	24	53	2A2	28.60	21.45	20.05	18.60	17.2
HG2A1015	1250	22	9.3	30	71	2A2	28.60	21.45	20.05	18.60	17.2
HG2A1068	2500	17	7.0	46	100	2A1	28.60	21.45	20.05	18.60	17.2
HG2A1001	5000	11	4.7	62	142	2A1	28.60	21.45	20.05	18.60	17.2
HG3A1004	5000	11	4.7	62	142	2A2	28.60	21.45	20.05	18.60	17.2
HG2A1013	10,000	8.6	3.6	94	200	2A2	28.60	21.45	20.05	18.60	17.2
HG3A1004	315	44	19	15	36	2A1	37.10	27.85	26.00	24.15	22.3
HG3A1006	500	35	15	19	45	2A2	37.10	27.85	26.00	24.15	22.3
HG3A1002	700	31	13	24	53	3A1	37.10	27.85	26.00	24.15	22.3
HG3A1008	1250	22	9.3	30	71	3A1	37.10	27.85	26.00	24.15	22.3
HG3A1005	2500	17	7.0	46	100	3A1	37.10	27.85	26.00	24.15	22.3
HG3A1003	5000	11	4.7	62	142	3A1	37.10	27.85	26.00	24.15	22.3
HG3A1010	10,000	8.6	3.6	94	200	3A1	37.10	27.85	26.00	24.15	22.3
HG4A1011	390	42	18	18	40	4A1	47.70	35.80	33.40	31.05	28.6
HG4A1001	700	35	15	27	53	4A1	47.70	35.80	33.40	31.05	28.6
HG4A1007	1400	23	9.9	35	75	4A1	47.70	35.80	33.40	31.05	28.6
HG4A1003	4000	16	6.7	69	126	4A1	47.70	35.80	33.40	31.05	28.6
HG4A1006	10,000	8.6	3.7	94	200	4A1	47.70	35.80	33.40	31.05	28.6

HGP SERIES OCTAL-BASED MERCURY-WETTED RELAYS

Similar to HG series, but with permanent magnets making a slight increase in heigh Single side stable, except as indicated. Size, 1.105" dia. x 3.105" high (not incl. pins).

HGP1001	90	16	1.3	1.6	16	1	$19.15	$14.40	$13.45	$12.45	$11.5
HGP1005	1000	5.6	0.4	6.2	55	1	19.15	14.40	13.45	12.45	11.5
HGP1002	4000	3.0	0.24	13	110	1	19.15	14.40	13.45	12.45	11.5
HGP1008	4000	4.7	1.7	21	110	1	19.15	14.40	13.45	12.45	11.5
HGP1055	7000	2.2	0.19	17	145	1	19.15	14.40	13.45	12.45	11.5
HGP1052	11,000	1.9	0.21	23	180	1	19.15	14.40	13.45	12.45	11.5
HGP1050	25,000	1.3	0.15	36	275	1	19.15	14.40	13.45	12.45	11.5
HGP1006†	700/ 3300	14/ 5.7	2.8	11/ 21	46/ 99	1	19.15	14.40	13.45	12.45	11.5
HGP1047*	600	±3.4	.....	±2.2	43	1	19.15	14.40	13.45	12.45	11.5
HGP1003*	4000	±1.5	.....	±6.6	110	1	19.15	14.40	13.45	12.45	11.5
HGP1012†	700/ 3300	6.0/ 2.4	.....	4.6/ 3.7	46/ 99	3	19.15	14.40	13.45	12.45	11.5
HGP1031*†	7500/ 7500	±1.7/ 1.7	.....	±14/ 14	150/ 150	3	19.15	14.40	13.45	12.45	11.5
HGP1028	500	......	.....	6.3#	.....	4	19.15	14.40	13.45	12.45	11.5
HGP1009	4000	......	.....	18.5#	.....	4	19.15	14.40	13.45	12.45	11.5

HGS SERIES OCTAL-BASED MERCURY-WETTED RELAYS

Plug-in relays SPDT type rated 2 amps, 500 V, 100 VA max. Operate time, 1 msec. Life 22 x 10^9 at specified ratings. Single element assemblies. **HGS1:** Make-before-break contacts. **HGS5:** Break-before-make contacts. Size, 1.312" max. dia. x 2.650" h. (not includin pins). Base HGS11011M01, S4; HGS51011M01, S5; all others, S1.

C. P. Clare Number	Coil Resis., Ohms	Must mADC Oper-ate	Must mADC Re-lease	Must Oper. VDC	Max. VDC	Net Each, Lots of 1-9	10-24	25-49	50-99	100 Up
HGS11011D00	90	6.3	1.1	.63	13	$14.60	$10.95	$10.25	$9.50	$8.8
HGS11011G00	350	3.6	0.61	1.4	26	14.60	10.95	10.25	9.50	8.8
HGS11011H01	500	2.9	0.50	1.6	31	14.60	10.95	10.25	9.50	8.8
HGS11011H00	600	2.9	0.69	1.9	34	14.60	10.95	10.25	9.50	8.8
HGS11011J02	700	2.9	0.49	2.2	37	14.60	10.95	10.25	9.50	8.8
HGS11011J00	1000	2.2	0.38	2.4	44	14.60	10.95	10.25	9.50	8.8
HGS11011L00	2500	1.4	0.17	3.9	70	14.60	10.95	10.25	9.50	8.8
HGS11011M00	4000	1.25	0.25	5.5	90	14.60	10.95	10.25	9.50	8.8
HGS11011M01	4000	1.25	0.25	5.5	90	14.60	10.95	10.25	9.50	8.8
HGS11011N00	7000	0.87	0.14	6.7	118	14.60	10.95	10.25	9.50	8.8
HGS11011P00	11,000	0.72	0.12	8.7	148	14.60	10.95	10.25	9.50	8.8
HGS12011J01*	1000	‡1.2	.....	1.4	45	14.60	10.95	10.25	9.50	8.8
HGS12011L00*	2500	‡0.82	.....	2.3	70	14.60	10.95	10.25	9.50	8.8
HGS12011M00*	4000	‡0.48	.....	2.1	90	14.60	10.95	10.25	9.50	8.8
HGS12011N00*	7000	‡0.48	.....	3.7	118	14.60	10.95	10.25	9.50	8.8
HGS12011R00*	25,000	‡0.29	.....	3.0	223	14.60	10.95	10.25	9.50	8.8
HGS15011H00§	600	......	.....	6.3#	.....	14.60	10.95	10.25	9.50	8.8
HGS51011G00	350	3.6	0.61	1.4	26	14.60	10.95	10.25	9.50	8.8
HGS51011J00	1000	2.2	0.38	2.4	44	14.60	10.95	10.25	9.50	8.8
HGS51011L00	2500	1.4	0.17	3.9	70	14.60	10.95	10.25	9.50	8.8
HGS51011M01	4000	1.25	0.25	5.5	90	14.60	10.95	10.25	9.50	8.8
HGS51011P00	11,000	0.72	0.12	8.7	148	14.60	10.95	10.25	9.50	8.8
HGS51011R00	25,000	0.52	0.09	14.3	224	14.60	10.95	10.25	9.50	8.8
HGS52011J01*	1000	1.2	.....	1.4	45	14.60	10.95	10.25	9.50	8.8
HGS52011M00*	4000	0.48	.....	2.1	90	14.60	10.95	10.25	9.50	8.8
HGS55011H00§	600	......	.....	6.3#	.....	14.60	10.95	10.25	9.50	8.8

*Bi-stable. †Double wound. ‡Single side stable. §Chopper. #VAC.

DIV. OF TRW Transformers

DESIGNED, MANUFACTURED AND SUCCESSFULLY TESTED TO MIL-T-27C

-T★ AND DI-T★ TRANSISTOR TRANSFORMERS

DO-T

DI-T

Subminiature transistor transformers are designed, manufactured and tested to MIL-T-27C specifications. Leads are plastic insulated; withstand 10-lb. pull. Ideal for printed circuit use. High efficiency, low distortion and wide frequency range. Metal case. **Size:** 5/16″ dia. x 13/32″ lg., DO-T; 5/16″ dia. x 1/4″ lg., DI-T. U.S. Pat. No. 2,949,591; others pending.

TC ype•	Ea., 1-4	††	Pri. Imped., Ohms, mADC	Sec. Imped., Ohms	UTC Type▲	Ea., 1-4
-T1	$8.55	a	20K/30K, 0.5	800/1200	DI-T1	$8.55
-T2	7.72	b	500/600, 3	50/60	DI-T2	7.72
-T3	7.72	b	1K/1.2K, 3	50/60	DI-T3	7.72
-T4	7.72	b	600, 3	3.2	....	.....
-T5	7.72	b	1.2K, 2	3.2	DI-T5	7.72
-T6	8.55	b	10K, 1	3.2	....	.....
-T7	13.24	c	200K	1K	....	.....
-T8	6.86	d*	3.5 H at 2	2.5 H‡‡	DI-T8	6.86
-T9	9.43	e	10K/12K, 1	500/600 CT	DI-T9	9.43
-T10	9.43	f	10K/12.5K, 1	1.2K/1.5K CT	DI-T10	9.43
-T11	9.43	f	10K/12.5K, 1	2K/2.5K CT	DI-T11	9.43
-T12	8.16	b	150/200 CT, 10	12/16	....	.....
-T13	8.16	b	300/400 CT, 7	12/16	....	.....
-T14	8.55	b	600/800 CT, 5	12/16	....	.....
-T15	8.55	b	800/1070 CT, 4	12/16	....	.....
-T16	8.55	b	1K/1330 CT, 3.5	12/16	....	.....
-T17	8.55	b	1.5K/2K CT, 3	12/16	....	.....
-T18	8.96	b	7.5K/10K CT, 1	12/16	....	.....
-T19	8.55	b	300 CT, 7	600	DI-T19	8.55
-T20	8.55	b	500 CT, 5.5	600	DI-T20	8.55
-T21	8.55	b	900 CT, 4	600	DI-T21	8.55
-T22	8.55	b	1500CT, 3	600	DI-T22	8.55
-T23	9.83	a	20K/30K CT,.5	0.8K/1.2K CT	DI-T23	9.83
-T24	14.12	c	200K CT	1K CT	....	.....
-T25	10.27	a	10K/12K CT, 1	1.5K/1.8K CT	DI-T25	10.27
-T26	8.16	d†	6 H at 2	4.5 H‡‡	DI-T26	8.16
-T27	6.86	d‡	1.25 H at 2	0.9 H‡‡	DI-T27	6.86
-T28	6.86	d§	0.3 H at 4	0.1 H‡‡	DI-T28	6.86
O-T29	8.16	b	120/150 CT, 10	3.2/4	....	.....
O-T30	8.16	b	320/400 CT, 7	3.2/4	....	.....
O-T31	8.55	b	640/800 CT, 5	3.2/4	....	.....
O-T32	8.55	b	800/1K CT, 4	3.2/4	....	.....
O-T33	8.55	b	1060/1330 CT,3.5	3.2/4	....	.....
O-T34	8.55	b	1.6K/2K CT, 3	3.2/4	....	.....
O-T35	8.96	b	8K/10K CT, 1	3.2/4	....	.....
O-T36	10.72	a	10K/12K CT, 1	10K/12K CT	DI-T36	10.72
O-T37	11.12	a	2K/2.5K CT, 3	8K/10K split	DI-T37	11.12
O-T38	11.12	a	10K/12K CT, 1	2K/2.4K split	DI-T38	11.12
O-T39	11.12	a	20K/30K CT, .5	1K/1.5K split	....	.....
O-T40	11.98	a	40K/50K CT, .25	400/500 split	....	.....
O-T41	10.72	a	400/500 CT, 8/6	400/500 split	DI-T41	10.72
O-T42	10.72	a	400/500 CT, 8/6	120/150 split	....	.....
O-T43	10.72	a	400/500 CT, 8/6	40/50 split	DI-T43	10.72
O-T44	10.72	a	80/100 CT, 12/10	32/40 split	DI-T44	10.72
O-T45	11.12	a	1K/1.25K CT,3.5	16K/20K split	....	.....
O-T46	13.71	c■	100K CT	500 CT	....	.....
O-T47	11.54	a■	9K/10K CT, 1	9K/10K CT	....	.....
O-T48	11.12	a■	8K/10K CT, 1	1.2K/1.5K CT	....	.....
O-T49	11.12	d#	Series, 20 H at 1 mA, 5.1K ohms; Par., 5 H at 2 mA, 1275 ohms		....	.....
O-T50	8.16	d#	Series, .075 H at 10 mA, 10.5 ohms; Par., .018 H at 20 mA, 2.6 ohms		....	.....
O-T51	11.12	a	2K/2.5K CT, 3	2K/2.5K split	DI-T51	11.08
O-T52	11.12	a■	4K/5K CT, 2	8K/10K CT	DI-T52	11.08
O-T53	11.12	c	400/500 CT, 8/6	4K/5K CT	DI-T53	11.08
O-T54	12.41	a	40K/50K CT, .25	4K/5K CT	....	.....
O-T400	8.17	h	28 V, 380–1 kHz	6.3 V, 60 mA⧗	....	.....
O-T410	9.63	h	28 V, 380–1 kHz	Two 6.3 V, 30 mA	....	.....
O-T420	11.12	h■	28 V, 380–1 kHz	28 V, 10 mA	....	.....
O-TSH	1.31		High mu shield and cover; 25 dB		DI-TSH	1.27

60 ohms. †2100 ohms. ‡100 ohms. §25 ohms. #Two windings.
Application; **a**—Interstage. **b**—Output. **c**—Input. **d**—Inductor.
-Driver or output. **f**—Driver. **g**—Matching. **h**—Power unit.
DI-T—Primary impedance. •Wt., 1/10 oz. ▲Wt., 1/20 oz. ■With
ectrostatic shield. ⧗Replaces old No. DO-T500.

DO-T200★ TRANSISTOR TRANSFORMERS

Rugged, metal case construction uses the same unique winding techniques as that of DO-T above. Hermetically sealed, high efficiency, low distortion and excellent response. Straight 7/8″ long leads, .016″ d. Dumet wire, gold plated and may be either welded or soldered. Designed, manufactured and successfully tested to MIL-T-27C. **Size:** .350″ dia. x 9/16″ high. Weight, 1/8 oz. U. S. Pat. No. 2,949,591, others pending.

UTC Type	Application	Impedance, Ohms Primary	Impedance, Ohms Secondary	Ea., 1-4
O-T-255	Outp./match	1K/1.2K CT	50/60	$ 9.83
O-T-275	Interstage	10K/12K CT	1.5K/1.8K CT	11.12
O-T-277	Interstage	10K/12K CT	2K/2.4K split	12.41
O-T-278	Driver	10K/12.5K	2K/2.5K CT	12.41
O-T-283*	Isol./Inter.	10K/12K CT	10K/12K CT	12.41
O-T-288	Interstage	20K/30K CT	800/1.2K CT	12.41
O-T-297	Input, Chopper	200K CT	1K CT	15.41
O-T200SH	Drawn Hipermalloy shield provides 15 to 20 dB shielding through side of case			1.08

Ratio, 1:1.

-UTC trademark.

I-DO-IT★ AND I-DI-T★ TRANSFORMERS

Industrial versions of DO-T and DI-T (i.e., I-DO-T101 = DO-T1; I-DI-T301 = DI-T1), left. Same performance, but environmental specifications have been relaxed to reduce cost.

UTC Type I-	Ea., 1-4	UTC Type I-	Ea., 1-4	UTC Type I-	Ea., 1-4	UTC Type I-	Ea., 1-4
DO-T101	$5.14	DO-T121	$5.14	DO-T141	$5.60	DI-T309	$5.52
DO-T102	4.86	DO-T122	5.14	DO-T142	5.60	DI-T310	5.52
DO-T103	4.86	DO-T123	5.33	DO-T143	5.60	DI-T311	5.52
DO-T104	4.95	DO-T124	9.06	DO-T144	5.60	DI-T319	5.14
DO-T105	4.95	DO-T125	5.52	DO-T145	6.16	DI-T320	5.14
DO-T106	5.14	DO-T126	4.86	DO-T146	9.25	DI-T321	5.14
DO-T107	8.32	DO-T127	4.48	DO-T147	6.54	DI-T322	5.14
DO-T108	4.48	DO-T128	4.48	DO-T148	5.88	DI-T233	5.79
DO-T109	5.33	DO-T129	5.14	DO-T149	5.88	DI-T325	5.79
DO-T110	5.33	DO-T130	5.14	DO-T150	5.14	DI-T326	4.86
DO-T111	5.33	DO-T131	5.14	DO-T151	5.79	DI-T327	4.48
DO-T112	5.14	DO-T132	5.14	DO-T152	5.79	DI-T328	4.48
DO-T113	5.14	DO-T133	5.14	DO-T153	5.79	DI-T336	5.88
DO-T114	5.14	DO-T134	5.14	DO-T154	6.35	DI-T337	6.07
DO-T115	5.14	DO-T135	5.14	DO-T155*	6.35	DI-T338	6.07
DO-T116	5.14	DO-T136	5.88	DI-T301	5.14	DI-T341	5.88
DO-T117	5.14	DO-T137	5.88	DI-T302	4.86	DI-T343	5.79
DO-T118	5.14	DO-T138	5.88	DI-T303	4.86	DI-T344	5.79
DO-T119	5.14	DO-T139	5.88	DI-T305	4.95	DI-T351	5.98
DO-T120	5.14	DO-T140	6.54	DI-T308	4.95	DI-T352	5.98

*No MIL (DO-T) equiv.; pri. and sec., 600 ohms CT; 4 mADC unbalanced primary.

DI-T200★ TRANSISTOR TRANSFORMERS

Rugged, reliable construction uses the same unique winding techniques and physical construction found in DO-T and DI-T transformers (see listing at left). Specially designed for printed circuit applications, units come with straight pin 1″ long, .016″ d. Dumet wire, gold-plated leads. Designed, manufactured and successfully tested to MIL-T-27C. Size: 5/16″ dia. x 3/8″ h. Wt., 1/15 oz. U.S. Pat. No. 2,949,591; others pending.

UTC Type	Application	Impedance, Ohms Primary	Impedance, Ohms Secondary	Ea., 1-4
DI-T225	Interstage	80/100 CT	32/40 split	$11.98
DI-T230	Outp./match	300 CT	600 CT	10.27
DI-T235	Interstage	400/500 CT	40/50 split	11.98
DI-T240*	Inter./outp.	400/500 CT	400/500 split	11.98
DI-T245	Outp./match	500/600 CT	50/60 CT	9.83
DI-T250	Oupt./mixing	500 CT	600 CT	10.27
DI-T255	Outp./match	1K/1.2K CT	50/60 CT	9.83
DI-T260	Output	1500 CT	600 CT	10.27
DI-T265	Isol./inter.	2K/2.5K CT	8K/10K split	12.41
DI-T270	Outp./driver	10K/12K CT	500/600 CT	11.12
DI-T273	Outp./driver	10K/12.5K CT	1.2K/1.5K CT	11.12
DI-T276	Inter./driver	10K/12K CT	2K/2.4K CT	11.12
DI-T278	Inter./driver	10K/12.5K CT	2K/2.5K split	12.41
DI-T283	Isol./inter.	10K/12K CT	10K/12K CT	11.98
DI-T288	Inter./driver	20K/30K CT	800/1.2K CT	11.54
DI-T204	Split inductor: 0.1 H–4 mA, 25 ohms, series; .025 H–8 mA, 6 ohms, parallel			8.55
DI-T208	Split inductor: 0.9 H–2 mA, 105 ohms, series; 0.2 H–4 mA, 26 ohms, parallel			8.55
DI-T212	Split inductor: 2.5 H–2 mA, 630 ohms, series; 0.6 H–4 mA, 157 ohms, parallel			8.55
DI-T216	Split inductor: 4.5 H–2 mA, 2.3K ohms, series; 1.1 H–4 mA, 575 ohms, parallel			9.83
DI-T200SH	Drawn Hipermalloy shield provides 15 to 20 dB shielding through side of case			1.08

*Ratio, 2:1:1.

I-DI-T500 TRANSFORMERS

Industrial version of DI-T200 series (i.e., I-DI-T525 = DI-T525). Same performance characteristics. **Size:** .375″ dia. x .406″ h.

UTC Type I-	Application	Impedance, Ohms Primary	Impedance, Ohms Secondary	Ea., 1-4
DI-T525	Interstage	80/100 CT	32/40 split	$7.38
DI-T530	Outp./match	300 CT	600 CT	6.82
DI-T535	Interstage	400/500 CT	40/50 split	7.38
DI-T540*	Inter./outp.	400/500 CT	400/500 split	7.38
DI-T545	Outp./match	500/600 CT	50/60 CT	6.82
DI-T550	Outp./mixing	500 CT	600 CT	6.82
DI-T555	Outp./match	1K/1.2K CT	50/60 CT	6.82
DI-T560	Output	1500 CT	600 CT	6.82
DI-T565	Isol./inter.	2K/2.5K CT	8K/10K split	7.85
DI-T570	Outp./driver	10K/12K CT	500/600 CT	7.01
DI-T573	Outp./driver	10K/12.5K CT	1.2K/1.5K CT	7.01
DI-T576	Inter./driver	10K/12K CT	2K/2.4K CT	7.01
DI-T578	Inter./driver	10K/12K CT	2K/2.5K split	7.85
DI-T583	Isol./inter.	10K/12K CT	10K/12K CT	7.28
DI-T588	Inter./driver	20K/30K CT	800/1.2K CT	6.92
DI-T504	Split inductor; 0.1 H–4 mA, 25 ohms, series; .025 H–8 mA, 6 ohms, parallel			5.88
DI-T508	Split inductor: 0.9 H–2 mA, 105 ohms, series; 0.2 H–4 mA, 26 ohms, parallel			6.07
DI-T512	Split inductor: 2.5H–2 mA, 630 ohms, series; 0.6 H–4 mA, 157 ohms, parallel			6.07
DI-T516	Split inductor: 4.5 H–2 mA, 2.3K ohms, series; 1.1 H–4 mA, 575 ohms, parallel			6.45

*Ratio, 2:1:1.

SEE LAST TWO PAGES OF UTC LISTING FOR MILITARY SPECIFICATIONS

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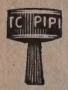
UTC DIV. OF TRW Hermetic Components

DESIGNED, MANUFACTURED AND SUCCESSFULLY TESTED TO MIL-T-27-C

NEW PIP★ SERIES TRANSISTOR PULSE TRANSFORMERS TO MIL-T-20138B

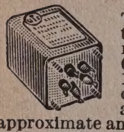


Subminiature transistor-type pulse transformers are designed to give a maximum of component density in equipments. The configuration is especially compatible with transistors. Using the basic design of the UTC DO-T* and DI-T* series, units achieve exceptional reliability. Ratio 4:4:1, checked and adjusted in a transistor test circuit to give the required pulse width. Designed, manufactured and successfully tested to MIL-T-21038B by full environmental testing. All units are completely metal cased, MIL type TP6RX4410CZ. All units individually adjusted to parameters shown in table below. Size: 5/16" dia. x 3/16" h. Weight, 1/20 oz. U.S. Pat. No. 2,949,591; others pending.

UTC No.	Approx. DC Ohms			Blocking Osc. Pulse					Coupling Circuit Characteristics							Net Each, 1-4
	1-2	3-4	5-6	•Width µsec	Rise Time	*	†	‡	•Width µsec	Volts Out	Rise Time	*	†	‡	Imp., Ohms§	
PIP-1	.21	.23	.13	.05	.02	0	0	37	.05	9	.018	0	0	12	50	$ 8.55
PIP-2	.47	.56	.17	.1	.025	0	0	25	.1	8	.02	0	0	5	50	8.55
PIP-3	1.01	1.25	.37	.2	.030	2	0	15	.2	7	.035	0	0	5	100	8.55
PIP-4	1.5	1.85	.54	.5	.05	0	0	15	.5	7	.06	0	0	0	100	8.55
PIP-5	2.45	3.1	.9	1	.08	0	0	14	1	6.8	.15	0	0	5	100	8.55
PIP-6	3.0	3.7	1.1	2	.10	0	0	15	2	6.6	.18	0	2	10	100	8.55
PIP-7	4.9	6.05	1.8	3	.20	0	0	14	3	6.8	.20	0	2	10	100	8.55
PIP-8	8.0	9.7	2.9	5	.30	0	0	3	5	7.9	.22	0	13	25	200	8.55
PIP-9	13.1	15.9	4.7	10	.35	0	5	12	10	6.5	.4	0	15	20	200	8.55
PIP-10#	.55	.41	.15	.1	.01	0	0	20	.1	8	.01	0	0	5	140/50	8.55
PIP-11#	2.9	2.2	.82	1	.02	4	4	6	1	6.6	.05	0	6	12	280/100	8.55
PIP-12#	9.4	7.1	2.6	5	.05	0	12	12	5	8	.09	2	12	25	560/200	8.55
PIP-100	Transistor pulse transformer kit consists of 1 each PIP-1 through PIP-9 in plastic case															72.75
PIP-SH	Drawn Hipermalloy shield and cover for PIP's provides 20 to 30 db shielding															1.27

*% overshoot. †Droop, %. ‡% backswing. •Pulse. §In and out. #Ratio 5:3:1, MIL type TP6RX5310CZ.

TRANSISTOR SUPPLY TRANSFORMERS



Transistor supply transformers with primary 115 VAC, 50/60 Hz (tapped on H-143 thru H-146 for dual secondary voltages). DC ratings are approximate and are based on silicon bridge rectifier (except H-141, H-142 also shown F.W. CT.). Choke input VDC is based on 10% voltage drop in choke. Condenser value, C(*), is in 1000 µF. H-141, H-142, H-147 under secondaries in parallel is single winding. MIL type TF4RX02.

UTC Type	Sec. Volts rms	Sec. Amps rms	Secondary in Parallel					Secondary in Series					MIL Case	Net Ea., 1-4
			Choke Inp.		Cond. Inp.			Choke Inp.		Cond. Inp.				
			VDC	ADC	VDC	ADC	C*	VDC	ADC	VDC	ADC	C*		
H-141	20 CT	.3	16.5	.3	26	.2	.2	.....	....	......	....	...	EB	$24.72
			8	.43	12	.3	.5	.....	....	......	....	...		
H-142	20 CT	.6	16.5	.6	26	.4	.4	.....	....	......	....	...	EA	23.84
			9	.85	13	.6	1	.....	....	......	....	...		
H-143	17/21.5	1.5	14/17.5	3	18.5/25	2	1	28/35	1.5	43/56	1	.5	HA	34.73
	17/21.5	1.5												
H-144	17/21.5	4	14/17.5	8	18.5/25	5	2	28/35	4	43/56	2.5	1	LA	56.40
	17/21.5	4												
H-145	17/21.5	9	14/17.5	18	18.5/25	12	6	28/35	9	43/56	6	4	RC-175	••
	17/21.5	9												
H-146	34/43	4.5	28/35	9	43/56	6	4	56/70	4.5	85/110	3	1	RC-175	••
	34/43	4.5												
H-147	10	20	8.2	20	10	13	12	.....	....	......	....	...	KA	47.45

UNIV. TRANSISTOR SUPPLY TRANSFORMERS

UTC universal transistor supply transformers are ideal for use in low voltage DC supplies, telephone supplies, bias voltage supplies, battery chargers and plating rectifiers. Highly reliable units are encased in MIL cases, similar to TF4 type illus. above. Primary taps can modify nominal AC voltages by −6%, +6% and ±12%. Capacitor following rectifier affects the DC voltage. All units TF4RX02.

50/60-Hz TYPES

Primary 115 VAC, 50/60 Hz. Nom. secondary, 8.25–40.5 V except H-965, 16.5–81 volts nom.

UTC Type	MIL DC Range		Indus. DC Range		MIL Case	Each, 1-4
	Volts	Amps	Volts	Amps		
H-915	6–53	.065–.02	6–53	.085–.025	AH	$21.18
H-925	6–53	.22–.07	6–53	.28–.085	AJ	22.96
H-935	6–53	1.2–.4	6–53	1.52–.48	FA	33.44
H-94	6–53	3–1	6–53	3.8–1.2	HA	36.30
H-95	6–53	7.5–2.5	6–53	9–3	KA	51.40
H-96	6–53	18–6	6–53	23–7.5	OA	93.19
H-965	12–106	1.5–.5	12–106	1.9–.6	HA	36.78

NEW 400-Hz MET★ TYPES

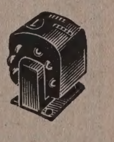
Primary 115 V, 400 Hz. Nom. sec., 8.25–40.5 V except MET-495, 16.5–81 volts nom.

MET-445	6–53	.6–.2	6–53	.75–.24	AH	$20.61
MET-455	6–53	1.2–.4	6–53	1.52–.48	AJ	29.81
MET-465	6–53	3–1	6–53	3.8–1.2	FA	29.42
MET-475	6–53	7.5–2.5	6–53	9–3	HA	36.30
MET-495	12–106	.6–.2	12–106	.76–.24	AJ	28.55

400-Hz MOLDED TYPES

Primary, 105/115 V, 380-1,000 Hz. Secondary, 6.3 V CT; 2,500 V rms test. Molded type TF5SX01ZZ is illustrated.

UTC Type	Sec. Amps	Size, Inches			Wt., Lbs.	Net Ea., 1-4
		L.	W.	H.		
H-101	3.5	1 25/32	1 21/32	2	.3	$24.14
H-102	5.5	1¾	2	2¼	.44	••
H-103	10	2 5/16	2⅛	2½	.8	31.78
H-104	25	2⅞	2½	3 1/32	1.5	42.00
H-118	.3	¾	⅞	9/16	.04	13.87



CAT★ TRANSISTOR IMPEDANCE TYPES

All units in RC-50 case. Frequency range, ±2 dB, 50–15,000 Hz. Power level 1 watt except CAT-15, 5 watts.

UTC Type	Application	Primary		Secondary Imped., Ohms	Net Each, 1-4
		Impedance Ohms	Unbal. mADC		
CAT-15	Output	48/12 spl.	750*	16 spl./8/4	••
CAT-20	Istg./outp.	500/125 spl.	20	16/4 split	••
CAT-25	Isol./outp.	500/125 spl.	20	500/125 spl.	••
CAT-30	Input/istg.	500/125 spl.	20	2K/500 split	••
CAT-40	Istg./outp.	10K/2.5K spl.	8	2K/500 split	••

*Balanced.

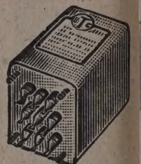
••Prices on Request.

★UTC trademark.

TRANSISTOR/FILAMENT SUPPLY TRANSFORMERS

Hermetically sealed units for transistor or filament supply use. **Primary:** 105/115/210/220 VAC, 50/60 Hz, except types H-119, H-130, H-137, H-138 (115 VAC) and H-131 (115/220 volts). Suited to 400/100 Hz service. **Size:** H-128, H-129; 6½" x 5½" x 7¾" h. Weight, H-128, 34 lbs.; H-129, 28 lbs. All ratings are MIL-T-27C except **Amps** (Industrial) ratings.

METAL CASED TF4RX01 TYPE



UTC Type	MIL Type	Sec. Volts	Amps MIL	Amps Indus.	Test• Vrms	MIL Case	Ea., 1-4
H-119	TF4RX01AH	6.3CT	.3	.38	1500	AH	$15.50
H-120	TF4RX01GB	2.5	10	12	4000	GB	••
H-121	TF4RX01JB	2.5	10	12	10000	JB	34.86
H-122	TF4RX01KB	2.5	20	26	10000	KB	••
H-123	TF4RX01NB	2.5	5	7.5	10000	NB	••
		2.5	5	7.5			
		2.5	10	15			
H-124	TF4RX01FB	5	3	3.8	2000	FB	27.28
H-125	TF4RX01KB	5	10	12	10000	KB	39.06
H-126	TF4RX01LA	5	20	25	10000	LA	••
H-127	TF4RX01NA*	5	20	30	21000	NA	109.84
H-128	TF4RX01YY*	5	60	75	21000	....	••
H-129	TF4RX01YY*	5	10	12	21000	....	••
		5	10	12			
		5	20	24			
H-130	TF4RX01AJ	6.3CT	.6	.75	1500	AJ	20.41
H-131	TF4RX01FB	6.3CT	2	2.5	2500	FB	24.53
H-132	TF4RX01JA	6.3CT	6	7	2500	JA	41.01
		6.3CT	6	7			
H-133	TF4RX01HB	6.3CT	7	8	2500	HB	32.77
H-134	TF4RX01HA	6.3CT	10	12	2500	HA	36.70
H-135	TF4RX01JB	10CT	10	13	2500	JB	39.06
H-136	TF4RX01LA	14, 12, 11CT	10	14	2500	LA	65.11
H-137	TF4RX01EB	6.3	.6	.75	1500	EB	26.10
		6.3	.6	.75			
H-138	TF4RX01GA	12.6	2	2.5	1500	GA	30.69
		12.6	2	2.5			

MET★ 400-Hz SERIES

MET-410#	TF4SX01YY 400 Hz pri.	6.3	.6	.75	500	RC-25	$10.91
MET-420	TF4SX01AH 380–1000 Hz‡	6.3CT	2	2.5	1500	AH	20.41
MET-430†	TF4SX01FA 400 Hz§	12.6CT 12.6	2 2	2.5 2.5	1500	FA	29.40
MET-435	TF4SX01FA 380–1000 Hz‡	6.3CT	10	12	2500	FA	26.91
MET-440	TF4SX01GB 380–1000 Hz‡	6.3CT 6.3CT	6 6	7 7	2500	GB	31.67

*Term. opposite mtg. †Two MET-430's, Scott-connected, provide 26 V, 2-phase from 115 V, 3-phase 400 Hz input. Replaces former No. H-139. ‡105/115/125 V primary. §57.5/99.7/115 V primary. #Replaces former No. H-140. •Secondary.

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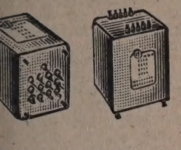
DIV. OF TRW Hermetic Components

DESIGNED, MANUFACTURED AND SUCCESSFULLY TESTED TO MIL-T-27C

RMETIC SEALED POWER/PLATE TRANSFORMERS

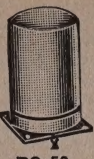


Power transformers, primary 115 V, 60 Hz suited to 50–1000 Hz service (for 50 Hz, sec. current ratings reduced by 10%). Plate transformers, primary, 105/115/210/220 VAC, 50/60 Hz. "L" ratings are choke input and "C" ratings are condenser input. H-80 thru H-198 MIL Type TF4RX03; H-110 thru H-117, MIL Type TF4RX02. Tapped high voltage winding provides either of two sec-
lary voltages for the utmost versatility. DC voltages are indi-
ed for both choke and condenser input filters, as well as for
itary and industrial applications. Suffix **W** indicates unit
igned for full wave center tap and full wave bridge use; center
of secondary may be disconnected from ground.

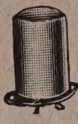
TC ype	*	Sec. VCT	MIL-T-27C			Industrial			MIL Case	Net Each, 1-4
			Approx. DC		Fil. Amps†	Approx. DC		Fil. Amps†		
			V	mA		V	mA			
80	C	450	240	30	2I	215	38	2.5I	FA	$ 29.12
81	L	500	170	95		160	110			39.62
	C		270	55	3I	245	75	3I	HA	
	L	550	200	85	2#	180	105	2#		
	C		310	50		280	65			
82	L	550	180	145		160	190			42.00
	C		290	90	4I	270	115	4.5I	JB	
	L	600	215	135	2#	190	180	2#		
	C		330	85		315	100			
83	L	600	215	165		200	210			45.41
	C		315	100	5	320	120	6	JA	
	L	670	250	150	2#	230	200	2#		
	C		400	90		380	110			
84	L	700	245	225	5	240	255	6		54.23
	C		390	135	1	375	160	1.5	KA	
	L	750	275	205	3#	270	230	4#		
	C		430	125		410	150			
85	L	700	245	300	6	230	370	6		••
	C		390	190	1.5	355	230	2	LA	
	L	750	270	280	3#	250	350	4#		
	C		425	170		395	210			
86	L	720	270	310	6	250	360	7.5		••
	C		425	180	2	395	225	2	MB	
	L	790	295	300	3#	280	350	4#		
	C		475	160		440	210			
-87	L	730	245	420	6	230	515	6		••
	C		390	275	2	390	300	2	NB	
	L	800	275	400	4#	275	480	6#		
	C		440	250		430	290			
-89	L	850	305	430	8	275	550	10		92.40
	C		460	280	4	445	340	5	OA	
	L	1050	400	400	6#	370	500	6#		
	C		600	260		575	320			
-91	L	900	340	200	5	330	220	6		••
	L	1000	390	190	1	385	195	1.5	KA	
					3#			4#		
-92	L	900	340	265	6	330	310	8		••
	L	1050	400	240	2	395	290	2	MB	
					4#			4#		
-93	L	1000	370	300	8	340	390	10		••
	L	1200	465	265	4	455	350	5	OA	
					6#			6#		
-194§	L	200	170	140		160	155			36.78
	C		275	85	3.5	260	95	4	HA	
	L	235	200	125		190	135			
	C		325	75		310	85			
-195§	L	215	185	285		175	300			••
	C		300	180	5	285	195	6	JA	
	L	265	230	240		220	255			
	C		375	150		360	165			
-196§	L	230	200	445		190	480			54.62
	C		320	280	5	300	300	6	KA	
	L	285	250	380	1.5	240	420	2		
	C		400	235		380	260			
-197§	L	260	230	500		220	550			53.57
	C		360	320	6	340	350	7	MB	
	L	320	280	420	2	270	470	2		
	C		450	260		430	290			
-198‡	..	800	1000	5	1.25 V—.2 A connected to one end of HV winding. 6.3 V—.6 A 5.2 kV rms test voltage.				HA	52.48
	..	1600	2000	5						
	..	2400	3000	5						
110W	L	1050	730	210	......	....	280	......	MB	••
	L	1200	850	190			265			
111W	L	1050	830	350	......	....	420	......	NA	88.19
	L	1200	960	310			380			
112W	L	1500	1230	220	......	....	270	......	NA	96.59
	L	1900	1580	190			230			
-113	L	2500	1050	310	......	....	375	......	•	••
	L	3000	1275	275			330			
-114	L	2500	1050	475	......	....	525	......	▲	••
	L	3000	1265	425			475			
-115	L	3500	1500	275	......	....	375	......	▲	165.55
	L	4400	1900	235			320			
-117	L	5000	2125	950	......	....	1150	......	■	••
	L	6000	2550	850			1050			

•Prices on Request.

HERMETIC AUDIO UNITS



RC-50



RC-25

SM

FH

Designed, manufactured and successfully tested to MIL-T-27C, these compact units have response and level ratings similar to Ouncers* for RC-25 case; Ultra compact units for RC-50 case; to SSO units for SM case. **RC-25 Types:** 1 13/32″ x 61/64″ x 1 7/16″ h. (Wt., 2 oz.). **RC-50 Types:** 1⅝″ x 1⅝″ x 2 5/16″ h. (Wt., 8 oz.). **SM Types:** 11/16″ x ½″ x 2/32″ h. (Wt., 0.8 oz.). **FH Types:** ⅞″ x 23/32″ x 9/16″ h. (Wt., 0.8 oz.).

UTC Type	Application	Impedance Ohms		♦	Ea., 1-4
		Primary	Secondary		
H-1	Line to grid	50, 200 CT, 500 CT	50K	a	$14.53
H-2	Mike to grid	82, 50 mA	135K	a	15.19
H-3	Pl. to grid	15K	60K	a	••
H-4	Pl. to grid	15K, 4 mA	60K	a	••
H-5	Pl. to p-p	15K	95K CT	a	13.62
H-6	Pl. to p-p	15K, 4 mA	95K split	a	16.49
H-7	Pl. to line	20K CT, 4 mA	150/600 split	a	14.97
H-8	Mixing	150/600 split	600 CT	a	14.10
H-9	82/47:1 Input	150/600 split	1 meg.	a	14.53
H-10	10:1 Pl. to grid	10K	1 meg.	a	••
H-11	Inductor: 300 H, 50 H at 3 mA, 6000 ohms			a	••
H-12	Line to p-p	Same as H-1	50K CT	a	16.49
H-13	Tr. Interstage	10K/2.5K split	2K/.5K split	a	14.53
H-14	Tr. Interstage	10K/2.5K split	4K/1K split	a	14.53
H-15	Tr. to line	1.5K CT, 8 mA	500/125 split	a	14.10
H-16	Tr. to V.C.	2K/4K CT, 4 mA	8/16	a	14.10
H-17	Tr. input	600/150 split	2K/500 split	a	13.84
H-18	Tr. interstage	10K CT, 4 mA	500/125 split	a	13.84
H-19A	Input‡‡	250 CT/500 CT	50K/100K CT	b	25.52
H-20	Interstage	15K split	80K split	b	26.71
H-21	Pl. to p-p	15K, 8 mA	80K split	b	••
H-219	Tr. interstage	50K CT, 2 mA	500/125 split	a	••
H-22	Pl. to line	15K, 8 mA	50/200, 125/500	b	••
H-220	Tr. interstage	500/125 split	500/125 split	a	13.22
H-221	Tr. interstage	500/125 split	150/37.5 split	a	13.22
H-222	Split inductor: 60 mH–80 mA, 4 ohms, series; 15 mH–160 mA, 1 ohm, parallel			a	••
H-224	Split inductor: 1 H–20 mA, 60 ohms, series; 0.25 H–40 mA, 15 ohms, parallel			a	••
H-225	Tr. interstage	100/25 split	40/10 split	a	••
H-23	P-p to line	30K split	Same as H-22	b	••
H-24	Inductor: 250 H at 5 mA§§, 65 H at 10 mA!			b	••
H-25	Mixing	500 CT, 20 mA	125/500 split	b	23.33
H-26	Tr. interstage	10K/2.5K split	2K/500 split	b	23.33
H-27	Tr to V.C.	500 CT	16/4 split	b	23.33
H-280	Tr. Driver	200 CT	400/100 split	b	19.32
H-281	Tr. to V.C.**	48 CT	16, 8, 4	b	19.32
H-282	Tr. to V.C.††	20 CT	16, 8, 4	b	22.96
H-283	Mixing/ matching	50, 125/150, 200/250, 333 500/600	Same as Primary	b	32.17
H-284	Split inductor: 4 H–50 mA, 100 ohms, series; 1 H–100 mA, 25 ohms, parallel			b	14.21
H-286	Split inductor; 40 H–15 mA, 1K ohms, series; 10 H–30 mA, 250 ohms, parallel			b	••
H-290	Shld. chopper	2500 e. s.	100K	b	••
H-291	Max. shld. chop.	2000/500 e. s.	312K	c	••
H-295	Shld. chopper	10K/2.5K e. s.	50K	f	••
H-30	Input	50	62,500	d	••
H-31	Pl. to grid	10K	90K	d	••
H-32	Pl. to line	10K, 3 mA	200	d	••
H-33	Output	30K. 1 mA	50	d	••
H-35	Inductor: 100 H, 50 H at 1 mA, 4400 ohms			d	••
H-36	Tr. interstage	25K, 0.5 mA	1K	d	••
H-37A	Tr. output	500 CT, 3.5 mA	50	d	••
H-38	Tr. interstage	10K CT, 2 mA	1.2K CT	d	11.68
H-39	Tr. interstage	10K CT, 2 mA	2K CT	d	••
H-40A	Tr. output	500 CT, 10 mA	600 CT	d	11.68
H-41A	Tr. output	1500 CT, 7 mA	600 CT	d	••
H-42A	Isol./Tr.intstge.	10K CT, 1 mA	10K CT	d	12.99
FHA-5	Tr. input	500/125 spl.	5K/1.25K spl.	e	••
FHA10	Tr. Intstg./Isol.	5K/1.25K spl.	5K/1.25K spl.	e	••
FHA15	Tr. interstage	10K CT/2.5K split	200 CT/50 split	e	15.55
FHA25	Tr. interstage	20K CT/5K spl.	800 CT/200 spl.	e	15.55
FHI-3	Split inductor: 60 mH–32 mA, 6 ohms, series; 15 mH–64 mA, 1.5 ohms, parallel			e	••
FHI-7	Split inductor: 1 H–8 mA, 100 ohms, series; 0.25 H–16 mA, 25 ohms, parallel			e	••
FHI11	Split inductor: 2.4 H–2 mA, 160 ohms, series; 0.6 H–4 mA, 40 ohms, parallel			e	••

*Choke (L), or Condenser (C) input. †All filament windings are 6.3 volts, unless otherwise specified. ‡Highly shielded scope transformer. Secondary not CT. #5 V filament winding. §DC ratings for bridge rectifier circuits. •6″ x 5⅛″ x 6¾″. ▲6¾″ x 6½″ x 8″. ■11″ x 11″ x 14¾″. ICenter tapped. ‡‡Has 75 db shielding. §§6000 ohms. !1500 ohms. **5 watts. ††10 watts. ♦Case: **a**—RC-25. **b**—RC-50. **c**—RC-62. **d**—SM. **e**—FH. **f**—RC-37, 1⅜″ sq. x 1⅝″ h.

FOR "H" SERIES TRANSISTOR AND TUBE FILTER INDUCTORS, SEE A PREVIOUS UTC PAGE

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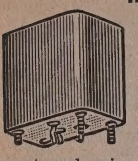
UTC DIV. OF TRW Electric Wave Filters

ALL ELECTRIC WAVE FILTERS DESIGNED, MANUFACTURED & SUCCESSFULLY TESTED TO MIL-F-18327C

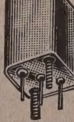
INTERSTAGE AND LINE FILTERS



Designed, manufactured and successfully tested to MIL-F-18327C in compact, shielded case. **Frequency:** Indicated by stock number, in Hz; example, HMI-200 has 200 Hz cut-off. **Size:** 1 3/16″ x 1 11/16″ x 1⅝″ h. (Wt., 6 oz.) except BMI-30, BMI-50, HML's, HMI's, LMI-100 and LML's are 2½″ h. (Wt., 9 oz.). **BMI Types:** Bandpass interstage; operate between tube plate (or 10K ohms) and a grid. Provide gain of 2 at center frequency. **BML Types:** Same, but 500/600 ohms input and gain of 9. **BTI Types:** 10K ohms input and output. **HMI Types:** High pass interstage units. **LMI Types:** Low pass interstage. **HML Types:** High pass with input and output 500/600 ohms. **LML Types:** Low pass with input and output 500/600 ohms. **LLP Types:** Low frequency, 10 Hz low pass; loss more than 40 dB at 20 Hz source and load 100K ohms; size, 2 1/16″ x 2 5/16″ x 3⅛″. (Wt., 1½ lbs.).

UTC Type	Ea., 1-4	UTC Type	Ea., 1-4	UTC Type	Ea., 1-4
BMI-30	$58.77	LMI-150	$55.20	HMI-1000	$55.20
BMI-50	55.28	LMI-200	49.71	HMI-2000	55.20
BMI-60	47.49	LMI-400	49.71	HMI-3000	55.20
BMI-90	55.20	LMI-500	49.71	BML-400	47.49
BMI-100	51.37	LMI-800	49.71	BML-1000	47.99
BMI-120	55.20	LMI-1000	49.71	HML-40	65.99
BMI-150	55.20	LMI-1500	49.71	HML-200	61.59
BMI-200	47.49	LMI-2000	49.71	HML-300	61.59
BMI-240	47.49	LMI-2500	49.71	HML-500	63.78
BMI-300	47.49	LMI-3000	49.71	LML-500	55.20
BMI-400	47.49	LMI-4000	49.07	LML-1000	49.71
BMI-500	47.49	LMI-5000	49.71	LML-1500	55.20
BMI-750	51.52	LMI-10000	49.71	LML-2000	55.20
BMI-800	47.49	BTI-60	57.18	LML-2500	49.71
BMI-1000	47.49	BTI-100	57.18	LML-3000	49.71
BMI-1500	51.52	BTI-120	57.65	LML-4000	49.71
BMI-2000	47.49	HMI-50	53.02	LML-8000	49.71
BMI-3000	47.49	HMI-100	53.02	LML-10000	49.71
BMI-4000	49.07	HMI-200	49.70	LML-12000	50.25
BMI-5000	49.07	HMI-300	49.70	LLP-10	94.53
BMI-10000	47.49	HMI-400	55.20	LLP-15	76.51
LMI-50	61.59	HMI-500	49.70		
LMI-100	49.71	HMI-800	55.20		

MINIFILTERS★

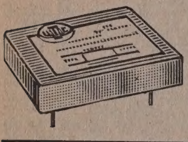


BPM

Provide almost identical operational characteristics as standard units. Extremely miniaturized. Designed, manufactured and successfully tested to MIL-F-18327C. Cutoff frequency indicated by number suffix (in Hz). **Size:** BPH, BPM and LPM-6000 (and up), ¾″ x ¾″ x 1⅛″ h. (Wt., 1 oz.). HPM and LPM (thru 5000), 1″ x 1″ x 1⅜″ h. (Wt., 2¼ oz.). **BPM Types:** Bandpass with gain 2:1. Attenuation, approx. 2 dB, ±3% from center freq.; 35 dB/octave. Input, 10K ohms. Output to grid tapped for 10K ohms in transistor circuitry. Used with tubes, continuity is on grid side; with transistors, continuity is on input side. **BPH Types:** Bandpass units; attenuation less than 3 dB ±5% from center freq.; 40dB/octave. Source and load 500 ohms. **HPM Types:** High pass; down less than 6 dB at cutoff freq.; more than 30 dB at .67 cutoff; 40 dB at .6 cutoff. Input and output, 10K ohms. **LPM Types:** Low pass units. Down less than 6 dB at cutoff freq.; more than 30 dB at 1.5 cutoff; 40 dB at 1.65 cutoff. Input/output 10K.

UTC Type	Ea., 1-4	UTC Type	Ea., 1-4	UTC Type	Ea., 1-4
BPH-50000	$46.84	BPM-2500	$42.00	HPM-4000	$44.09
BPH-100000	42.00	BPM-3000	42.00	LPM-200	44.09
BPM-400	42.00	BPM-3200	46.84	LPM-300	44.01
BPM-440	46.84	BPM-4000	42.00	LPM-500	44.09
BPM-500	42.00	BPM-4800	42.00	LPM-1000	44.09
BPM-600	42.00	BPM-5000	46.84	LPM-1500	44.09
BPM-750	46.84	BPM-6000	46.84	LPM-2000	44.09
BPM-800	42.00	BPM-6400	46.84	LPM-3000	44.09
BPM-1000	42.00	BPM-8000	42.00	LPM-5000	44.09
BPM-1200	42.00	BPM-10000	40.00	LPM-6000	44.09
BPM-1500	42.00	BPM-20000	40.00	LPM-8000	44.09
BPM-1600	42.00	HPM-500	44.09	LPM-10000	44.09
BPM-1800	46.84	HPM-1000	44.09	LPM-15000	44.09
BPM-2000	42.00	HPM-1500	57.97		

FLATS★ FILTERS



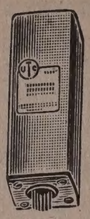
Offer excellent attenuation characteristics in ruggedized package to Grade 4, MIL-F-18327C. Straight pin terminals for printed circuit use. Hermetically-sealed flat metal case is shielded to reduce hum pickup. Low pass filters, unless otherwise mentioned. Source and load, 600 ohms for FLL-Type; all others 10K ohms. **Other Frequencies For High Pass, Low Pass and Bandpass Available on Special Order.**

UTC Type	MIL Type	Size, In.			Wt., Oz.	Min. Atten.		Ea., 1-4
		W.	D.	H.		dB	Above Hz	
FBH-1*	FR6RX22YY1	2	1½	½	2.2	36	500‡ 4000	$79.79
FBH-10*	FR6RX22YY1	1¼	1¼	⅜	1.1	36	5000‡ 40000	77.28
FHH-200†	FR6RX33YY1	2	2	½	2.5	40	140‡	58.87
FLH-600	FR6RX11YY1	2	2	½	2.5	40	800	58.79
FLH-5000	FR6RX11YY1	2	1½	⅜	2.0	43	6400	58.79
FLL-3500	FR6RX11YY1	2	2	½	2.5	40	4500	58.79
FLL-18000	FR6RX11YY1	2	2	½	2.5	43	23000	58.79
FLL-50000	FR6RX11YY1	2	1½	⅜	2.0	43	64000	58.79

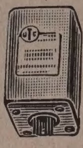
*Bandpass filter. †High pass. ‡Below.

★ALL PRODUCT LINES OR TYPE DESIGNATIONS ARE UTC TRADEMARKS.

TELEGRAPH TONE CHANNEL FILTERS



TGR



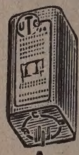
TGT

Bandpass filters for multiplex transmitting and receiving. Units utilize a 7-terminal header, matching a 7-pin subminiature tube socket. **TGR** (receiving) and **TGT** (transmitting) filters are 600 ohms input and output. Down less than 3 dB at ±42.5 Hz from center freq. **TGR** units down more than 30dB at ±170 Hz. Attenuation, greater than 15 dB at adjacent channel crossover. **TGT** units down more than 16 dB at ±170 Hz. Attenuation, greater than 7.5dB at adjacent channel crossover. All units MIL Type FR4RX22YY1. **TGT Size:** 1½″ x 1½″ x 2½″. Weight, 8 oz. Mtg. screws, 6-32. **TGR Size:** 1½″ x 1½″ x 4¼″. Weight, 15 oz. Mtg. screws, 6-32.

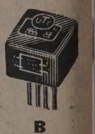
UTC Type TGT-*	Net Each, 1-4	UTC Type TGT-*	Net Each, 1-4	UTC Type TGR-*	Net Each, 1-4	UTC Type TGR-*	Net Each, 1-4
425	$70.99	2125	$46.84	425	$114.76	1955	$83.99
595	70.99	2295	46.84	595	99.54	2125	83.99
765	52.69	2465	46.84	765	103.96	2295	83.99
935	53.85	2635	46.84	935	103.96	2465	80.50
1105	49.77	2805	46.84	1105	89.56	2635	80.50
1275	46.84	2975	46.84	1275	89.56	2805	80.50
1445	46.84	3145	46.84	1445	80.50	2975	80.50
1785	46.84	3315	46.84	1615	80.50	3145	80.50
1955	46.84			1785	80.50	3315	80.50

*Numerical suffix in UTC Type column is center freq. in Hz.

TELEMETERING BANDPASS FILTERS



A



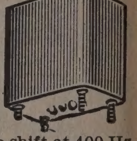
B

Both TMN and TMW types, designed for 100K ohms input and output impedance, with insertion loss of less than 6 dB. Four-pin hermetically sealed header matches small Winchester socket. **TMN Types (Fig. A):** Down less than 3 dB at ±7.5% of center freq.; down more than 18 dB at ±25% of center freq. Attenuation greater than 40 dB beyond 1.75 and .58 center freq. **TMW Types: (Fig. A):** Down less than 3 dB at ±15% of center frequency; down more than 20 dB at ±50% of center frequency. Attenuation, greater than 40 dB beyond 2.5 and .4 center frequency. **MNF, MWF Types (Fig. B):** (Tele-minifilter*) Provide same performance as TMN and TMW types except are extremely miniaturized for use in transistor circuitry. Pin terminals make use with printed circuits practical. **Size:** TMN-.4 thru -1.7, 11/16″ x 1 9/32″ x 2″h. Weight, 3.5 oz. TMN-2.3 thru TMW-70, 23/32″ x 23/32″ x 1⅜″ h. Weight, 1.2 oz. MNF-.4 thru -5.4 (Minifilter), 1 3/16″ x 1 3/16″ x ½″ h. Weight, 1 oz. MNF-7.35 thru MWF-70, 23/32″ x 23/32″ x ½″ h. Weight, ⅓ oz.

Frequency, kHz*	UTC Type	Net Ea., 1-4	UTC Type	Net Ea., 1-4
.4 or .56	TMN-	Prices on Request	MNF-	$58.79
.73 or .96	TMN-		MNF-	58.79
1.3 or 1.7	TMN-		MNF-	58.79
2.3 or 3.0	TMN-		MNF-	58.79
3.9 or 5.4	TMN-		MNF-	58.79
7.35	TMN-		MNF-	65.12
10.5 or 14.5	TMN-		MNF-	62.99
22 or 30	TMN-		MNF-	62.99
40	TMN-		MNF-	62.99
52.5 or 70	TMN-		MNF-	60.00
22†	TMW-		MWF-	62.99
30†	TMW-		MWF-	62.99
40†, 52.5† or 70†	TMW-		MWF-	60.00

*To order, add prefix according to type preferred (UTC Type), to frequency, i.e., TMN-.4, where .4 is freq. in kHz. †±15% bandwidth, all others ±7.5%.

400 Hz 115 V LINE FILTERS



Intended for use on 115 V, 400 Hz line to eliminate harmonic distortion.

UTC No. PLF-25—Gives 150 V output into 500 ohm load within ±1 dB, 375–425 Hz. Will attenuate 800 Hz by 30 dB; 1200 Hz and higher by at least 50 dB. MIL type FR4RX11NB1. Designed, manufactured and successfully tested to MIL-F-18327C. Size, 4 5/16″ w. x 5 1/16″ d. x 5½″ h. Wt., 10 lbs. Ea., 1–4 . . . **$103.96**

UTC No. PLP-13—Eliminates harmonic distortion, rejects 60 and 120 Hz, and gives zero phase shift at 400 Hz. Operating into 1000-ohm load, provides 115 V output at 400 Hz, within ±1 dB, 375–425 Hz. Attenuates 800 Hz by 15 dB; 1200 Hz by 45 dB; above 1200 Hz by at least 35dB; 120 Hz by 20 dB; and, 60 Hz by 30 dB. MIL type FR4RX22LB1; meets MIL-F-18327C specifications. Size, 3 11/16″ w. x 4 5/16″ d. x 4½″ h. Weight, 6½ lbs. Net Each, 1–4 . . . . **$109.20**

LOW FREQUENCY FILTER

Application	Source Kohms	Load Ohms	Terms.		
			*	Com.	†
Bandpass	10	10 K	1	2	3
Bandpass	10	3.3 megs	1	2	4
Band Reject	10	50 K	4	1	3

*Input. †Output.

Has four terminals. Can be used as a bandpass filter or rejector. As a filter, within 3 dB at 9.6 and 10.4 Hz; Attenuation at 5 and 20 Hz is at least 30 dB with 10K ohms load and 35 dB with 3.3 megohms. As a band rejector filter, the unit attenuates 10 Hz by a min. of 30 dB and varies less than 3 dB from DC to 7 Hz, and from 14 Hz to 36 kHz. MIL type FR6RX22FB1. FB case. Weight, 1¼ lbs.

UTC Type LBP-10—Net Each, 1–4 . . . . **$94.53**

SEE LAST TWO PAGES OF UTC LISTING FOR MILITARY INFORMATION

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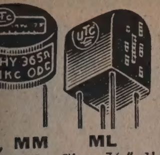
DIV. OF TRW® HIGH "Q" COILS AND INDUCTORS

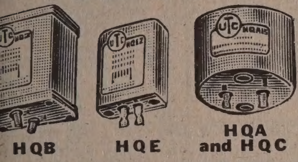
MINIDUCTORS★



Ultraminiature high Q units designed, manufactured and successfully tested to MIL-T-27C, Grade 5; ideal for transistor and printed circuit use. ML types are in Hipermalloy shield case; others are molded permalloy dust toroids. Excellent temperature stability: 1%, −55° C to +100° C. Pin terminals. **Type MM:** Ultraminiature, epoxy molded, toroidal inductors. Max. Q 0 kHz. Size, 7/16" dia. x 1/4". Wt., 0.7 oz. **Type MH:** Same, but . Q at 100 kHz. **Type ML:** Ultraminiature, Hipermalloy cased ictors. Max. Q at 800–2,000 Hz, depending on inductance. , 7/16" x 31/64" x 9/16". Wt., 0.2 oz. **Type MO:** Miniature, molded . Max. Q at 600–1500 Hz, depending on inductance. Size, x 1 1/16". Wt., 1 oz. **Type MW:** Miniature, toroidal, epoxy ded. Max. Q, 5–10 kHz. Size, 23/32" dia. x 13/32". Wt., 0.25 oz.

C pe	Ind., H (0 DC)	Net Ea., 1-4	UTC Type	Ind., H (0 DC)	Net Ea., 1-4	UTC Type	Ind., H (0 DC)	Net Ea., 1-4
-0	.15	$12.59	MM-6	.030	$11.75	MO-2	2	$16.48
-1	.25	12.59	MM-7	.060	12.59	MO-5	5	16.48
-2	.40	12.59	MM-8	.120	12.59	MO-7.5	7.5	16.48
-3	.70	12.59	MH-1	.0006	11.75	MO-20	20	16.48
-4	1.4	12.59	MH-2	.0015	11.75	MO-50	50	17.17
-5	2.5	12.59	MH-3	.0025	12.59	MO-100	100	18.25
-6	4.0	12.59	MH-4	.006	12.59	MW-.05	.05	10.52
-7	6.0	12.59	MH-5	.010	13.00	MW-.10	.10	10.91
-8	10	12.59	MH-6	.015	13.00	MW-.25	.25	10.91
-9	25	13.00	MH-7	.025	13.46	MW-.5	.5	11.87
-10	60	14.72	MH-8	.040	13.46	MW-.75	.75	12.59
M-1	.003	10.91	MO-.1	.1	15.90	MW-1	1.0	13.24
M-2	.005	10.91	MO-.15	.15	15.90	MW-1.2	1.2	13.87
M-3	.008	11.34	MO-.3	.3	15.90	MW-2	2	16.18
M-4	.0125	11.34	MO-.5	.5	15.90	MW-3	3	18.54
M-5	.020	11.75	MO-1	1	15.90	MW-5	5	22.66

HIGH "Q" TOROID INDUCTORS



Excelled only by the "M" series toroids. "HQ" coils are available for applications requiring coils for use in circuitry from 100 Hz to 100 kHz. Coils are adjusted to 1% and inductance is independent of frequency, temperature and vibration. Voltage stability is high and the elding case assures coupling attenuation of 80 dB. All units are igned, manufactured and successfully tested to MIL-T-27C cifications under severe environmental conditions. All units are L Type TF4RX20YY. **Size:** HQA, HQC case, 1 13/16" dia. x " h.; HBQ case, 2 5/8" l. x 1 5/8" w. x 2 5/8" h.; HQE case, 1 1/16" l. x w. x 1 7/32" h. Mounting screws 6-32 except HQE case, 4-40. **tout Size:** HQA, HQC cases, 9/16" x 1 3/16"; HBQ case, 9/16" x 1 1/8"; E case, 5/16" x 1/2". Weight, HQA, HQC cases, 5 oz.; HBQ case, oz.; HQE case, 1.5 oz.

*Millihenries.

TC ype	Induct. (0 DC*)	Max. mADC	Each, 1-4	UTC Type	Induct. (0 DC*)	Max. mADC	Ea., 1-4
QA-1	5	400	$14.53	HQB-3	70	170	●●
QA-2	12.5	260	●●	HQB-4	120	120	●●
QA-3	20	200	15.41	HQB-5	.5 H	60	●●
QA-4	30	160	●●	HQB-6	1 H	41	●●
QA-5	50	130	●●	HQB-7	2 H	30	●●
QA-6	80	100	●●	HQB-8	3.5 H	22	●●
QA-7	125	85	●●	HQB-9	7.5 H	16	●●
QA-8	200	65	●●	HQB-10	12 H	11	●●
QA-9	300	50	●●	HQB-11	18 H	9	●●
QA-10	.5 H	40	●●	HQB-12	25 H	8	●●
QA-11	.75 H	35	●●	HQC-1	1	1350	$25.52
QA-12	1.25 H	26	●●	HQC-2	2.5	850	28.43
QA-13	2 H	20	●●	HQC-3	5	600	●●
QA-14	3 H	16	●●	HQC-4	10	420	●●
QA-15	5 H	13	24.64	HQC-5	20	300	●●
QA-16	7.5 H	10	●●	HQE-1	5	155	●●
QA-17	10 H	9	●●	HQE-2	10	110	●●
QA-18	15 H	8	●●	HQE-3	50	50	●●
QB-1	10	410	●●	HQE-4	100	35	●●
QB-2	30	240	●●	HQE-5	200	25	14.10

LOW FREQUENCY HIGH "Q" COILS

TYPE MQL

Designed, manufactured and successfully tested to MIL-T-27C specifications, all units are MIL Type TF4RX20YY. Inductance values are lab. adjusted to 2% tolerance at 1 V, 60 Hz. Total inductance swing is less than 3.5% from −55° C to +85° C. Two windings brought to four terminals permit series, parallel, center-tapped, or transformer type connections. Case, 1 13/16" dia. x 2 1/2" h. Square mounting, 1 1/2" x 1 1/2", 6-32 screw. Cutout, 1 1/2" dia. Weight, 1 lb.

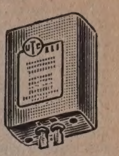
UTC Type	H (0 DC)		Each, 1-4	UTC Type	H (0 DC)		Ea., 1-4
	Series	Parallel			Series	Parallel	
MQL-0	1	.25	●●	MQL-3	200	50	$54.59
MQL-1	10	2.5	$54.59	MQL-4	400	100	●●
MQL-2	20	5	54.59	MQL-5	2500	625	●●

TYPE MQM

imilar to above, MQM types provide exceptional stability. nductance variation less than 2%, −55° C to +130° C. MIL ype TF4SX20YY. Case, 1 5/16" dia. x 1 5/8" h. Cutout, 1" dia. t., 5 oz.

QM-2	2	.5	$28.98	MQM-300	300	75	$30.66
QM-16	16	4	28.98	MQM-600	600	150	●●
QM-40	40	10	28.98				

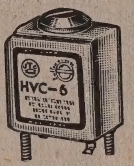
HERMETIC "M" TYPE TOROIDS

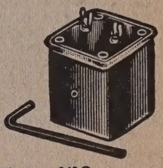


Permalloy dust toroids provide maximum Q. Designed, manufactured and successfully tested to MIL-T-27C and laboratory adjusted to 1% tolerance; excellent voltage and temperature stability. Toroid plus magnetic case equals 80 dB shielding. **MQA Types:** Have Q of 40 at 500 Hz, 160 at 5 kHz, approx. 40 at 20 kHz. Size, 1 1/16" x 1 9/32" x 1 21/32" h., wt., 4 oz. **MQB Types:** Have Q of 40 at 250 Hz, 250 at 3 kHz, approx. 40 at 20 kHz. Size, 1 3/16" x 2 9/16" x 2 13/16" h.; wt., 14 oz. **MQD Types:** Have Q of 40 at 5 kHz, 185 at 50 kHz, approx. 40 at 300 kHz. Size, 1 1/16" x 1 9/32" x 1 21/32" h.; wt., 4 oz. **MQE Types:** Have Q of 20 at 600 Hz, 140 at 10 kHz, approx. 40 at 40 kHz. Size, 1/2" x 1 1/16" x 1 7/32" h.; wt., 1.5 oz. **TQA Types:** Center tapped version of MQA types, see above for specifications.

UTC Type	Ind., H	Ea., 1-4	UTC Type	Ind., H	Ea., 1-4	UTC Type	Ind., H	Ea., 1-4
MQA-1	.007	$12.31	MQB-8	3.5	●●	MQE-12	.90	14.97
MQA-2	.012	12.75	MQB-9	7.5	$32.37	MQE-13	1.5	●●
MQA-3	.020	13.19	MQB-10	12	●●	MQE-14	2.0	●●
MQA-4	.030	14.09	MQB-11	18	●●	MQE-15	2.8	●●
MQA-5	.050	14.53	MQB-12	25	42.12	MQE-16	4.0	●●
MQA-6	.070	14.97	MQB-13	40	●●	TQA-1	.007	●●
MQA-7	.120	15.41	MQB-14	60	●●	TQA-2	.012	●●
MQA-8	.20	15.82	MQD-0	.001	25.08	TQA-3	.020	●●
MQA-9	.30	16.27	MQD-1	.002	●●	TQA-4	.030	●●
MQA-10	.50	16.72	MQD-2	.003	●●	TQA-5	.050	●●
MQA-11	.70	17.19	MQD-3	.005	●●	TQA-6	.070	●●
MQA-12	1.0	17.60	MQD-4	.007	●●	TQA-7	.120	●●
MQA-13	1.5	●●	MQD-5	.012	●●	TQA-8	.20	●●
MQA-14	2.5	●●	MQD-6	.020	●●	TQA-9	.30	●●
MQA-15	4.0	●●	MQD-7	.030	●●	TQA-10	.50	●●
MQA-16	6.0	●●	MQE-0	.004	11.02	TQA-11	.70	●●
MQA-17	10.0	●●	MQE-1	.007	●●	TQA-12	1.0	●●
MQA-18	15.0	●●	MQE-2	.012	11.88	TQA-13	1.5	●●
MQA-19	22.0	●●	MQE-3	.020	12.31	TQA-14	2.5	●●
MQA-20	35.0	●●	MQE-4	.030	12.31	TQA-15	4.0	●●
MQB-1	.010	33.02	MQE-5	.050	12.75	TQA-16	6.0	●●
MQB-2	.030	●●	MQE-6	.070	13.62	TQA-17	10.0	●●
MQB-3	.070	26.92	MQE-7	.100	13.62	TQA-18	15.0	●●
MQB-4	.120	26.92	MQE-8	.150	14.10	TQA-19	22.0	●●
MQB-5	.50	29.80	MQE-9	.250	14.10	TQA-20	35.0	●●
MQB-6	1.0	30.00	MQE-10	.40	14.53			
MQB-7	2.0	30.00	MQE-11	.60	14.53			

VARIDUCTORS★





Ideally suited for use in tuning of oscillator circuits, tuned circuits, etc. **HVC Types:** Designed, manufactured and successfully tested to MIL-T-27C specifications and provide a wide inductance range with high Q in a compact unit. Units are usable over a wide frequency range and have high stability with temperature and voltage fluctuation. TVC inductors are the same as HVC units except they provide taps at 30% and 50% of total turns. Inductance range, −70% to +200% of the mean value through use of adjusting screw on top of case. **VIC Types:** Standard inductors that may be adjusted through use of a set-screw on the side of case. Inductance range, −45% to +85% of the value. **HVV Types:** For precise matching; vernier inductance variation ±10% of nominal value. Offer high Q over a wide frequency range and high temperature stability. **Size:** HVC, TVC and HVV types, 1 1/8" lg. x 25/32" w. x 1 9/32" h.; weight, 2 oz. VIC type, 1 11/32" lg. x 1 1/4" w. x 1 7/16" h.; weight, 5 1/2 oz. HVC and TVC, U.S. Pat. No. 2,879,489; HVV, Pat. pending.

UTC Type	Mean H	mA DC	Ea., 1-4	UTC Type	Mean H	mA DC	Ea., 1-4
HVC-1	.006	100	$13.87	TVC-6	.6	15	$17.86
HVC-2	.015	60	13.87	TVC-7	1.5	10	17.66
HVC-3	.040	40	13.87	TVC-8	4	7	17.66
HVC-4	.1	30	13.87	TVC-9	10	5	17.66
HVC-5	.25	20	13.87	TVC-10	25	3.5	●●
HVC-6	.6	15	13.87	TVC-11	60	2	●●
HVC-7	1.5	10	14.72	TVC-12	150	1.5	●●
HVC-8	4	7	14.72	VIC-1	.0085	75	10.91
HVC-9	10	5	14.72	VIC-2	.013	60	10.91
HVC-10	25	3.5	15.13	VIC-3	.021	50	10.91
HVC-11	60	2	16.40	VIC-4	.034	40	10.91
HVC-12	150	1.5	18.05	VIC-5	.053	35	10.91
HVV-.006	.006	200	18.05	VIC-6	.084	30	10.91
HVV-.015	.015	120	18.05	VIC-7	.13	25	10.91
HVV-.04	.04	80	18.05	VIC-8	.21	21	11.34
HVV-.1	.10	50	18.05	VIC-9	.34	18	11.34
HVV-.25	.25	30	18.05	VIC-10	.54	15	11.34
HVV-.6	.6	20	18.05	VIC-11	.85	12	11.34
HVV-1.5	1.5	13	19.73	VIC-12	1.3	10	11.75
HVV-4	4	6	19.73	VIC-13	2.2	8	11.75
HVV-10	10	4.5	19.73	VIC-14	3.4	7	11.75
HVV-25	25	3	19.73	VIC-15	5.4	6	12.18
HVV-60	60	2	21.86	VIC-16	8.5	5	12.18
HVV-150	150	1.3	23.93	VIC-17	13	4	12.18
TVC-1	.006	100	17.86	VIC-18	21	3.5	12.59
TVC-2	.015	60	17.86	VIC-19	33	3	12.59
TVC-3	.040	40	17.86	VIC-20	52	2	●●
TVC-4	.1	30	17.86	VIC-21	83	1.5	●●
TVC-5	.25	20	17.86	VIC-22	130	1	●●

★UTC TRADEMARK. ALL PRODUCT LINES OR TYPE DESIGNATIONS ARE UTC TRADEMARKS.
●●PRICES ON REQUEST

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UTC DIV. OF TRW Transformers

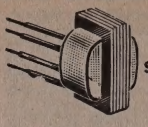
MINIATURE, HERMETICALLY SEALED AND PRINTED CIRCUIT TYPE AUDIO TRANSFORMERS

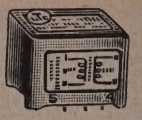
SUB-SUBOUNCERS★ AND SUBOUNCERS★

Miniatured nickel-iron core units for use in vacuum tube and transistorized circuitry. Units are vacuum sealed for highest dependability. Windings are wound on high-quality nylon bobbins; plastic insulated leads, 4″ l., color coded. No mounting facilities are provided. Units may be used for impedances other than those indicated, keeping in mind that the impedance ratio is constant. Units may be reversed, input to secondary. Subouncer units handle a higher level than Sub-Subouncers. Constructional details are identical. Available hermetically sealed on special order. **SSO Sub-Subouncers:** Approx. 2 dB, 140–10,000 Hz. Size: 15⁄32″ w. x 11⁄16″ d. x 15⁄32″ h. Weight, .02 lb. **SO Subouncers:** Approx. 2 dB, 100–10,000 Hz. Size: 15⁄16″ w. x 3⁄4″ d. x 5⁄8″ h. Weight, .03 lb.

UTC SSO-	Ea., 1-4	Application	Pri. Imp., Ohms	Sec. Imp., Ohms	UTC SO-	Ea., 1-4
1	$8.37	Input	50/200	62.5K/250K	1	$7.44
2	8.37	Interstage	10K, .25 mA	90K	2	7.31
3	7.97	Pl. to line	10K/25K*	200/500	3	6.57
4	7.44	Output	30K, 1 mA	50	4	7.01
5	6.39	Inductor	50 H at 1 mA	4400 ohms#	5‡	5.36
6	7.44	Output	100K, .5 mA	60	6	7.85
7	6.20	Tr. intrstg.	20K/30K†	800/1200	7	5.77
8	6.93	Tr. intrstg.	10K, 1 mA	2K CT	8	6.59
9	6.20	Tr. to V.C.	10K, 2 mA	16	....	.....
....	.....	Tr. to V.C.	500 CT	3.2	9	5.77
10	6.20	Tr. to V.C.	10K, 2 mA	3.2	....	.....
....	.....	Tr to V.C.	2K/4K CT	8/16	10	5.58
11	5.58	Tr. output	500/600§	50/60	....	.....
....	.....	Tr. intrstg.	400/500 CT	400/500 split	11	6.39
12	5.58	Tr. output	1K/1.2K♦	50/60	....	.....
....	.....	Tr. intrstg.	400/500 CT	120/150 split	12	6.39
13	7.31	Input	200K	1K	....	.....
....	.....	Tr. intrstg.	400/500 CT	40/50 split	13	6.26
14	7.01	Tr. intrstg.	10K/25K CT	200/500 CT	....	.....
....	.....	Tr. intrstg.	80/100 CT	32/40 split	14	6.26
15	7.21	Tr. intrstg.	20K/30K CT	.8/1.2K CT	....	.....
....	.....	Tr. output	600 CT, 6 mA	600 split	15	6.39
16	5.36	Tr. output	1.2K/1.5K♦	3.2/4	....	.....
....	.....	Tr. intrstg.	2.5K CT, 4 mA	2500 split	16	6.81
17	6.16	Output	10K/12K■	500/600 CT	....	.....
....	.....	Inductor: 16 H at 2 mA, 1.1K ohms, series; 4 H at 4 mA, 275 ohms, parallel			17	5.98
18	6.20	Output	7.5K/9.4K CT	3.2/4		
....	.....	Tr. output	50 KCT	600 split	18	••
19	6.05	Matching	500 CT, 10 mA	600 CT	....	.....
20	6.05	Output	1.5K CT, 7 mA	600 CT	....	.....
21	8.44	Chopper	200K CT	1K CT	....	.....
22	7.31	Tr. intrstg.	10K/12K CT	1.5K/1.8K CT	....	.....
23	4.75	Inductor: 4 H at 5 mA, 650 ohms			....	.....
24	4.95	Inductor: 1.5 H at 5 mA, 160 ohms			....	.....
25	7.85	Tr. intrstg.	10K/12K CT	10K/12K CT	....	.....
26	8.03	Tr. intrstg.	40K/50K CT	400/500 split	....	.....
27	8.03	Tr. output	4K CT, 2.5 mA	600 split	....	.....
CH	.41	Mounting channel for any of above			CH	.41
....	.....	....	8/16 split	250/500 split	19	••
....	.....	....	600 split	10K CT	20	••
....	.....	....	10K/12K CT	10K/12K split	21	••
28	••	....	48/12 split	48/12 split	....	.....
			100/25 split	100/25 split		
29	••	....	12.8/3.2 split	500/125 split	....	.....
			16/4 split	600/150 split		
30	••	....	50/12 split	500/125 split	....	.....
			60/15 split	600/150 split		
31	••	....	500/125 split	600/125 split	....	.....
32▲	••	....	500/600 CT	500/600 CT	....	.....
33	••	....	600/150 split	600 CT	....	.....
34	••	....	200/50 split	1K/250 split	....	.....
			240/60 split	1.2K/300 split	....	.....
35	••	....	600/150 split	2K/500 split	....	.....
36	••	....	12.8/3.2 split	4K/1K split	....	.....
			16/4 split	4K/1250 split	....	.....
37	••	....	600/150 split	8K CT	....	.....
38	••	....	12.8/3.2 split	8K/2K split	....	.....
			16/4 split	10K/2.5K spl.	....	.....
39	••	....	200/50 split	10K/2.5K spl.	....	.....
			500/125 split	25K/6.25K split	....	.....
40	••	....	500/125 split	10K/2.5K spl.	....	.....
			600/150 split	12K/3K split		
41	••	....	10K/2.5K spl.	10K/2.5K spl.	....	.....
			12K/3K split	12K/3K split		
42	••	....	800/200 split	20K/5K split	....	.....
			1200/300 split	30K/7.5K spl.		
43	••	....	400/100 split	40K/10K split	....	.....
			500/125 split	50K/25K split		
44	••	....	100/25 split	100K CT	....	.....
			200/50 split	200K CT		
45	••	....	1K/250 split	200K CT	....	.....
CH	.41	Mounting channel for any of above			CH	.41

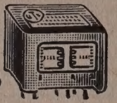
*1.5 mA. †0.5 mA. ‡Resis., 2675 ohms. §3.5 mA. #DC resis. ▲Center tapped hybrid. ■2 mA. ♦3 mA.

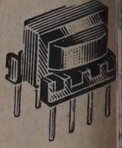

SO


SO-P

SML

SSO


SSO -P


PC-SO, PC-SSO

HERMETICALLY SEALED TYPE

Ideal miniaturized components offer high efficiency and wide frequency response. Special nickel-iron core materials and winding methods assure exceptional performance and reliability. These units are vacuum molded to MIL Grade 5. Employ 40 mil, deeply anchored pin terminals ideally suited for printed circuit and transistor applications. Terminals are strong enough to support these light weight units.

SUBOUNCER★ PRINTED CIRCUIT MOLDED TO MIL GRADE 5

Size: 3⁄4″ x 1″ x 23⁄32″. Pin length, 1⁄4″. Weight, .05 lb.

UTC Type	Application	MIL Type	Imped., Ohms		Ea., 1-4
			Primary	Second.	
SO-2P	Interstage, 3:1	TF5RX15ZZ	10K	90K	$10.93
SO-3P	Plate to line	TF5RX13ZZ	10K 25K	200 500	10.71
SO-5P	Inductor: 40 H at 1 mA, 2675 ohms, series; 5 H at 4 mA, 670 ohms, parallel; TF5RX20ZZ				10.31
SO-7P	Transistor interstage	TF5RX13ZZ	20K 30K	800 1200	9.72
SO-8P	Tr. to p-p sec.	TF5RX13ZZ	10K	2000 CT	11.12
SO-9P	P-p tr. to V.C.	TF5RX17ZZ	500 CT	3.2	10.71
SO-14P	Transistor interstage	TF5RX17ZZ	80 CT 100 CT	32 spl. 40 spl.	11.34
SO-15P	Tr. output	TF5RX17ZZ	600 CT	600 spl.	11.34
SO-17P	Inductor: 16 H at 2 mA, 1.1K ohms, series; 4 H at 4 mA, 275 ohms, parallel; TF5RX17ZZ				10.31
SO-18P	Tr. output	TF5RX13ZZ	500 KCT	600 spl.	••

SUB-SUBOUNCER★ PRINTED CIRCUIT MOLDED TYPES TO MIL GRADE 5

Size: 3⁄4″ x 7⁄8″ x 9⁄16″. Pin length, 1⁄4″. Weight, .04 lb.

UTC Type	Application	MIL Type	Imped., Ohms		Ea., 1-4
			Primary	Second.	
SSO-3P	Plate to line	TF5RX13ZZ	10K 25K	200 500	12.41
SSO-5P	Inductor: 100 H at 0 mA, 4.4K ohms, series; 25 H at 0 mA, 1.1K ohms, parallel; TF5RX20ZZ				11.53
SSO-8P	Tr. to p-p sec.	TF5RX13ZZ	10K	2000 CT	11.95
SSO-14P	Transistor interstage	TF5RX13ZZ	10K CT 25K CT	200 CT 500 CT	12.17
SSO-15P	Transistor interstage	TF5RX13ZZ	20K CT 30K CT	800 CT 1200 CT	12.17
SSO-19P	Outp. matching	TF5RX17ZZ	500 CT	600 CT	11.34
SSO-20P	Output	TF5RX17ZZ	1.5K CT	600 CT	11.34
SSO-21P	Crys./chopper	TF5RX16ZZ	200K CT	1000 CT	12.97
SSO-22P	Interstage	TF5RX13ZZ	10K CT 12K CT	1500 CT 1800 CT	11.75
SSO-23P	Inductor: 8 H at 2 mA, 600 ohms, series; 2 H at 4 mA, 150 ohms, parallel; TF5RX20ZZ				11.34
SSO-24P	Inductor: 3.5 H at 2 mA, 160 ohms, series; 0.9 H at 4 mA, 40 ohms, parallel; TF5RX20ZZ				11.34
SSO-25P	Transistor interstage	TF5RX13ZZ	10K CT	10K/ 2.5K spl.	12.34
SSO-27P	Transistor Output or Driver	TF5RX13ZZ	4K CT	600 spl.	12.75

HIPERMALLOY★ SHIELD CASE AUDIO UNIT

Ultra-miniature transformer provides high shielding, extremely low insertion loss with wide band response, 200–20,000 Hz. Provided with pin terminals .025″ dia., strong enough to support the unit. Ideal for printed circuits. Size: 7⁄16″ x 31⁄64″ x 9⁄16″. Wt., .2 oz.

UTC Type	Application	MIL Type	Imped., Ohms		Ea., 1-4
			Primary	Second.	
SML-70	Input or chopper	TF5RX16ZZ	200K	1K	25.20

••Prices on Request.

PRINTED CIRCUIT SUBOUNCERS AND PRINTED CIRCUIT SUB-SUBOUNCERS

Printed circuit version of UTC Type SO and UTC Type SSO (i.e., PC-SO-1 = SO-1; PC-SSO-1 = SSO-1). Same performance, but easily mountable on printed circuit boards. Terminal arrangements permit the connection of series or parallel windings by bridging over adjacent terminals. Split types eliminate unwanted crossovers on printed circuit boards. **PC-SO Size:** 3⁄4″ w. x 11⁄16″ d. x 31⁄32″ h. Pins spaced, .200″. Pin dia., .040″. **PC-SSO Size:** 3⁄4″ w. x 9⁄16″ d. x 1⁄2″ h. Pins spaced, .200″. Pin dia., .040″.

UTC Type PC-	Ea., 1-4	UTC Type PC-	Ea., 1-4	UTC Type PC-	Ea., 1-4	UTC Type PC-	Ea., 1-4
SO-1	$6.29	SO-7	$4.66	SO-13	$5.14	SSO-1	$7.28
SO-2	6.13	SO-8	5.35	SO-14	5.14	SSO-2	7.28
SO-3	5.41	SO-9	4.66	SO-15	5.24	SSO-3	6.82
SO-4	5.88	SO-10	4.44	SO-16	5.62	SSO-4	6.26
SO-5	4.21	SO-11	5.24	SO-17	4.86	SSO-5	5.33
SO-6	6.65	SO-12	5.24	SO-18	6.96	SSO-6	6.26

UTC Type PC-	Ea., 1-4	UTC Type PC-	Ea., 1-4	UTC Type PC-	Ea., 1-4	UTC Type PC-	Ea., 1-4
SSO-7	$5.14	SSO-13	$6.16	SSO-19	$4.95	SSO-25	$6.65
SSO-8	5.77	SSO-14	5.88	SSO-20	4.95	SSO-26	6.86
SSO-9	5.14	SSO-15	6.07	SSO-21	7.28	SSO-27	6.86
SSO-10	5.14	SSO-16	6.16	SSO-22	6.16		
SSO-11	4.48	SSO-17	5.14	SSO-23	4.52		
SSO-12	4.48	SSO-18	5.14	SSO-24	4.75		

★UTC trademark.

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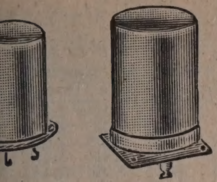
DIV. OF TRW COMMERCIAL TRANSFORMERS

TRANSISTOR TRANSFORMERS (COMMERCIAL TYPE)

TRANSISTOR/FILAMENT SUPPLY TRANSFORMERS


CG Types

FT Type

Primary, 115 VAC, 50/60 Hz

UTC Type	Sec. Volts rms	Sec. Amps rms	Sections in Parallel: Choke Inp. VDC	Choke Inp. ADC	Cond. Inp. VDC	Cond. Inp. ADC	Sections in Series: Choke Inp. VDC	Choke Inp. ADC	Cond. Inp. VDC	Cond. Inp. ADC	Net Ea., 1-4
CG-30*	17/21.5 17/21.5	1.5 1.5	14/17.5	3	18.5/25	2	28/35	1.5	43/56	1	••
CG-31†	34/43 34/43	4.5 4.5	28/35	9	43/56	6	56/70	4.5	85/110	3	••
CG-32‡	6.3 CT	1.2	......	....	......	....	....	....	......	....	••

Case Nos.: *RC-112; †RC-175; ‡RC-62. **(See another UTC page for case sizes.)**

Primary, 115 VAC, 50/60 Hz Bridge Rectifiers

C Type S-77, S-78 and S-79 tapped for dual secondary volts. **another UTC page for case sizes.**

TC ype	Volts DC	Amps DC	Case No.	Net Ea., 1-4
-75	5.2/14	1.2/.4	G-1	**$15.61**
-76	10/26	4/1.4	G-4	**22.61**
-77	14/56	3/1	G-5	**28.57**
-78	28/110	9/3	G-9	••
-79	32/120	3/1	G-7	••

CHANNEL FRAME TYPE

nary, 115 VAC, 50/60 Hz. Test V rms, 1500.

TC ype	Secondary VCT	Secondary Amps	Size, Inches: W.	D.	H.	Mtg.	Wt., Lbs.	Each, 1-4
1	2.5	3	2 7/8	1 5/8	1 11/16	2 3/8	3/4	**$8.61**
2	6.3	1.2	2 7/8	1 5/8	1 11/16	2 3/8	3/4	**7.62**
3	2.5	6	3 5/16	1 7/8	2	2 13/16	1	••
4	6.3	3	3 5/16	1 7/8	2	2 13/16	1	**8.78**
5	2.5	10	3 3/4	2 1/8	2 5/16	3 1/8	1 1/2	••
6	5	3	3 3/4	2 1/8	2 5/16	3 1/8	1 1/2	**9.61**
7	7.5	3	3 3/4	2 1/8	2 5/16	3 1/8	1 1/2	**10.01**
8	6.3	8	4	2 1/2	2 5/8	3 9/16	2 1/2	**11.21**
10*	24	2	4	2 5/8	2 11/16	3 9/16	2 1/2	**12.89**
11†	24	1	3 3/4	2 1/8	2 5/16	3 1/8	1 1/2	**11.19**
12‡	36	1.3	4	2 5/8	2 5/8	3 9/16	2 1/2	**13.46**
13§	26	.04	2 1/8	1 3/8	1 1/4	1 3/4	1/4	**11.02**
14§	26	.25	2 7/8	1 5/8	1 11/16	2 3/8	3/4	**10.39**
15§	48	1	4	2 1/2	2 5/8	3 9/16	2 1/2	**15.32**
16§ #	11	2.5	3 3/4	2 1/8	2 5/16	3 1/8	1 1/2	**14.01**

12 V, 4 amps sec. †Or 12 V, 2 amps sec. ‡Or 18 V, 2.6 amps sec. ps on primary to modify sec. nom. voltage −6%, +6% and 2%. #Or 5.5 V, 5 amps sec.; for 120 V input, use 6% tap.

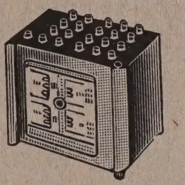
Primary, 105/115/210/220/230 VAC, 50/60 Hz

are as above, except Type CG-34, 105/115/220/230 VAC. ese transformers may be operated on 25 to 43 Hz if 220 V nary is utilized on 110 V; simultaneously the secondary voltage is reduced by half. **See another UTC page for complete listing of CG Series types and case dimensions.**

UTC Type	Secondary VCT	Secondary Amps	WVDC	Sec. Test V rms	Case No.	Each, 1-4
CG-33	6.3	4	500	2000	RC-75	••
CG-34	2.5	10	2500	6000	RC-112	••
CG-35	6.3	6	500	2000	RC-87	••
CG-36	6.3/6.3	5/5	500	2000	RC-100	••
CG-120	2.5	10	5000	11000	RC-125	••
CG-121	5	25	5000	11000	RC-150	**$48.08**
CG-122	7.5/6.3	10	1500	4000	RC-125	••
CG-124	10	10	1500	4000	RC-150	••
CG-125	14/12/11	10	1500	4000	RC-150	••
CG-126	14/11/10 14/11/10	10 10	1500	4000	RC-152	**66.70**

••Prices on Request.

LAB★ CIRCUIT DEVELOPMENT TRANSISTOR TRANSFORMERS



Aid the designer in selecting optimum impedances for best power and distortion results from his transistor circuit.

UTC Type LAB-10—20 Hz to 20 kHz, up to 1 watt continuous. Primary Impedance: 1900 to 14,400 ohms with 20:1 or 10:1 ratio to secondary; 925 to 7600 ohms with 10:1 or 5:1 ratio to secondary. Secondary Impedance: 19 to 36 ohms, and 37 to 76 ohms. Size, 3 1/8" x 2 5/8" x 3 1/4". Weight, 3 lbs. **Price on Request.**

UTC Type LAB-20—20 Hz to 20 kHz, up to 50 watts, continuous. Primary Impedance: 6, 12, 24, 40, 54, 70 and 96 ohms. Secondary Impedance: 4, 8, 16 and 64 ohms. Size, 5 13/16" x 5" x 4 11/16". Wt., 15 lbs. **Price on Request.**

UTC Type LAB-5—20 Hz to 20 kHz, up to 50 mW, continuous. Humbucking balanced core and windings. High electrostatic shielding; multiple magnetic shielding. Primary Impedance: 125, 200 split, 500 split and 2000 split ohms. Secondary Impedance: Same as primary. Size, 3 1/8" x 2 5/8 x 3 1/4". Wt., 3 lbs. **Price on Request.**

MILITARY DESIGNATIONS

MIL-T-27C INDUCTORS AND TRANSFORMERS

TF 4 R X 01 FA

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

MIL-T-21038B PULSE TRANSFORMERS

TP 6 R X 1100 B C

Ⓐ Ⓑ Ⓒ Ⓓ Ⓖ Ⓗ Ⓘ

MIL-F-18327B FILTERS

FR 4 R X 11 YY

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓙ

MIL-F-18327C FILTERS

FR 4 R X 11 YY 1

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓙ Ⓚ

Ⓐ **Component:** TF indicates all MIL-T-27( ) transformers or inductors. TP indicates all MIL-T-21038B pulse transformers. FR indicates filters.

Ⓑ **Grade:** Refers to case material and environmental capability. MIL-T-27C, Grade 4 is metal-cased with max. reliability; resistant to shock, vibration and thermal shock. Grade 5 same as Grade 4 except encapsulated or molded. MIL-T-21038B, Grade 6 same as Grade 4, MIL-T-27C plus use at high altitudes if required. Grade 7 is encapsulated or molded version of Grade 6. MIL-F-18327C, Grade 4 is metal-cased for vibration frequency range 10 to 55 Hz. Grade 5 same as Grade 4 except encapsulated. Grade 6 is metal-cased for vibration frequency range 10 to 2000 Hz. Grade 7 is encapsulated version of Grade 6.

Ⓒ **Class:** Indicative of max. operating temperature (ambient plus temperature rise). R is 105° C. S is 130° C.

Ⓓ **Life Expectancy:** Designers estimate of mean anticipated life. X indicates 10,000 hours life estimated.

Ⓔ **Family:** Two-digit number code-listed in specification, representing each application or category of transformer and inductor. MIL-F-18327B or C, refers to application i.e., 11 is low pass, 22 is band pass and 33 is high pass.

Ⓕ **Case Size and Mounting:** Two-letter code listed in specifications. See table of sizes, below. YY is non-standard metal case. ZZ is encapsulated or molded.

Ⓖ **Turns Ratio:** Four-digit code indicates number of windings and their ratios; e.g., 1110 is 1:1:1.

Ⓗ **Case Style:** Single letter code for fixed case styles; i.e., A for radial leads and C for terminations at one end.

Ⓘ **Case Size:** Single letter code for fixed envelope dimension, as given in individual listings. Z indicates other sizes.

Ⓙ **Case or envelop size and mounting:** Two letters code as given in individual listing. YY indicates non standard metal case. ZZ indicates encapsulated or molded case.

Ⓚ **Composition:** 1 indicates LC, 2 indicates crystal and 3 indicates other electromechanical.

MIL-T-27C CASE SIZES

MIL Case	Size, Inches: Dimension A	B	C	D	E	Mounting Studs
AF	3/4	3/4	1 1/8	Diag.	9/16	4-40 x 3/8
AG	1	1	1 3/8	Diag.	3/4	4-40 x 3/8
AH	1 5/16	1 5/16	1 3/4	Diag.	1 1/4	6-32 x 3/8
AJ	1 5/8	1 5/8	2 3/8	1 3/16	1 3/16	6-32 x 3/8
EA	1 15/16	1 13/16	2 3/4	1 3/8	1 1/4	6-32 x 3/8
EB	1 15/16	1 13/16	2 7/16	1 3/8	1 1/4	6-32 x 3/8
FA	2 5/16	2 1/16	3 1/8	1 11/16	1 7/16	6-32 x 3/8
FB	2 5/16	2 1/16	2 1/2	1 11/16	1 7/16	6-32 x 3/8
GA	2 3/4	2 3/8	3 13/16	2 1/8	1 3/4	6-32 x 3/8
GB	2 3/4	2 3/8	2 13/16	2 1/8	1 3/4	6-32 x 3/8
HA	3 1/16	2 5/8	4 1/4	2 19/64	1 55/64	8-32 x 3/8
HB	3 1/16	2 5/8	3 3/16	2 19/64	1 55/64	8-32 x 3/8
JA	3 9/16	3 1/16	4 7/8	2 5/8	2 1/8	8-32 x 3/8
JB	3 9/16	3 1/16	3 7/8	2 5/8	2 1/8	8-32 x 3/8
KA	3 15/16	3 3/8	5 1/4	3	2 7/16	10-32 x 1/2
KB	3 15/16	3 3/8	4 5/16	3	2 7/16	10-32 x 1/2
LA	4 5/16	3 11/16	5 9/16	3 5/16	2 11/16	10-32 x 1/2
LB	4 5/16	3 11/16	4 1/2	3 5/16	2 11/16	10-32 x 1/2
MA	4 11/16	4	6	3 11/16	3	1/4-20 x 5/8
MB	4 11/16	4	4 15/16	3 11/16	3	1/4-20 x 5/8
NA	5 1/16	4 5/16	6 13/16	4 1/16	3 5/16	1/4-20 x 5/8
NB	5 1/16	4 5/16	5 1/2	4 1/16	3 5/16	1/4-20 x 5/8
OA	5 1/2	4 1/2	6 3/4	3 3/4	3	1/4-20 x 5/8

UTC trademark.

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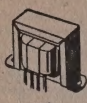
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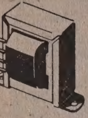
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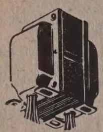
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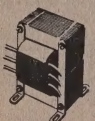
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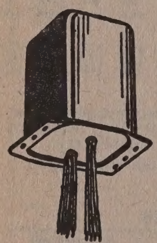

SC

ALL PRICES ARE FOR INDIVIDUALLY BOXED UNITS. CALL US FOR BULK-PACKED QUANTITY PRICES.

SINGLE SECONDARY FILAMENT TRANSFORMERS

All primaries 50/60 Hz; secondary voltages ±3%. Insulation test voltage is twice allowable rms working voltage plus 1000 volts.

Stancor No.	Secondary V	Secondary A	Insul. Test V rms	Pri. V	Termination Pri.	Termination Sec.	Mtg.	Dimensions W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-8628	2.5 CT	0.3	1500	117	Leads	Leads	A	2⅛ x1¼ x1⁵⁄₁₆	$ 2.50	$ 2.25	$ 2.03	$ 1.88
P-8629	2.5 CT	1.0	1500	117	Leads	Leads	A	2⅜ x1⅜ x1⅜	2.58	2.32	2.09	1.94
P-4026	2.5	1.5	2500	117	Leads	Leads	A	2⅞ x1⅝ x1⅝	3.58	3.22	2.90	2.69
P-6133*	2.5 CT	5.0	7500	117	Leads	Leads	S	3⅛ x2¼ x2¾	6.50	5.85	5.27	4.88
P-3024*	2.5 CT	10.0	2500	117/107	Leads	Leads	C	2¾ x2½ x3⅛	8.00	7.20	6.48	6.00
P-6454	2.5 CT	10.0	7500	117/107	Leads	Leads	S	3⅝ x2½ x3⅛	5.75	5.18	4.66	4.31
P-3060	2.5 CT	10.0	10000	117	Lugs	Lugs	NV	2⅜ x2¹³⁄₁₆x3⁷⁄₁₆	10.00	9.00	8.10	7.50
P-3026*	5.0 CT	3.0	2500	117/107	Leads	Leads	C	2⅝ x2½ x3⅛	8.34	7.51	6.76	6.26
P-4088*	5.0 CT	3.0	2500	117	Lugs	Lugs	NV	1⅝ x2½ x3⅛	7.50	6.75	6.08	5.63
P-6467	5.0 CT	3.0	2500	117	Leads	Leads	A	3¼ x2⅛ x2	4.17	3.75	3.38	3.13
P-6455	5.0 CT	6.0	2000	117/107	Leads	Leads	S	3⅛ x2⅛ x2¾	5.75	5.18	4.66	4.31
P-3062*	5.0 CT	6.0	2500	117	Lugs	Lugs	NV	2¼ x2½ x3⅛	6.92	6.23	5.61	5.19
P-5000*	5.0 CT	6.0	2500	117/107	Leads	Leads	C	3 x2½ x3⅛	9.17	8.25	7.43	6.88
P-6135	5.0 CT	10.0	2500	117	Leads	Leads	NV	2¾ x2½ x3⅛	7.75	6.98	6.28	5.81
P-6433*	5.0 CT	15.0	2500	117	Leads	Leads	NV	2¾ x2½ x3⅛	10.00	9.00	8.10	7.50
F-516	5.0 CT	20.0	2500	115/230	Terms	Lugs Terms	SC	4⁷⁄₁₆ x3¹¹⁄₁₆x4¹¹⁄₁₆	34.17	30.75	27.68	25.63
P-6492	5.0 CT	30.0	2500	117	Leads	Leads	C	4 x3¾ x4¹¹⁄₁₆	16.67	15.00	13.50	12.50
P-6468*	5.0 CT	30.0	2500	117/107	Lugs	Lugs	C	3⅞ x3⁷⁄₁₆ x4¼	22.50	20.25	18.23	16.88
P-8385	6.3 CT	0.3	1500	117	Leads	Leads	A	2⅛ x1⅜ x1¼	3.17	2.85	2.57	2.38
P-6465	6.3 CT	0.6	1500	117	Leads	Leads	A	2⅜ x1½ x1⅜	3.08	2.77	2.49	2.31
P-8705	6.3 CT	0.6	1500	230	Leads	Leads	A	2⅜ x1⅜ x1½	2.83	2.55	2.29	2.12
P-8389	6.3	1.0	1500	117	Leads	Leads	A	2⅞ x1½ x1⅝	3.00	2.70	2.43	2.25
P-6134	6.3 CT	1.2	3000	117	Leads	Leads	A	2⅞ x1⅞ x1⅝	3.00	2.70	2.43	2.25
P-8190	6.3	1.2	5000	117	Leads	Leads	A	3¼ x1⅞ x2	4.33	3.90	3.51	3.25
P-8191	6.3	1.2	5000	6.3	Leads	Leads	A	3 ¼ x2 x2	4.58	4.12	3.71	3.44
F-615*	6.3 CT	1.5	2500	115/230	Lugs	Lugs	SC	2¹¹⁄₁₆x2¼ x2¹¹⁄₁₆	15.84	14.26	12.83	11.88
P-5014*	6.3 CT	3.0	2500	117	Lugs	Lugs	NV	2 x2½ x3⅛	6.67	6.00	5.40	5.00
P-6466	6.3 CT	3.0	2500	117	Leads	Leads	A	3¼ x2⅛ x2	4.33	3.90	3.51	3.25
P-6462	6.3	3.0	7000	117/107	Leads	Leads	S	3⅝ x2⅜ x3⅛	6.00	5.40	4.86	4.50
P-4019*	6.3 CT	4.0	2500	117/107	Leads	Leads	C	2¾ x2½ x3⅛	8.08	7.27	6.54	6.06
P-3064*	6.3 CT	6.0	2500	117	Lugs	Lugs	NV	2⅜ x2½ x3⅛	7.92	7.13	6.42	5.94
P-4089	6.3 CT	6.0	2500	117/107	Leads	Leads	C	3¼ x2¹³⁄₁₆x3½	9.67	8.70	7.83	7.25
P-6456	6.3 CT	6.0	2000	117/107	Leads	Leads	A	3¾ x2⅜ x2⅜	6.67	6.00	5.40	5.00
P-6464	6.3 CT	10.0	2000	117	Leads	Leads	C	3¼ x2¹³⁄₁₆x3½	8.67	7.80	7.02	6.50
P-6308*	6.3 CT	10.0	2500	117/107	Leads	Leads	NV	2⅝ x2¹³⁄₁₆x3⁷⁄₁₆	10.84	9.76	8.78	8.13
F-610	6.3 CT	10.0	2500	115/230	Terms	Terms	SC	4 x3¼ x4¼	33.09	29.78	26.80	24.82
P-8189	6.3 CT	20.0	2500	117	Leads	Leads	C	3⅛ x4¼ x3⅞	13.34	12.01	10.81	10.01
P-6309	6.3 CT	20.0	2500	117/107	Leads	Leads	NV	3⅜ x3¾ x4⁹⁄₁₆	14.17	12.75	11.48	10.63
P-5015*	7.5 CT	4.0	2500	117	Lugs	Lugs	NV	2¼ x2½ x3⅛	8.84	7.96	7.16	6.63
P-6138*	7.5 CT	8.0	2500	117	Leads	Leads	NV	2¾ x3⅛ x3¹³⁄₁₆	10.50	9.45	8.51	7.88
P-6457	7.5 CT	21.0	2000	117/107	Leads	Leads	C	4 x3¾ x4⅝	20.50	18.45	16.61	15.38
P-8380	10.0 CT	3.0	1500	117	Leads	Leads	A	3¾ x2¼ x2⅜	5.25	4.73	4.25	3.94
P-5016*	10.0 CT	4.0	2500	117	Lugs	Lugs	NV	2½ x2¹³⁄₁₆x3⁷⁄₁₆	9.17	8.25	7.43	6.88
P-6458	10.0 CT	5.0	2000	117/107	Leads	Leads	NV	2½ x2½ x3¹⁄₁₆	8.34	7.51	6.76	6.26
P-6139*	10.0 CT	8.0	2500	117	Leads	Leads	NV	3 x3⅛ x3¹³⁄₁₆	10.50	9.45	8.51	7.88
P-4097*	10.0 CT	8.0	2500	117/107	Leads	Leads	C	3¾ x3⅛ x3⅞	10.84	9.76	8.78	8.13
P-6461	10.0 CT	10.0	2000	117	Leads	Leads	C	3⁹⁄₁₆ x3¼ x3⅞	12.59	11.33	10.20	9.44
P-8384	12.6 CT	1.0	1500	117	Leads	Leads	A	3¼ x1¾ x2	3.92	3.53	3.18	2.94
P-8130	12.6 CT	2.0	1500	117	Leads	Leads	A	3¼ x2⅛ x2	4.17	3.75	3.38	3.13
P-8715	12.6 CT	2.0	1500	230	Leads	Leads	A	3¼ x2 x2⅛	4.33	3.90	3.51	3.25
P-8358	12.6 CT	3.0	1500	117	Leads	Leads	A	3¾ x2¼ x2⅜	4.67	4.20	3.78	3.50
P-8641	12.6 CT	4.0	1500	117	Leads	Leads	A	4 x2⅜ x2⅝	5.42	4.88	4.39	4.07
P-6469	25.2	1.0	1500	117	Leads	Leads	A	3¼ x2⅛ x2	3.92	3.53	3.18	2.94
P-8707	25.2	1.0	1500	230	Leads	Leads	A	3¼ x2⅛ x2	4.00	3.60	3.24	3.00
P-8180	25.2 CT	1.0	1500	117	Leads	Leads	A	3¼ x2⅛ x2	3.75	3.38	3.04	2.81
P-8357	25.2 CT	2.0	1500	117	Leads	Leads	A	4 x2¼ x2⅝	5.83	5.25	4.72	4.37
P-8388	25.2 CT	2.8	1500	117	Leads	Leads	A	4 x2¼ x2⅝	7.50	6.75	6.08	5.63
P-8608	26.5 CT	.6	2500	117	Leads	Leads	A	3¼ x2⅛ x2	4.17	3.75	3.38	3.13
P-8609	26.8 CT	1.0	1500	117	Leads	Leads	A	3¼ x2⅛ x2	3.83	3.45	3.10	2.87
P-8606	26.0 CT†	.04	2500	117‡	Leads	Leads	A	2⅛ x1⅜ x1¼	6.00	5.40	4.86	4.50
P-8607	26.0 CT†	.25	2500	117‡	Leads	Leads	A	2⅞ x1¾ x1⅝	6.00	5.40	4.86	4.50
P-8605	48.0 CT†	1.0	2500	117§	Leads	Leads	A	4 x2⅜ x2⅝	7.83	7.05	6.34	5.87

*Has electrostatic shield. †Nominal. ‡Primary tapped to provide secondary voltages of 24.5 CT or 27.5 CT or 29 CT. §Primary tapped to provide secondary voltages of 45 CT or 51 CT or 54 CT.

MULTIPLE SECONDARY FILAMENT TRANSFORMERS

Primary 117 V. Insul. test, 2500 V rms, except model P-6434, 1500 V rms. Mtg. "C". Lead terminations.

Stancor No.	Secondary Volts	Secondary Amps	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
P-6428*	6.3, 6.3, 6.3, 6.3†	1.75, 1.75, 1.75, 1.75	3⅛ x 2½ x 3⅛	$ 9.09	$ 8.18	$ 7.36	$ 6.82
P-6430*	6.3†, 6.3†	3.0, 3.0	2⅞ x 2½ x 3⅛	8.75	7.88	7.09	6.56
P-6429*	6.3, 6.3, 6.3, 6.3†	3.5, 3.5, 3.5, 3.5	3½ x 3⅛ x 3⅞	12.34	11.11	10.00	9.26
P-6431*	6.3†, 6.3†	6.0, 6.0	3½ x 3⅛ x 3⅞	14.59	13.13	11.82	10.94
P-6434•	12.6, 12.6†	2.5, 2.5	3¼ x 2¹³⁄₁₆ x 3½	8.34	7.51	6.76	6.26

*Has electrostatic shield. †Center tapped. •Windings may be connected in series or parallel if properly phased.

RECTIFIER TRANSFORMERS

Primary, 117 V, 60 Hz operation.

Stancor No.	Max. Current, mADC Full-Wave CT	Bridge	½-Wave	Mtg. Style	Size, In., W. x D. x H.	Wt., Lbs.	Net Each, Quantities of 1-9	10-24	25-49	50-99
TP-1	1500	900	450	C	3 x 2½ x 3⅛	2.7	$7.92	$7.13	$6.42	$5.94
TP-2	150	100	50	A	2⅞ x 1⅞ x 1⅝	.7	4.33	3.90	3.51	3.25
TP-3	400	300	150	A	3¾ x 2⅛ x 2⅜	1.5	5.33	4.80	4.32	4.00
TP-4	1500	1000	500	C	3⅛ x 2½ x 3⅛	3.2	9.09	8.18	7.36	6.82
TP-5	1100	750	375	A	4 x 2⅜ x 2⅝	2.3	5.42	4.88	4.39	4.07
TP-6	50	35	25	A	2⅜ x 1⁷⁄₁₆ x 1⅜	.45	3.75	3.38	3.04	2.81

POWER TRANSFORMERS FOR CAPACITOR INPUT SYSTEMS

mary 117 V, 60 Hz; PCC and PSC types may be operated at 50 Hz. Meets EIA requirements for ctrical tolerances, dielectric strength, temperature rise and construction. Operating temperature 105° max. All secondary AC voltages ±3%.

ancor No.	Plate Windings AC V	Plate Windings mA DC	Rectifier Filament V	Rectifier Filament A	Other Windings V	Other Windings A	Base Area, Inches	Case Style	Wt., Lbs.	Net Each, Quantities of 1-9	10-24	25-49	50-99
379	115§	290	......	...	2.7/6.3	.45/8.0	3 7/16 x2 13/16	M*	5.7	$16.92	$15.23	$13.71	$12.69
386	117§	300	......	...	6.3	10.0	4 x3¾	C4*	6.9	15.00	13.50	12.15	11.25
146	120-0-120	250	5.0	3.0	....	....	3¼ x3⅛	C	4.2	13.59	12.23	11.01	10.19
-8415	125#	15	......	...	6.3	.6	2⅜ x1⅜	S	.7	3.67	3.30	2.97	2.75
624	125#	15	......	...	12.6	.3	2⅜ x1⅜	S	.7	3.58	3.22	2.90	2.69
-8416	125-0-125	25	......	...	6.3	1.0	2 13/16x1¾	S	1.0	4.33	3.90	3.51	3.25
625	125-0-125	25	......	...	12.6	.5	2 13/16x1¾	S	1.0	4.42	3.98	3.58	3.32
-8421	125#	50	......	...	6.3	2.0	3 11/16x2⅛	A	1.5	5.17	4.65	4.19	3.88
626	125#	50	......	...	12.6	1.0	3 11/16x2⅛	A	1.5	5.17	4.65	4.19	3.88
181	150#	25	......	...	6.3 CT	.5	2⅜ x1 13/16	VE	.8	4.83	4.35	3.91	3.62
627	150#	25	......	...	12.6 CT	.3	2⅜ x1 13/16	VE	.8	4.92	4.43	3.99	3.69
359	190-160-0 160-190	70	......	...	6.3 CT/ 6.3	3.0/.6	2⅝ x2½	C	2.8	10.84	9.76	8.78	8.13
383	200-0-200	110	......	...	6.3/6.3 CT	2.0/4.0	3¼ x2½	C	3.0	11.67	10.50	9.45	8.75
-8417	220-0-220	50	......	...	6.3/25.2	.6/.5	2⅝ x2½	C	2.2	8.75	7.88	7.09	6.56
-8418	230-0-230	50	......	...	6.3	2.5	2⅝ x2½	C	2.2	7.17	6.45	5.81	5.38
-8418	230-0-230	50	......	...	6.3	2.5	3 x2½	M	2.2	7.33	6.60	5.94	5.50
-8401	235-0-235	40	5.0	2.0	6.3 CT	2.0	2⅝ x2½	C	2.2	8.34	7.51	6.76	6.26
-8402	240-0-240	55	5.0	2.0	6.3 CT	2.0	2¾ x2½	C	2.4	8.67	7.80	7.02	6.50
-8419	240-0-240	70	......	...	6.3	3.0	2⅞ x2½	C	2.6	8.08	7.27	6.54	6.06
8173	250-0-250	10	......	...	6.3/6.3	.6/1.2	2⅛ x2⅞	C1	1.0	6.92	6.23	5.61	5.19
-8403	250-0-250	70	5.0	2.0	6.3 CT	2.5	3⅛ x2½	C	3.2	9.34	8.41	7.57	7.01
-8404	260-0-260	90	5.0	2.0	6.3 CT	3.0	3½ x2 13/16	C	4.0	10.34	9.31	8.38	7.76
-8420	260-0-260	90	......	...	6.3	4.0	3¼ x2 13/16	C	3.5	9.17	8.25	7.43	6.88
-8405	270-0-270	120	5.0	3.0	6.3 CT	3.5	3½ x3⅛	C	4.9	11.59	10.43	9.39	8.69
8356	270-0-270	260	5.0	3.0	6.3	8.8	3⅜ x3⅛	C*	6.5	17.50	15.75	14.18	13.13
8377	270-0-270	280	5.0	3.0	6.3	10.0	3 15/16x3⅛	M*	6.7	18.42	16.58	14.92	13.82
8373	280-0-280	280	5.0	3.0	6.3/24.0	10.0/2.6	3¾ x3⅛	M	8.0	22.17	19.95	17.96	16.63
8378	280-0-280 250-0-250	300	5.0/3.0	4.5	6.3/24.0	10.0/1.2	4⅝ x3⅛	C*	7.9	21.75	19.58	17.62	16.31
8355	285-0-285	250	5.0	3.0	6.3	9.5	3½ x3¾	C4*	6.5	19.59	17.63	15.87	14.69
6358	300-0-300	65	......	...	6.3 CT	2.7	2½ x2½	C	3.0	8.34	7.51	6.76	6.26
8175	300-0-300	70	5.0	3.0	6.3 CT	3.0	3⅛ x2⅞	C	4.0	14.75	13.28	11.95	11.06
8177	300-0-300	120	5.0	3.0	6.3 CT	3.0	3⅝ x3 3/16	C	5.8	16.25	14.63	13.16	12.19
C-8406	325-0-325	40	5.0	2.0	6.3 CT	2.0	2¾ x2½	C	2.4	8.59	7.73	6.96	6.44
C-8407	325-0-325	55	5.0	2.0	6.3 CT	2.0	3⅛ x2½	C	3.2	9.59	8.63	7.77	7.19
C-8422	325-0-325	150	5.0	3.0	6.3 CT	5.0	3⅞ x3⅛	C	5.8	14.00	12.60	11.34	10.50
8339	325-0-325	255	5.0	3.0	12.6 CT	5.25	4 x3¾	C	8.5	19.75	17.78	16.00	14.81
C-8408	340-0-340	70	5.0	2.0	6.3 CT	2.5	3⅜ x2 13/16	C	3.8	10.84	9.76	8.78	8.13
6011	350-0-350	70	5.0 CT	3.0	6.3 CT	2.5	3 x2½	M	3.5	12.50	11.25	10.13	9.38
C-8409	350-0-350	90	5.0	2.0	6.3 CT	3.0	3⅝ x2 13/16	C	4.5	11.84	10.66	9.59	8.88
8176	350-0-350	110	5.0	2.0	6.3 CT 6.3 CT	3.0 3.0	3⅞ x3¼	C	5.5	25.84	23.26	20.93	19.38
8345	350-0-350	215	5.0	3.0	6.3/6.3	9.0/1.2	4 9/16 x3¾	M*	11.5	18.34	16.51	14.86	13.76
C-8410	360-0-360	120	5.0	3.0	6.3 CT	3.5	3¾ x3⅛	C	5.5	12.92	11.63	10.47	9.69
6315	370-0-370	275	5.0 CT	3.0	6.3 CT	7.0	4½ x3¾	M	9.3	23.84	21.46	19.31	17.88
C-8411	375-0-375	150	5.0	3.0	6.3 CT	4.5	4 x3 7/16	C	5.8	15.67	14.10	12.69	11.75
C-8412	400-0-400	200	5.0	3.0	6.3 CT	5.0	4 x3¾	C	8.2	17.50	15.75	14.18	13.13
C-8413	400-0-400	250	5.0	4.0	6.3 CT	5.0	4½ x3¾	C	10.0	21.17	19.05	17.15	15.88
C-8414	600-0-600	200	5.0	3.0	6.3/6.3	3.0/3.0	4¼ x3¾	C	8.3	21.00	18.90	17.01	15.75

With copper shorting band to reduce external magnetic field. §For voltage doubler circuits. #For half-ave circuits.

ISOLATION TRANSFORMERS

lectrostatic shields grounded to core.

STRAIGHT ISOLATION

rimary 50/60 Hz; line cord. Secondary, female receptacle, except P-6411, P-6412, P-8622 have lead wires.

Stancor No.	Watts	Voltage Input	Voltage Output	Mtg. Type	Size, Inches W. x D. x H.	Net Each, Quantities of 1-9	10-24	25-49	50-99
-6413	0.6	115	115	A	2⅛ x 1¼ x 1¼	$ 2.83	$ 2.55	$ 2.29	$ 2.12
-6411	15	115	115	A	3¼ x 1⅞ x 2	4.33	3.90	3.51	3.25
-6412	35	115	115	A	2 x 2 x 3	5.50	4.95	4.46	4.13
-6410	50	115	115	C	3⅛ x 2 13/16 x 3½	11.50	10.35	9.32	8.63
-6160*	100	105/115/125	115	C	3¾ x 3¾ x 4 11/16	25.01	22.51	20.26	18.76
-8622	150	115‡/115/230#	115	C	3⅛ x 4 x 3⅞	13.34	12.01	10.81	10.01
-6371	175	117	117	SC	5¼ x 4 9/16 x 5 5/16	33.17	29.85	26.87	24.88
-6161*	250	105/115/125	115	C	5½ x 3¾ x 4 11/16	29.17	26.25	23.63	21.88
-6298*	500	105/115/125	115	FS	7⅛ x 5⅝ x 7⅝	83.35	75.02	67.51	62.51
-6125†	1000	105/115/125	115	FS	7¾ x 5⅝ x 7⅛	133.36	120.02	108.02	100.02
-6123†	1500	104/115/125	115	FS	9 x 5⅝ x 7⅛	206.71	186.04	167.44	155.03

STEP-DOWN ISOLATION

rimary 50/60 Hz; line cord. Secondary, female receptacle. P-6406 has lead wires.

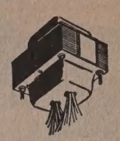
-6406	50	115/230‡§	115	A	3¾ x 2 5/16 x 2⅜	$ 6.08	$ 5.47	$ 4.92	$ 4.56
-6383*	100	210/230/250	115	C	3¾ x 3¾ x 4 11/16	23.67	21.30	19.17	17.75
-6385*	250	210/230/250	115	C	5½ x 3¾ x 4 11/16	32.51	29.26	26.33	24.38
-6387*	500	210/230/250	115	FS	7⅛ x 5⅝ x 7¾	94.19	84.77	76.29	70.64

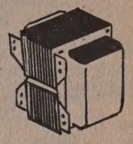
Has primary switch. †Has primary terminals. ‡Has electrostatic shield. §Primary is two separate windings. Secondary is two separate windings.

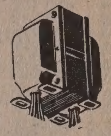
ISOLATION TESTING

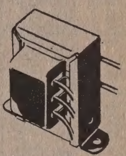
rimary 50/60 Hz, line cord. Secondary, three female receptacles.

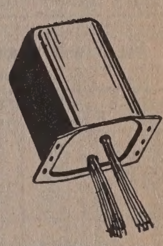
-6415	350	117	105/115/125	C	5 11/16 x 4⅝ x 5⅜	$35.42	$31.88	$28.69	$26.57

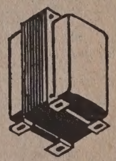


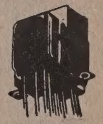












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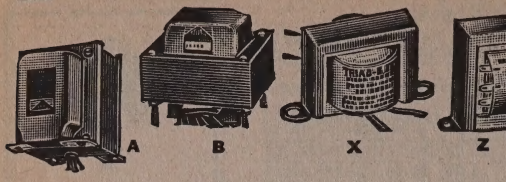
Standard Series Transformers



COMBINED PLATE AND FILAMENT

Primary 115 Volts—60 Hz

"Climatite" treated coils and cores for protection against moisture and for elimination of lamination chatter. Small in size, yet loss is at a minimum. Temperature rise design is 55° C. Copper foil static shields grounded to case and core.

Triad No.	Secondary AC Volts	Secondary mA DC	Rect. Fil. V	Rect. Fil. A	Other Filament Volts	Other Filament A	Wt., Lbs.	Net Each*
R-104A	500 CT	40	...	...	6.3 CT	2	1.55	$ 7.30
R-104B	500 CT	40	...	...	6.3 CT	2	1.55	7.42
R-105A	600 CT	65	...	...	6.3 CT	2.7	2	8.70
R-105B	600 CT	65	...	...	6.3 CT	2.7	2	8.77
R-106A	480 CT	50	5	2	6.3 CT	2	2.1	9.22
R-106B	480 CT	50	5	2	6.3 CT	2	2.1	9.32
R-108A	500 CT	75	5	2	6.3 CT	2.5	2.4	9.65
R-108B	500 CT	75	5	2	6.3 CT	2.5	2.4	9.70
R-109A	600 CT	75	5	2	6.3 CT	3	2.9	9.58
R-109B	600 CT	75	5	2	6.3 CT	3	2.9	9.52
R-110A	525 CT	90	5	2	6.3 CT	5	3.25	11.25
R-110B	525 CT	90	5	2	6.3 CT	5	3.25	11.17
R-111A	700 CT	90	5	3	6.3 CT	3.5	3.25	11.75
R-111B	700 CT	90	5	3	6.3 CT	3.5	3.25	11.67
R-112A	550 CT	110	5	2	6.3 CT	5	3.7	11.77
R-112B	550 CT	110	5	2	6.3 CT	5	3.7	11.68
R-113B	650 CT	40	5	2	6.3 CT	2	2.3	9.88
R-114A	700 CT	125	5	3	6.3 CT	4.5	4.7	13.02
R-114B	700 CT	125	5	3	6.3 CT	4.5	4.7	13.02
R-115A	680 CT	70	5	2	6.3 CT	2.5	3.5	9.18
R-115B	680 CT	70	5	2	6.3 CT	2.5	3.5	9.18
R-116A	700 CT	160	5	3	6.3 CT	5	5.65	14.93
R-116B	700 CT	160	5	3	6.3 CT	5	5.65	15.00
R-118A	750 CT	175	5	3	6.3 CT	8	7.45	16.90
R-118B	750 CT	175	5	3	6.3 CT	8	7.45	16.80
R-120A	700 CT	200	5	3	6.3 CT	8	8.25	18.80
R-121A	800 CT	200	5	3	6.3 CT	6	8.25	19.67

FILAMENT TRANSFORMERS, SINGLE SECONDARY

Primary 115 Volts—50–60 Hz

Triad No.	Secondary Volts	Secondary Amps	Test Volts	Case Size, In. H. x W. x D.	Wt. Lbs.	Net Each*
F-1X§	2.5 CT	3	1500	1⅝ x2 13/16 x1⅝	.68	$ 3.73
F-72Z§	2.5 CT	5	7500	2 23/32 x3⅛ x2⅛	1.7	6.48
F-6X§	2.5 CT	6	2500	1 15/16 x3 5/16 x1¾	1	5.38
F-3X§	2.5 CT	10	3000	2 9/32 x3¾ x2⅛	1.7	6.12
F-5U	2.5 CT	10	7500	3 1/16 x2½ x2 7/16	2.2	7.68
F-71U§	2.5 CT	10	10000	3 7/16 x2 13/16 x2 9/16	2.6	9.27
F-7X	5 CT	3	1500	1 15/16 x3 5/16 x2	1.3	4.42
F-8X	5 CT	6	1500	2 9/32 x3¾ x2⅛	1.7	6.43
F-12X	5 CT	8	2500	2 19/32 x4 x2¼	2.5	7.13
F-9U	5.2 CT	13	1500	3 7/16 x2 13/16 x2 15/16	4	11.87
F-15U§	5 CT	15	3000	3½ x 2⅞ x2 11/16	3.25	13.52
F-10U§	5 CT	14	10000	3 13/16 x3 3/16 x3 1/16	4.75	12.43
F-11U	5.2 CT	24	1500	3 13/16 x3 3/16 x3 7/16	6.75	14.12
F-13X	6.3	.6	1500	1⅜ x2⅜ x1⅜	.37	3.33
R-84K†	6.3	.6	3500	2¾ x2¼ x2 11/16	1.5	11.22
F-14X	6.3 CT	1.2	2500	1⅝ x2 13/16 x1⅝	.7	3.63
F-52X†	6.3	1.2	5000	1 15/16 x3 5/16 x1¾	1	4.78
F-51X†§	6.3/5	2	5000	1 15/16 x3 5/16 x2	1.25	6.10
F-53X	6.3	4	5000	2 19/32 x4 x2¼	2.1	6.00
F-43X§	6.3	4	1500	1 15/16 x3 5/16 x2	1.25	4.97
F-16X	6.3 CT	3	2500	1 15/16 x3 5/16 x2	1.3	4.78
F-18X	6.3 CT	6	1500	2 19/32 x4 x2¼	2.3	7.13
F-18A	6.3 CT	6	1500	3 3/32 x2 21/32 x2⅝	2.5	8.40
F-19X*	6.3/6 CT	6	2000	2 19/32 x4 x2¼	2.3	7.22
F-21A	6.3 CT	10	1500	3½ x2 21/32 x3⅛	3.8	11.55
F-20U*	6.3/6 CT	11	3000	3½ x2⅞ x2 15/16	4	12.37
F-17U§	6.3 CT	15	10000	4¼ x3½ x3 5/16	7.5	16.80
F-22A	6.3 CT	20	2000	3⅞ x3 9/32 x3⅞	7	15.83
F-24U*	7.5/6.3CT	8	3000	3½ x2⅞ x2 13/16	3.65	10.22
F-28U*	7.5/6.3CT	25	3000	4⅝ x3 13/16 x3 7/16	7.5	23.95
F-31X	10 CT	3	2000	2⅜ x3¾ x3⅜	1.6	5.08
F-33U	10 CT	5	2000	2½ x2½ x3 1/16	3.0	9.27
F-23U	10 CT	7	1500	3½ x2⅞ x2 15/16	3.9	10.33
F-35U	10 CT	10	2000	3⅞ x3¼ x3 9/16	5.0	15.27
F-29U*	12/11/ 10 CT	11	3000	4⅜ x3½ x3 1/16	6.5	16.35
F-25X	12.6 CT	1.5	1500	1 15/16 x3 5/16 x2	1.3	4.47
F-44X§	12.6 CT	2	1500	1 15/16 x3 5/16 x2	1.25	4.35
F-26X§	12.6 CT	2.5	1500	2 9/32 x3 11/16 x2	1.55	5.00
F-40X§	26.8 CT	1	1500	1 15/16 x3 5/16 x2	1.3	4.47
F-55X	28.8 CT	1.7	1500	2 19/32 x4 x2¼	2.3	5.67
F-57X	25.2 CT	1	1500	1 15/16 x3 5/16 x2	1.5	4.97
F-41X§	25.2 CT	2	1500	2 19/32 x4 x2¼	2.2	6.00
F-56X	25.2 CT	2.8	1500	2 21/32 x4 x2¼	2.5	8.28
F-50X†‡§	6.3/5	2	5000	1 15/16 x3 5/16 x2	1.2	6.03
F-45X§	24 CT	1	1500	1 15/16 x3 5/16 x2	1.3	4.50
F-54X	35 CT	1.5	1500	2 19/32 x4 x2¼	2.2	6.12
F-58A	50 CT	5	1500	4⅝ x3 15/16 x4½	1.0	21.07
F-59X	60 CT	.4	1500	1 15/16 x3 5/16 x2	1.3	4.37

*Tapped primary to produce lower voltages. †Static shield. ‡Filament line transformer; primary 6.3 V/5 V. §60 Hz operation.

FILAMENT TRANSFORMERS, MULTIPLE SECONDARY

Primary 115 Volts—50–60 Hz

Triad No.	Secondary Volts	Secondary Amps	Test Volts rms	Case Size, In. H. x W. x D.	Wt. Lbs.	Net Each*
F-27U	10 CT 2.5 CT	10 10	1500 7500	4⅜ x 3½ x3 1/16	6.2	$17.98
F-32A	6.3 CT† 6.3 CT†	3 3	1500	3 3/32 x2 21/32 x2⅝	2.5	8.42
F-34A	6.3 CT† 6.3† 6.3† 6.3†	1.75 1.75 1.75 1.75	1500	3 3/32 x2 21/32 x3	3.3	10.15
F-36A	6.3 CT† 6.3† 6.3† 6.3†	3.5 3.5 3.5 3.5	1500	3⅞ x3 9/32 x3¼	5	14.93
F-38A	6.3 CT† 6.3† 6.3 5 CT 5	5 5 1 2 4	1500	3⅞ x3 9/32 x3½	6	14.98
F-42A	12.6 CT† 12.6†	2.5 2.5	1500	3½ x2 21/32 x3⅛	3.7	9.25
F-83A*	12.6 CT† 12.6†	5 5	1500 2500	3⅞ x3 9/32 x3½	6	15.93

*Primary tapped for 105/115/125 volts; 60 Hz operation.
†Windings may be connected in series or in parallel.

PLATE POWER TRANSFORMERS

Static Shield; Primary 115 Volts—60 Hz

Triad No.	Secondary Volts AC§	Secondary Volts DC	Secondary mADC CCS	Secondary mADC ICAS	Rect. Fil.	Wt. Lbs.	Net Each*
P-1A	440/220 CT	180/90	160	192	5V-3A	4	$11.60
P-3A	600/300 CT	250/125	300	360	5V-4A	6.25	14.63
P-5A	1100 CT	400	250	300	5V-4A	8	19.77
P-7A	1235 CT	500	250	300	5V-4A	9	20.78
P-9A	1235 CT	500	500	600	5V-6A	18	39.57
P-11A	1455 CT	600	250	300	......	8.5	19.27
P-213AL	1780 CT*†	750	250	300	......	9.5	28.55
P-14A	1780 CT‡	750/600	250	300	......	13.5	30.38
P-215AL	2340 CT*†	1000	250	300	......	13.5	33.93
P-216AL	2430 CT*†	1000	500	600	......	25	60.98
P-217AL	2880 CT*†	1250	250	300	......	14.8	38.12
P-218AL	2880 CT*†	1250	500	600	......	27.5	68.03
P-220AL	3300 CT*†	1500	350	420	......	24.5	59.60
PR-21AL	3300 CT*†	1500	500	600	......	29	67.15

*Primary, 115/230 VAC. †Plate leads outside of case for rectifiers. ‡Also 1425 VAC CT. §Secondary CT must be grounded.

COMBINED PLATE AND FILAMENT TRANSFORMERS

Static Shield; Primary 115 Volts—50–60 Hz

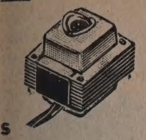
Triad No.	Secondary AC Volts	Secondary mA DC	Rect. Fil. V	Rect. Fil. A	Other Filament Volts	Other Filament A	Wt. Lbs.	Net Each*
R-22A*	380/ 320 CT	70	...	...	6.3 6.3 CT	.6 3	2¾	$10.27
R-22B*	380/ 320 CT	70	...	...	6.3 6.3 CT	.6 3	2¾	10.37
R-4A	500 CT	40	...	...	6.3 CT	2	1¾	8.28
R-4B	500 CT	40	...	...	6.3 CT	2	1¾	8.23
R-5A*	600 CT	65	...	...	6.3 CT	2.7	2¾	9.85
R-5B*	600 CT	65	...	...	6.3 CT	2.7	2¾	9.80
R-6A	480 CT	50	5	2	6.3 CT	2	2¾	10.12
R-6B	480 CT	50	5	2	6.3 CT	2	2¾	10.03
R-7A*	600 CT	50	5	2	6.3 CT	2	2¾	9.85
R-7B*	600 CT	50	5	2	6.3 CT	2	2¾	9.80
R-8A	500 CT	75	5	2	6.3 CT	2.5	3	10.83
R-8B	500 CT	75	5	2	6.3 CT	2.5	3	10.78
R-9A	600 CT	75	5	2	6.3 CT	3	3½	12.43
R-9B	600 CT	75	5	2	6.3 CT	3	3½	12.25
R-10A	525 CT	90	5	2	6.3 CT	5	4½	12.83
R-10B	525 CT	90	5	2	6.3 CT	5	4½	12.63
R-11A	700 CT	90	5	3	6.3 CT	3.5	4¼	13.50
R-11B	700 CT	90	5	3	6.3 CT	3.5	4¼	13.30
R-12A	550 CT	110	5	2	6.3 CT	5	4½	13.42
R-12B	550 CT	110	5	2	6.3 CT	5	4½	13.40
R-14A	700 CT	125	5	3	6.3 CT	4.5	6	16.02
R-14B	700 CT	125	5	3	6.3 CT	4.5	6	15.97
R-16A	700 CT	160	5	3	6.3 CT	5	7	17.38
R-17A	750 CT 80 Tap	160	5	3	6.3 CT 2.5 CT	5 5	7¼	20.02
R-18A	750 CT	175	5	3	6.3 CT	8	8½	17.42
R-18B	750 CT	175	5	3	6.3 CT	8	8½	17.18
R-19A	750 CT 80 Tap	200	5	3	6.3 CT 2.5 CT	6 10	9½	17.77
R-20A	700 CT	200	5	3	6.3 CT	8	9¼	16.22
R-20B	700 CT	200	5	3	6.3 CT	8	9¼	16.05
R-72A*	800 CT	140	5	3	6.3 CT	4	5¾	15.67
R-21A	800 CT	200	5	3	6.3 CT	6	9¼	22.85
R-21B	800 CT	200	5	3	6.3 CT	6	9¼	22.65
R-24A*	800 CT	300	5	6	6.3 CT	6	14	26.78
R-24B*	800 CT	300	5	6	6.3 CT	6	14	26.78
R-25A	800 CT	500	5	6	6.3 CT	7	19	35.78
R-58A	875 CT	185	5	3	6.3 6.3 6.3	3 3 4	9½	19.85
R-71A*	900 CT	250	5	4	6.3 CT 6.3	2 4	12	22.80
R-94H*	180/177	500	6.3	5.5	6.3	5.5	17	28.18

*60 Hz.

Note: Last letter(s) of Triad No. indicates case style. See table on another page for case sizes not listed hereon.

★QUANTITY DISCOUNTS ON REQUEST

Power and Pulse Transformers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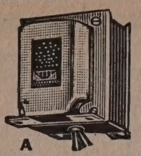
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SPECIAL POWER TRANSFORMERS

ultiple filament industrial and TV replacement type. Static hield. Pri. 115 V, 50–60 Hz except R-66BC thru R-675A, 60 Hz.

Triad No.	Plate Supply AC Volts	Plate Supply mA DC	Filaments Volts-Amps	Size, Inches H. x W. x D.	Net Each*
-37BC	735 CT	275	5-6A., 6.3-8.5A., 6.3/5-2A.*	3⅞ x4½ x3¾	$29.40
-38BC	750 CT	225	5-3A, 6.3-10A, 6.3-2.5A, 6.3-1.2A*	3⅜ x4½ x3¾	22.08
-39BC	640 CT	225	5-3A., 6.3-10A., 6.3-1.2A.*	3⅜ x4½ x3¾	25.48
-40BC	780 CT/ 440 CT	300	5-3A., 5-3A., 5-2A., 6.3-8.5A., 6.3-3.5A.	3⅞ x4½ x3¾	29.98
-42BC	675 CT	185	5-3A., 6.3-7A., 6.3-2A.*	2½ x4½ x3¾	19.40
-49BC	650 CT	240	5-3A., 6.3-9A., 6.3-.9A., 6.3-1.2A.*	3⅝ x4½ x3¾	24.73
-49BS	650 CT	240	As above	3⅝ x4½ x3¾	28.05
-50BC	790 CT/ 650 CT	310	5-3A., 5-2A., 5-3A., 6.3-5A.†, 6.3-5A.† 6.3-2.6A	4⅛ x4½ x3¾	26.57
-50A	790 CT/ 650 CT	310	As above	4⅝ x3$^{15}/_{16}$x5½	28.13
-51BC	505 CT	320	5-6A., 6.3-5A.†, 6.3-5A.†, 6.3-1.2A.*	3⅛ x4½ x3¾	23.95
-52BC	600 CT	270	As above‡	3⅛ x4½ x3¾	18.52
-60BC	460 CT	300	5-6A., 6.3-10A., 6.3-2.5A., 6.3-1.2A.*	3⅜ x4½ x3¾	22.02
-61BC	560 CT	300	5-6A., 6.3-6A.†, 6.3-6A.†, 6.3-1.2A.*	3⅞ x4½ x3¾	24.07
-62BC	680 CT	290	Same as R-60BC	4⅝ x4½ x3¾	30.68
-64BC	520 CT	270	5-3A., 6.3-10A.	2⅝ x4½ x3¾	19.70
-66BC	580 CT	270	5-3A., 6.3-10A.	2⅞ x4½ x3¾	20.07
-67BC	600 CT	250	5-3A., 6.3-9A.	3⅛ x4⅛ x3$^{7}/_{16}$	17.45
-69BC	550 CT	270	5-3A., 6.3-10A.	3⅛ x4⅛ x3$^{7}/_{16}$	22.52
-74BC	680 CT	190	5-3A., 6.3-7.8A., 6.3-1.2A.*	3⅜ x4½ x3¾	19.42
-76BC	650 CT	350	5-6A., 6.3-8A.†, 6.3-5A.†, 6.3-2A.*	3⅞ x4½ x3¾	30.12
-77BC	550 CT	350	5CT-6A., 6.3-8A., 6.3-6A., 6.3-2A.*	3⅜ x4½ x3¾	21.88
-77BS	550 CT	350	Same as above	3⅞ x4½ x3¾	34.25
-78BC	700 CT	200	5-3A., 6.3-6A., 6.3-4A., 6.3-2A.*	2⅝ x4½ x3¾	20.15
-81BC	590 CT	350	5-6A., 6.3-8A., 6.3-5A., 6.3-2A.*	3⅝ x4½ x3¾	26.27
-81BS	590 CT	350	Same as above	3⅝ x4½ x3¾	34.65
-675A	660 CT	270	5-6A., 6.3-9.35A., 6.3-1.2A.*	4⅝ x3$^{15}/_{16}$x4¾	25.85

Damper wdg. †For series or parallel connection. ‡Except 5 V at 3 A.

LOW-VOLTAGE, LOW-CURRENT, PLUG-IN PRINTED CIRCUIT POWER TRANSFORMERS

Primary 115 volts, 50/60 Hz.

Triad No.	Output Watts	Secondary Series Conn.	Secondary Parallel Conn.	Net Each*
F-131P	1½	8 V CT at .188 A	4 V at .376 A	$4.57
F-132P	1½	15 V CT at .100 A	7.5 V at .200 A	4.75
F-133P	1½	30 V CT at .050 A	15 V at .100 A	4.90
F-134P	1½	54 V CT at .028 A	27 V at .056 A	5.18
F-135P	1½	76 V CT at .020 A	38 V at .040 A	5.50
F-136P	1½	116 V CT at .013 A	58 V at .026 A	6.03
F-137P	1½	40 V CT at .038 A	20 V at .076 A	5.35
F-141XP	4½	8 V CT at .562 A	4.0 V at 1.124 A	4.37
F-142XP	4½	15 V CT at .300 A	7.5 V at .600 A	4.47
F-143XP	4½	30 V CT at .150 A	15 V at .300 A	4.63
F-144XP	4½	54 V CT at .084 A	27 V at .168 A	4.73
F-145XP	4½	76 V CT at .060 A	38 V at .120 A	4.82
F-146XP	4½	116 V CT at .033 A	58 V at .066 A	5.20
F-147XP	4½	40 V CT at .112 A	20 V at .224 A	4.95
F-151XP	7½	8 V CT at .940 A	4 V at 1.880 A	4.58
F-152XP	7½	15 V CT at .940 A	7.5 V at 1.000 A	4.73
F-153XP	7½	30 V CT at .250 A	15 V at .500 A	4.82
F-154XP	7½	54 V CT at .140 A	27 V at .280 A	4.85
F-155XP	7½	76 V CT at 1.00 A	38 V at .200 A	4.98
F-156XP	7½	116 V CT at .065 A	58 V at .130 A	5.10
F-157XP	7½	40 V CT at .188 A	20 V at .376 A	5.08

SCR TRIGGER—PHOTOFLASH TRANSFORMERS

Triad No.	Turns Ratio	Inductance Primary	Inductance Leakage	Output Volts or Volt/μsec	Net Each*
PL-10	1:30	2 μH	1 μH	6–8 kV	$1.97
PL-11	1:30	15 μH	1.5 μH	10–12 kV	2.10
PL-20	1:1	200 μH	8 μH	2000 V/μsec	3.60
PL-21	1:1:1	200 μH	8 μH	2000 V/μsec	3.70
PL-22	2:1:1	200 μH	15 μH	2000 V/μsec	4.28
PL-30	1:1:1	7.5 μH	90 μH	130 V/μsec	5.82
PL-31	1:1	7.5 μH	90 μH	130 V/μsec	5.68
PL-32	2:1	7.5 μH	100 μH	130 V/μsec	5.68
PL-33	2:1:1	7.5 μH	100 μH	130 V/μsec	5.82
PL-34	5:1	7.5 μH	115 μH	130 V/μsec	5.68

★QUANTITY DISCOUNTS ON REQUEST

UNIVERSAL RECTIFIER TRANSFORMERS (PRI. 50-60 Hz)

Triad No.	Pri. Volts	Secondary AC Volts	Secondary Amps rms	DC Volts Half Wave	DC Volts Full Wave	Case Size, Inches H. x W. x D.	Net Each*
F-47U	115	17-18	3	6–7	13–14	3⅛ x2$^{9}/_{16}$ x3	$ 9.13
F-48U	115	17-18	6	6–7	13–14	3$^{13}/_{16}$x3$^{3}/_{16}$ x3$^{3}/_{16}$	13.10
F-49U	115	36† 36†	3 3	13 13	26 26	4⅝ x3$^{13}/_{16}$x3¾	21.73
F-60U	115	6.5-13-19.5-26	3	9	18	3½ x2⅞x2$^{11}/_{16}$	8.98
F-61U	115	24-27-30-33-36	3	13	26	3$^{13}/_{16}$x3$^{3}/_{16}$ x3¼	13.67
F-67U‡	110-120	24-27-30-33-36	8	13	26	4⅝ x3$^{13}/_{16}$x4⅜	27.15
F-63U	115	8-9† 8-9†	2 2	.....	6–7 6–7	3⅛ x2$^{9}/_{16}$ x2$^{9}/_{16}$	8.63
F-64U	115	7-8-9	7	.....	5–6–7	3½ x2⅞ x2¾	10.28
F-62U‡	105-115-125	9† 9† 9† 9†	10 10 10 10	.....	7 7 7 7	4⅝ x3$^{13}/_{16}$x5¼	37.53
F-68U‡	115	9 CT† 9† 9† 9†	3.5 3.5 3.5 3.5	.....	7 7 7 7	3$^{13}/_{16}$x3$^{3}/_{16}$ x3$^{5}/_{16}$	13.80
F-65U	110-120	140-150-160	.75	60	115	3$^{13}/_{16}$x3$^{3}/_{16}$x 3⅜	13.35
F-66U	110-120	140-150-160	2.5	60	115	5⅜ x4$^{7}/_{16}$ x5¼	34.62
F-74U	117	28 CT 28 CT	2 2	.....	.....	3$^{13}/_{16}$x3$^{13}/_{16}$x3¼	12.25
F-75U	117	28 CT 28 CT	4 4	.....	.....	4⅛ x3$^{7}/_{16}$ x4⅜	20.48
F-79U‡	115	24-26-28-30	15	11.4	22.8	3$^{13}/_{16}$x4⅝ x5½	39.33
F-80U‡	115*	12-13.5-15-16.5-18† 12-13.5-15-16.5-18†	20 20	.....	13 13	5⅜ x4$^{7}/_{16}$ x5½	66.43
F-86U	115	12 CT	10	.....	.....	3¾ x3⅛ x3½	10.72
F84AC‡	230-115§	12 CT† 12 CT†	10 10	.....	8.5 8.5	4⅝ x3$^{15}/_{16}$x5⅛	30.70
F-85U	115*	5-7.5 5-7.5	20 20	.....	8–12.5	4½ x3¾ x4½	25.82
R94H‡	115	180-117 6.3-6.3	.5-.005 5.5-5.5	Dblr 470		3$^{15}/_{16}$x4⅝ x5½	28.18

*Tapped. †Windings in series or parallel. ‡60 Hz. §Split winding.

UNIVERSAL RECTIFIER POWER

Triad No.	Primary 50/60 Hz	Secondary No. 1 VAC	Secondary ADC CT†	Secondary ADC Bridge	Net Each*
F-200A	117 V	13/18 at .9 ADC*	....	....	$ 8.12
F-202U	117 V	11.0–29.5	2.0	1.25	8.28
F-203U	117 V	12.0–30.0	4.0	2.0	10.40
F-204U	117 V	11.5–29.0	8.0	4.0	15.70
F-205U	117 V	12.0–29.5	12.0	6.0	23.50
F-206U	117 V	12.1–29.2	15.0	8.0	33.43
F-207U	117 V	12.2–29.0	22.5	12.0	49.52

*Sec. No. 2, same. †Full wave.

SOLID STATE RECTIFIER POWER TRANSFORMERS

Pri., 117 V, 50/60 Hz. Fil. 2 and 3 are 6.3 V.

Triad No.	Sec. Volts	DC A	Fil. 2, 3	Net Each*	Triad No.	Sec. Volts	DC A	Fil. 2, 3	Net Each*
R-200A	400 CT	.4	3a	$19.98	R-82B	70 CT	3.5	.....	$18.60
R-201A	300 CT	.6	2.5a	19.77	R-204A	80 CT	2.0	1.5a	18.28
R-202A	200 CT	.8	2a	18.80	R-205A	60 CT	2.5	1.5a	17.52
R-203A	100 CT	1.6	1.5a	17.25	R-206B	54 CT	1.25	.....	13.32

●CASE SIZES FOR TRIAD TRANSFORMERS

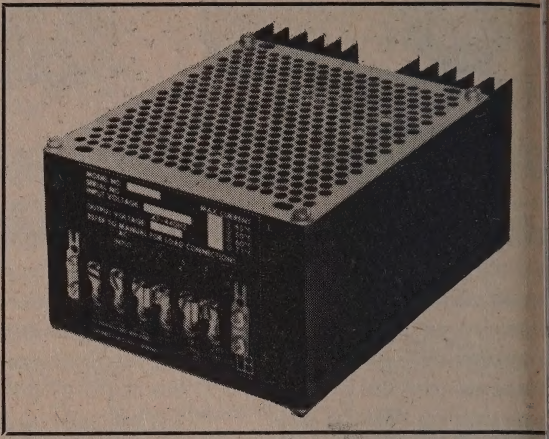
Case Type	A	B	C	D	E	G	I	Weight, Lbs.
AF	$^{51}/_{64}$	$^{51}/_{64}$*	1$^{5}/_{32}$	$^{27}/_{32}$*	......	....	4-40	2½ oz.
AH	1$^{5}/_{16}$	1$^{5}/_{16}$	1¾	1¼	......	⅜	6-32	4 oz.
AJ	1⅝	1⅝	2⅜	1$^{3}/_{16}$	1$^{3}/_{16}$	⅜	6-32	9 oz.
AJ-2	1⅝	1⅝	2⅜	1⅝*	......	....	6-32	11 oz.
AH-2	1$^{5}/_{16}$	1$^{5}/_{16}$	1¾	1$^{11}/_{32}$*	......	....	6-32	5¼ oz.
EA	1$^{13}/_{16}$	1$^{15}/_{16}$	2¾	1⅜	1¼	⅜	6-32	1
EB	1$^{13}/_{16}$	1$^{15}/_{16}$	2$^{7}/_{16}$	1⅜	1¼	⅜	6-32	15 oz.
FA	2$^{1}/_{16}$	2$^{5}/_{16}$	3⅛	1$^{11}/_{16}$	1$^{7}/_{16}$	⅜	6-32	1¾
FB	2$^{1}/_{16}$	2$^{5}/_{16}$	2½	1$^{11}/_{16}$	1$^{7}/_{16}$	⅜	6-32	1½
GA	2⅜	2¾	3$^{13}/_{16}$	2⅛	1¾	⅜	6-32	2
GB	2⅜	2¾	2$^{13}/_{16}$	2⅛	1¾	⅜	6-32	1¾
GP-2*	1$^{1}/_{16}$	1¼	2¼	1$^{3}/_{16}$	......	⅜	6-32	5½ oz.
GP-3*	1¼	1$^{9}/_{16}$	2⅜	1$^{15}/_{32}$	......	⅜	6-32	8 oz.
GP-4*	1$^{7}/_{16}$	1¾	2½	1½	......	⅜	6-32	12 oz.
GP-5*	1⅝	2	2¾	1½	......	⅜	6-32	17 oz.
GP-15*	5⅞	4¾	6⅝	4⅞	3¾	....	....	22
HA	2⅝	3$^{1}/_{16}$	4¼	2$^{19}/_{64}$	1$^{55}/_{64}$	⅜	8-32	2½
HB	2⅝	3$^{1}/_{16}$	3$^{3}/_{16}$	2$^{19}/_{64}$	1$^{55}/_{64}$	⅜	8-32	2¼
JA	3$^{1}/_{16}$	3$^{9}/_{16}$	4⅞	2⅝	2⅛	⅜	8-32	4½
JB	3$^{1}/_{16}$	3$^{9}/_{16}$	3⅞	2⅝	2⅛	⅜	8-32	4
JOA*	$^{15}/_{16}$‡	......	1$^{13}/_{32}$	$^{9}/_{16}$	......	....	....	2 oz.
JOB*	$^{15}/_{16}$‡	......	1$^{25}/_{32}$	$^{9}/_{16}$	......	....	....	2½ oz.
JZ*	$^{9}/_{16}$‡	......	$^{25}/_{32}$	......	......	....	....	.5 oz.
KA	3⅜	3$^{15}/_{16}$	5¼	3	2$^{7}/_{16}$	½	10-32	7¾
KB	3⅜	3$^{15}/_{16}$	4$^{5}/_{16}$	3	2$^{7}/_{16}$	½	10-32	7
LA	3$^{11}/_{16}$	4$^{5}/_{16}$	5$^{9}/_{16}$	3$^{5}/_{16}$	2$^{11}/_{16}$	½	10-32	9¼
MA	4	4$^{11}/_{16}$	6	3$^{11}/_{16}$	3	⅝	¼-20	13½
NB	4$^{5}/_{16}$	5$^{1}/_{16}$	5½	4$^{1}/_{16}$	3$^{5}/_{16}$	⅝	¼-20	16

A—Width. **B**—Overall depth. **C**—Height. **D and E**—Center-to-center mounting studs. **G**—Stud length. **I**—Stud threading. *Not in conformance with MIL specifications. ‡Diameter.

Triad DC Power Supplies

STANDARDIZED DC POWER MODULES FOR OEM SYSTEMS

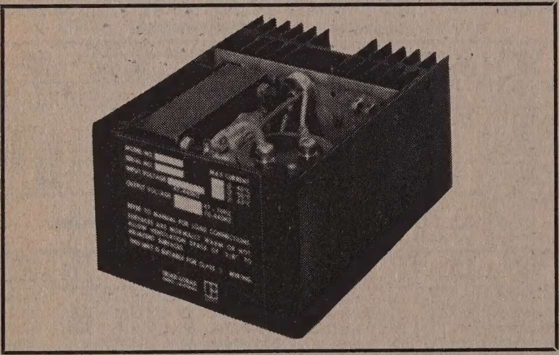
- **5 POPULAR VOLTAGE RANGES**
- **BUILT-IN OVERVOLTAGE PROTECTION**
- **FULL RATED CURRENT TO 45° C**
- **±10% VOLTAGE ADJUSTMENT**
- **SHORT CIRCUIT PROOF**
- **REMOTE SENSING**



Extremely high quality, tightly regulated supplies are suitable for the most exacting applications: Logic IC's, power operational amplifiers, transistor circuitry, commercial and military uses. Recommended where long life, extreme reliability and minimum down-time are important; or, where temperature extremes are encountered. All units use an extruded integral heat sink housing providing over 260 sq. in. cooling area. Feature built-in overvoltage protection; 10-year life computer grade capacitors; all silicon semiconductors; electrostatically shielded transformer to meet MIL-T-27 requirements; FR glass-epoxy PC boards. Guaranteed 5 years. Meet UL and CSA requirements. **Input:** 115 volts (±10%), 47–440 Hz without derating. **Regulation:** 0.04%, +2 mV, line and load (from 0 to full rated load). **Ripple and Noise:** 1 mV rms; 5 mV peak-to-peak max.; less than 1 mV rms at 60 Hz input. **Temperature Range:** −20° C to +71° C, operating. **Temperature Coefficient:** 0.01% typical, 0.02%/° C max. **Remot Sensing:** Standard. **Voltage Adjustment Range:** ±10%. **Pro tections:** SCR crowbar limits maximum output voltage. Auto matic foldback overload protection. Automatic reset thermosta **Cooling:** Convection. **Size:** B-package, 3³⁄₁₆″ x 4¹⁵⁄₁₆″ x 6½″.

Triad Number	Output Voltage	Output Current, Amps at				Overvoltage Protection Trip Point	Net Each, Lots of			
		45° C	50° C	60° C	71° C		1-9	10-24	25-49	50-99
NCB-6	6 V, ±10%	5.1	4.8	4.0	3.0	6.4 V, ±9%	**$98.00**	**$93.00**	**$88.50**	**$84.25**
NCB-12	12 V, ±10%	3.0	2.5	2.2	1.5	14.9 V, ±7%	**98.00**	**93.00**	**88.50**	**84.25**
NCB-15	15 V, ±10%	3.0	2.5	2.2	1.5	17.25 V, ±4%	**98.00**	**93.00**	**88.50**	**84.25**
NCB-24	24 V, ±10%	1.5	1.4	1.3	1.2	29.0 V, ±5%	**98.00**	**93.00**	**88.50**	**84.25**
NCB-28	28 V, ±10%	1.5	1.4	1.3	1.2	33.0 V, ±5%	**98.00**	**93.00**	**88.50**	**84.25**

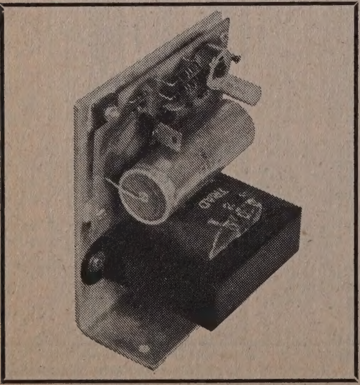
WIDE RANGE ADJUSTABLE, REGULATED 40-WATT POWER SUPPLIES



Low cost power supplies offer wide range adjustment and regulate 40-watt output. Features: Convenient, open top construction extruded integral heat sink housing; all silicon semiconductors 10-year life computer grade capacitors; FR glass epoxy PC boards electrostatically shielded transformers. All units are convectio cooled; have automatic current limiting. Meet UL and CS requirements. Fully guaranteed for 1 year. **Input:** 115 volts ±10%, 47–440 Hz. **Regulation:** ±0.1%, line; ±0.2%, load (50% load change). **Ripple:** 2 mV rms; 6 mV peak-to-peak. **Temperatur Range:** 0° C to +40° C, operating; to +65° C with derating **Temperature Coefficient:** 0.03%/° C typical. **Transient Response** 100 μsec max.; 50 μsec typical. **Life:** 50,000 hours per MIL HDBK-217, mean lifetime before failure. **Grounding:** Floatin output either positive or negative may be grounded. **Size:** Ope frame, 4″ x 4¹⁵⁄₁₆″ x 6½″.

Triad Number	Voltage Range at		Current, Amps at			Net Each, Lots of			
	47–70 Hz	70–440 Hz	40° C	50° C	65° C	1-9	10-24	25-49	50-99
WR-48	4–8 V	4–7 V	5.0	4.0	3.0	**$57.50**	**$54.50**	**$51.75**	**$49.00**
WR-1116	11–16 V	11–15 V	2.5	2.2	1.5	**57.50**	**54.50**	**51.75**	**49.00**
WR-2126	21–26 V	21–25 V	1.5	1.4	1.3	**57.50**	**54.50**	**51.75**	**49.00**
WR-2630	26–30 V	26–30 V	1.4	1.3	1.2	**57.50**	**54.50**	**51.75**	**49.00**

RELIABLE, LOW COST GENERAL PURPOSE SUPPLIES



- **Glass Epoxy Printed Circuit Board**
- **High performance IC regulator**
- **Computer grade filter capacitor**
- **All silicon semiconductors**
- **Foldback current limiting and short circuit protection**
- **Adjustable output**

SPECIFICATIONS

Input: 115 volts ±10%, 60 Hz ±5%.

Regulation: Line, ±0.5%; load, ±0.5%.

Ripple: 5 mV rms or 15 mV p-p max.

Temperature Coefficient: 0.02%/° C.

Grounding: Floating output either pos tive or negative max. may be grounded.

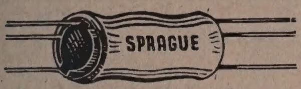
Output Adjustment: ±5%.

Size: 2½″ x 4″ x 4½″.

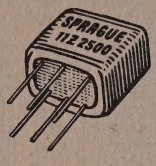
Triad Number	Output Volts	Output Amps		Net Each, Lots of			
		40° C	65° C	1-9	10-24	25-49	50-99
P-543	5	3.0	1.5	**$24.90**	**$23.65**	**$22.45**	**$21.20**
P-546	12	1.5	0.8	**24.90**	**23.65**	**22.45**	**21.20**
P-547	15	1.5	0.8	**24.90**	**23.65**	**22.45**	**21.20**
P-548	24	1.0	0.5	**24.90**	**23.65**	**22.45**	**21.20**

PRAGUE PULSE AND TRIGGER TRANSFORMERS

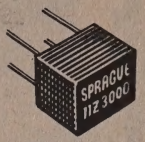
TYPE 11Z TRIGATE® PULSE TRANSFORMERS



Flexible 6-Lead Type



Plug-In, Thermoplastic Sheath



Plug-In, Pre-molded Case

gate pulse transformers are specifically designed for commercial l industrial SCR triggering applications where low cost and ellent performance are required. Unique features offered by se devices include: Balanced pulse characteristics and energy nsfer from the primary to secondary and tertiary windings; nimum saturation effect to allow operation where increased se widths are required; fast pulse rise time and increased current capability to prevent SCR di/dt failure; increased energy transfer efficiency. **Operating Temperature Range:** −10° C to +70° C; transformers for −40° C to +105° C operation are available on request. **Dielectric Test:** 1600 volts rms at 60 Hz. **AC Line Voltage:** 240 volts rms max. at 60 Hz. Choice of flexible lead and printed wiring board designs.

xible Lead 240-VAC Types—Leads are polyurethane-insulated magnet wire for direct soldering to terminals or other circuit comnents without removal of wire insulation. Mount with plastic clip or bracket such as Weckesser Etho-Loc snap clips. Case size, 0.593″ . x 0.828″ lg. with flexible leads 1.500″ lg. min.

prague No.	Turns Ratio	Min. L_P, µH	Max. L_L, µH	Max. C_C, pF	Max. DCR, Ohms	No. of Leads	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1Z12	1:1	200	3	800	1.5–1.5	4	$2.10	$1.65	$1.08	$0.78	$0.72	$0.66
1Z13	1:1:1	200	3	800	2–2–2	6	2.45	1.925	1.26	.91	.84	.77
1Z14	2:1	1000	10	1300	10–2	4	2.975	2.338	1.53	1.105	1.02	.935
1Z15	2:1:1	1000	15	1300	10–2–2	6	3.325	2.613	1.71	1.235	1.14	1.045
1Z16	5:1	5000	1500	400	19–3	4	3.15	2.475	1.62	1.17	1.08	.99

rizontal Plug-In Thermoplastic Sheath 240-VAC Types—Self-supporting, single-ended pulse transformers with leads especially signed for mounting on printed wiring boards. Case size, 0.968″ w. x 0.775″ d. x 0.800″ h. max. with No. 20 AWG pretinned copper e leads 0.250″ lg. min.

prague No.	Turns Ratio	Min. L_P, µH	Max. L_L, µH	Max. C_C, pF	Max. DCR, Ohms	No. of Leads	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1Z2000	1:1	200	3	800	1.5–1.5	4	$3.675	$2.888	$1.89	$1.365	$1.26	$1.155
1Z2001	1:1	1000	12	2000	8–8	4	3.85	3.025	1.98	1.43	1.32	1.21
1Z2003	2:1	1000	10	1300	10–2	4	4.725	3.713	2.43	1.755	1.62	1.485
1Z2004	5:1	5000	1500	400	19–3	4	4.20	3.30	2.16	1.56	1.44	1.32
1Z2100	1:1:1	200	3	800	2–2–2	6	4.375	3.438	2.25	1.625	1.50	1.375
1Z2101	1:1:1	1000	12	2000	10–10–10	6	4.55	3.575	2.34	1.69	1.56	1.43
1Z2103	2:1:1	1000	15	1300	10–2–2	6	5.425	4.263	2.79	2.015	1.86	1.705
1Z2104	5:1:1	5000	1500	400	20–4–4	6	4.90	3.85	2.52	1.82	1.68	1.54

rizontal Plug-In, Pre-molded Case 240-VAC Types—Same as above. Case size, .950″ w. x .775″ d. x .750″ h.

Sprague Number	Turns Ratio	Min. L_P, µH	Max. L_L, µH	Max. C_C, pF	Max. DCR, Ohms	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
11Z3000	1:1	200	3	800	1.5–1.5	$4.095	$3.218	$2.106	$1.521	$1.404	$1.287
11Z3001	1:1	1000	12	2000	8–8	4.27	3.355	2.196	1.586	1.464	1.342
11Z3002	1:1	5000	15	3500	18–18	4.445	3.493	2.286	1.651	1.524	1.397
11Z3003	2:1	1000	10	1300	10–2	5.145	4.043	2.646	1.911	1.764	1.617
11Z3004	5:1	5000	1500	400	19–3	4.62	3.63	2.376	1.716	1.584	1.452
11Z3100	1:1:1	200	3	800	2–2–2	4.795	3.768	2.466	1.781	1.644	1.507
11Z3101	1:1:1	1000	12	2000	10–10–10	4.97	3.905	2.556	1.846	1.704	1.562
11Z3102	1:1:1	5000	15	3500	27–27–27	5.495	4.318	2.826	2.041	1.884	1.727
11Z3103	2:1:1	1000	15	1300	10–2–2	5.845	4.593	3.006	2.171	2.004	1.837
11Z3104	5:1:1	5000	1500	400	20–4–4	5.32	4.18	2.736	1.976	1.824	1.672

TYPE 66Z SCR TRIGGER TRANSFORMERS

e-molded construction permits slightly lower cost than fully-molded units without sacrifice in humidity resistance. Small size for use PC boards and in encapsulated modular packages. Size, .400″ w. x .785″ l. x .312″ h.

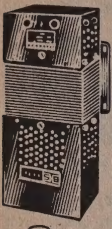
Sprague Number	Turns Ratio	Min. L_P µH	Max. L_L µH	Max. C_C pF	Output Winding*	rms Volts†	Line VAC‡	Net Each, Lots of 1-24	25-49	50-99	100-249
66Z900	1:1:1	700	300	25	60	1000	240	$6.475	$5.088	$3.33	$2.405
66Z903	1:1:1	700	300	25	60	2200	550	6.65	5.225	3.42	2.47
66Z930	1:1:1	4800	25	50	110	1000	240	7.525	5.913	3.87	2.795
66Z932	1:1:1	4800	25	50	110	2200	550	7.70	6.05	3.96	2.86

Typical Vµsec. †60-cycle dielectric test. ‡Max. 60 Hz AC line voltage.

CONSTANT VOLTAGE TRANSFORMERS

CVS/CVN SERIES CONSTANT VOLTAGE TRANSFORMERS

Regulate voltage output within ± ½% regardless of input voltage variations as great as ±15%. Ultra-fast regulating action—response time is 1.5 Hz or less. Provide fully automatic, continuous regulation with no manual adjustments needed. In tables, figure column indicates case structure: Fig. A, single housed unit with exposed core end housings and screw terminals in outlet bo Fig. B, same as A but duplex assembly; Fig. C, drawn case wit integral capacitor; Fig. D, end bell unit with exposed core an separate capacitor.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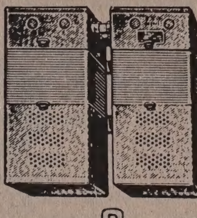
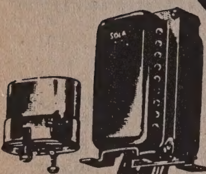

B

C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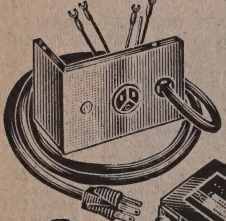
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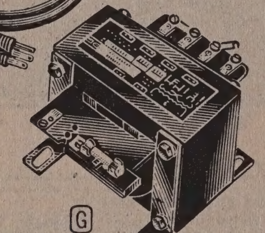

G

CORD/RECEPTACLE ADAPTER KITS

Provide convenience of input plug and output receptacle for most Series CVS and CVN single housed transformers (Fig. A). To determine the correct adapter kit for a given transformer, refer to Kit Code column in the CVS/CVN tables at right. Description column below indicates 2-wire or 3-wire input cord and output receptacle connections.

Kit Code	Sola Kit No.	Fig.	Description	Net Each
a	999-005	E	2-wire	$6.70
a	999-019	E	3-wire	6.70
b	999-009	E	2-wire	6.70
b	999-020	E	3-wire	6.70
c	999-104	F	2-wire	7.10
c	999-105	F	3-wire	7.10

★QUANTITY DISCOUNTS

Quantity	Discounts
1–9	None
10–49	−12%
50–99	−22%

CVS SERIES SINUSOIDAL TYPE

Less than 3% harmonic content. Excellent for equipment having elements sensitive t power frequencies harmonically related to fundamental. No filters employed.

CVS UNITS FOR 60 Hz, SINGLE PHASE

Sola No.	Fig.	Volt-Amps	Voltage Input	Voltage Output	Kit Code*	Overall Size, Inches	Net Each
23-13-030-2	A	30	95–130	118	c	6⅛ x 5³⁄₁₆ x 3¼	$ 38.1
23-13-060-2	A	60	95–130	118	c	6¹⁵⁄₁₆x 5³⁄₁₆ x 3¼	45.3
23-22-112-2	A	120	95–130 x 190–260	118	c	9⅛ x 5³⁄₁₆ x 3¼	58.1
23-22-125	A	250	95–130 x 190–260	118	a	8⅛ x 5³⁄₁₆ x 3¼	79.1
23-22-150	A	500	95–130 x 190–260	118	b	12⁷⁄₁₆ x 6⁷⁄₁₆ x 7²⁵⁄₃₂	121.8
23-23-060-2	A	60	190–260 x 380–520	118	c	6¹⁵⁄₁₆x 5³⁄₁₆ x 3¼	49.5
23-23-112-2	A	120	190–260 x 380–520	118	c	8⅛ x 5³⁄₁₆ x 3¼	61.7
23-23-125	A	250	190–260 x 380–520	118	a	9⅝ x 7⁷⁄₁₆ x 4½	84.0
23-25-175	A	750	95–130 x 175–235 x 190–260	118 x 236	b	16¹³⁄₁₆x 6⁷⁄₁₆ x 7²⁵⁄₃₂	168.2
23-25-210	A	1000	95–130 x 175–235 x 190–260	118 x 236	.....	17⅞ x 6⅞ x 7²⁵⁄₃₂	204.6
23-25-215	A	1500	95–130 x 175–235 x 190–260	118 x 236	.....	19⁵⁄₁₆ x 9¹⁄₃₂ x10⁹⁄₁₆	275.9
23-25-220	A	2000	95–130 x 175–235 x 190–260	118 x 236	.....	19⅞ x 9¹⁄₃₂ x10⁹⁄₁₆	355.3
23-25-230-3	A	3000	95–130 x 175–235 x 190–260	118 x 236	.....	21⅞ x 9¹⁄₁₆ x10⁹⁄₁₆	494.0
23-25-250	B	5000	95–130 x 175–235 x 190–260	118 x 236	.....	20¹³⁄₁₆x 9¹⁄₃₂ x25¹³⁄₁₆	771.6
23-26-150	A	500	190–260 x 380–520	118 x 236	b	12⁷⁄₁₆ x 6⁷⁄₁₆ x 7²⁵⁄₃₂	130.2
23-26-210	A	1000	190–260 x 380–520	118 x 236	.....	17⅞ x 6⁷⁄₁₆ x 7²⁵⁄₃₂	204.6
23-26-220	A	2000	190–260 x 380–520	118 x 236	.....	19⅞ x 9¹⁄₃₂ x10⁹⁄₁₆	356.4
23-26-230	A	3000	190–260 x 380–520	118 x 236	.....	21⅞ x 9¹⁄₃₂ x10⁹⁄₁₆	494.0
23-26-250	B	5000	190–260 x 380–520	118 x 236	.....	20¹³⁄₁₆x 9¹⁄₃₂ x25¹³⁄₁₆	771.6

CVS UNITS FOR 50 Hz, SINGLE PHASE

Sola No.	Fig.	Volt-Amps	Voltage Input	Voltage Output	Kit Code*	Overall Size, Inches	Net Each
23-13-560-2	A	60	95–130	118	c	7¼ x 5¹³⁄₁₆x 3¼	$ 51.8
23-22-612	A	120	95–130 x 190–260	118	a	8¾ x 7⁷⁄₁₆ x 4½	67.2
23-22-625	A	250	95–130 x 190–260	118	b	11⁵⁄₁₆ x 6⁷⁄₁₆ x 7²⁵⁄₃₂	90.5
23-22-650-1	A	500	95–130 x 190–260	118	b	13 x 6⁷⁄₁₆ x 7²⁵⁄₃₂	138.8
23-23-560-2	A	60	190–260 x 380–520	118	c	7¼ x 5¹³⁄₁₆x 3¼	56.0
23-25-710	A	1000	95–130 x 175–235 x 190–260	118 x 236	.....	18⅞ x 9¹⁄₃₂ x10⁹⁄₁₆	239.8

CVN SERIES NORMAL HARMONIC TYPE

Average 20% total rms harmonic content. Ideal for DC outputs and where harmonic are meaningless.

CVN UNITS FOR 60 Hz, SINGLE PHASE

Sola No.	Fig.	Volt-Amps	Voltage Input	Voltage Output	Kit Code*	Overall Size, Inches	Net Each*
20-10-015	C	15	95–130	118	.....	5⁹⁄₁₆ x 3½ x 2⅝	$ 26.5
20-13-030-2	A	30	95–130	118	c	5⅞ x 5³⁄₁₆ x 3¼	32.7
20-13-060-2	A	60	95–130	118	c	6¹¹⁄₃₂x 5³⁄₁₆ x 3¼	38.6
20-13-112-2	A	120	95–130	118	c	7⅜ x 5³⁄₁₆ x 3¼	50.7
20-13-115	A	150	95–130	118	a	8¾ x 7⁷⁄₁₆ x 4½	61.5
20-14-015	D	15	95–130	118	.....	2¹¹⁄₃₂x 4⁵⁄₁₆ x 2⁷⁄₁₆	23.9
20-14-030	D	30	95–130	118	.....	2¹¹⁄₃₂x 4⁵⁄₁₆ x 3⁵⁄₁₆	28.1
20-14-060	D	60	95–130	118	.....	3⅛ x 4¹³⁄₁₆x 3⅞	32.4
20-14-112	D	120	95–130	118	.....	3⅛ x 4¹³⁄₁₆x 4¹³⁄₁₆	50.7
20-21-112-2	A	120	190–260	236	c	7⅜ x 5³⁄₁₆ x 3¼	50.7
20-22-125	A	250	95–130 x 190–260	118	b	11¹⁄₁₆ x 6⁷⁄₁₆ x 5²⁹⁄₃₂	75.0
20-22-150	A	500	95–130 x 190–260	118	b	12⁵⁄₁₆ x 6⁷⁄₁₆ x 5²⁹⁄₃₂	116.6
20-22-210	A	1000	95-130 x 190–260	118	.....	15⅛ x 6⁷⁄₁₆ x 5²⁹⁄₃₂	193.3
20-23-125	A	250	190–260 x 380–520	118	b	11⅛ x 6⁷⁄₁₆ x 5²⁹⁄₃₂	75.9
20-25-220	A	2000	95–130 x 175–235 x 190–260	118 x 236	.....	20 x 9¹⁄₃₂ x 8⅜	318.6
20-25-230	A	3000	95–130 x 175–235 x 190–260	118 x 236	.....	22 x 9¹⁄₃₂ x 8⅜	476.2
20-26-150	A	500	190–260 x 380–520	118 x 236	b	12⁵⁄₁₆ x 6⁷⁄₁₆ x 5²⁹⁄₃₂	125.3
20-27-250	A	5000	190–260 x 380–520	118 x 236	.....	21 x12⅝ x11⅞	750.6

CVN UNITS FOR 50 Hz, SINGLE PHASE

Sola No.	Fig.	Volt-Amps	Voltage Input	Voltage Output	Kit Code*	Overall Size, Inches	Net Each*
20-10-515	C	15	95–130	118	.....	5⁹⁄₁₆ x 3½ x 2⅝	$ 29.5
20-13-530-2	A	30	95–130	118	c	6⁵⁄₃₂ x 5³⁄₁₆ x 3¼	40.7
20-13-560-2	A	60	95–130	118	c	6⁹⁄₁₆ x 5³⁄₁₆ x 3¼	44.3
20-13-612	A	120	95–130	118	a	8¾ x 7⁷⁄₁₆ x 4½	64.7
20-13-615	A	150	95–130	118	a	9¹⁄₁₆ x 7⁷⁄₁₆ x 4½	76.7
20-22-625	A	250	95–130 x 190–260	118	b	11⁷⁄₁₆ x 6⁷⁄₁₆ x 5²⁹⁄₃₂	88.5
20-22-650	A	500	95–130 x 190–260	118	b	12¹³⁄₁₆x 6⁷⁄₁₆ x 5²⁹⁄₃₂	133.9
20-22-710	A	1000	95–130 x 190–260	118	.....	18⁷⁄₁₆ x 9¹⁄₃₂ x 8⅜	224.6
20-26-650	A	500	190–260 x 380–520	118 x 236	b	12¹³⁄₁₆x 6⁷⁄₁₆ x 5²⁹⁄₃₂	146.3

*Cord/Receptacle Adapter Kits available; see table, left, for code explanation.

CONTROL TRANSFORMERS (FIG. G)

Single phase control transformers for multiple usage with relays, solenoids, recordin devices and similar applications. Available in triple voltage, dual frequency of 50/60 H at 240/480–120 volts, 230/460–115 volts, and 220/440–110 volts. All models have 55° temperature rise.

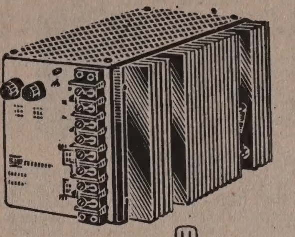
Sola No.	KVA	Overall Size, Inches	Weight, Lbs.	Net Each 1-4
35-10-025	.025	3⁵⁄₁₆ x 3 x 2⁹⁄₁₆	2	$ 9.90
35-10-050	.050	3⁵⁄₁₆ x 3 x 2⁹⁄₁₆	2½	10.90
35-10-075	.075	3¹⁹⁄₃₂ x 3⅜ x 2⅞	3½	11.90
35-10-100	.100	3²⁵⁄₃₂ x 3⅜ x 2⅞	3½	12.70
35-10-150	.150	4⁷⁄₁₆ x 4½ x 3¹³⁄₁₆	6½	13.70
35-10-200	.200	4¹¹⁄₁₆ x 4½ x 3¹³⁄₁₆	7½	17.40
35-10-250	.250	5¹⁄₁₆ x 4½ x 3¹³⁄₁₆	9	19.00
35-10-300	.300	4¹⁵⁄₁₆ x 5¼ x 4⅝	11¼	22.70
35-10-350	.350	5⁵⁄₁₆ x 5¼ x 4⅝	13	23.20
35-10-500	.500	6 x 5¼ x 4⅝	16¼	29.60
35-10-750	.750	6¹¹⁄₃₂ x 6⅜ x 5⅝	24	36.00
35-10-210	1.0	7³⁄₁₆ x 6⅜ x 5⅝	30½	41.00

THE STATE-OF-THE ART IN MODULAR POWER SUPPLIES: TOTALLY INTERCHANGEABLE, ZERO MAINTENANCE, LONG LIFE, FAIL-SAFE PERFORMANCE, AND LOW COST.

REMIUM MODULAR POWER SUPPLIES (FIG. H)

gh performance, IC regulated power supplies are completely otected from overvoltage, overtemperature, and short circuit. nvectionally cooled modular power supplies give 0.01% + line load regulation. Power supplies with 0.01% RMS PARD, have tegrated circuit for increased stability. Fully equipped with mote sensing and automatic current limiting.

Sola No.	Output Voltage Adjustment	Output Current Amps	Net Each•
82-05-315	4.8– 5.5 V	15	$150.10
82-12-270	11.5–12.5 V	7	150.10
82-15-258	14.5–15.5 V	5.8	150.10
82-24-240	23–25 V	4	150.10
82-05-325	4.8– 5.5 V	25	204.10
82-12-312	11.5–12.5 V	12	204.10
82-15-296	14.5–15.5 V	9.6	204.10
82-24-260	23–25 V	6	204.10
82-48-230	46–50 V	3	204.10



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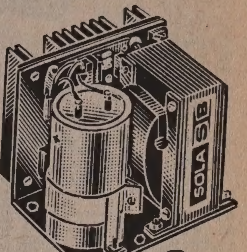

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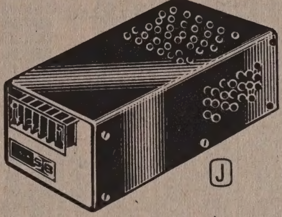

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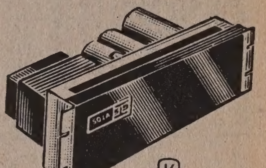


(K)

OEM MODULAR POWER SUPPLIES (FIG. I)

ompletely interchangeable series regulated power supplies come ith remote sensing and short circuit protection. Convectionally oled power supplies give a regulation of 0.05% +1 mV on line ltage or under full load. Constant voltage power supplies have 01% rms PARD. Built-in automatic current limiting. Can be perated on bench or rack mounted.

Sola No.	Output Voltage Adjustment	Output Current Amps	Net Each•
83-05-260	4.8– 5.5 V	6	$ 75.10
83-12-250	11.5–12.5 V	5	75.10
83-15-240	14.5–15.5 V	4	75.10
83-24-225	23–25 V	2.5	75.10
83-05-312	4.8– 5.5 V	12	107.50
83-12-310	11.5–12.5 V	10	107.50
83-15-280	14.5–15.5 V	8	107.50
83-24-260	23–25 V	6	107.50
83-48-230	46–50 V	3	107.50

CVDC MODULAR POWER SUPPLIES (FIG. J)

ong life, low cost modular power supplies are completely proected from short circuits. Convectionally cooled modular power upplies come with regulation of 1% line on 4% to 10% load, and % RMS PARD. Ferroresonant design for high reliability.

Sola No.	DC Output			Load Regulation		Max. Ripple rms	Net Each*
	V	Amps	VA	½l.-f.l.	¼l.-f.l.		
8-04-315*	12.3	15	60	0.5	0.8	0.4	$109.00
8-05-315*	5.2	15	78	0.5	0.8	0.4	109.00
8-06-315*	6.3	15	95	0.5	0.8	0.4	109.00
8-10-312*	10.0	12	120	0.6	1.0	0.4	109.00
8-12-310*	12.0	10	120	0.6	1.0	0.4	109.00
8-15-280*	15.0	8	120	0.8	1.3	0.3	109.00
8-18-267*	18.0	6.7	120	0.8	1.3	0.3	109.00
8-24-250*	24.0	5	120	1.0	1.7	0.3	109.00
8-28-243*	28.0	4.3	120	1.2	2.0	0.3	109.00
8-48-225*	48.0	2.5	120	2.0	3.4	0.3	109.00
8-04-325†	4.0	25	100	0.5	0.8	0.4	129.00
8-05-325†	5.2	25	130	0.5	0.8	0.4	129.00
8-06-325†	6.3	25	155	0.5	0.8	0.4	129.00
8-10-318†	10.0	18	180	0.6	1.0	0.4	129.00
8-12-315†	12.0	15	180	0.6	1.0	0.4	129.00
8-15-312†	15.0	12	180	0.6	1.0	0.3	129.00
8-18-310†	18.0	10	180	0.6	1.0	0.3	129.00
8-24-280†	24.0	8	192	0.7	1.2	0.3	129.00
8-28-270†	28.0	7	196	0.7	1.2	0.3	129.00
8-48-270†	48.0	4	196	1.0	1.7	0.3	129.00

Shipping Weight, 14 lbs. †Shipping Weight, 19 lbs.

•QUANTITY DISCOUNTS OEM & PREMIUM

Qty.	Discount	Multiplier	Qty.	Discount	Multiplier
1–9 10–24	None –5%	None .95	25–49	–10%	.90

★QUANTITY DISCOUNTS CVDC REGULATED

Qty.	Discount	Multiplier	Qty.	Discount	Multiplier
1–4	None	None	10–24	–17%	.83
5–9	–7%	.93	25–49	–22%	.78

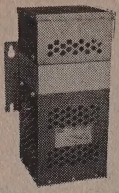
CVDC REGULATED DC POWER SUPPLIES WITH FIXED OUTPUT (FIG. K)

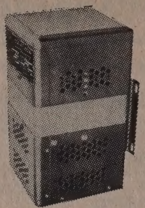
Static-magnetic devices with fixed regulated DC output. Rugged, simple and dependable; for computers, data processing, measurement, telemetering, and wherever isolation from line fluctuation is required. Consists of a constant voltage transformer, rectifier and filter circuit. Provides tight regulation, quick response, isolation and current limiting, high efficiency and reliability; no-maintenance operation. **Regulation:** Handles rough voltage inputs; holds output voltage of ±1% or less for input variations as great as ±15% of nominal input voltage. Rated input range is 100–130 V, 60 Hz. **Response Time:** Output voltage will return to regulation envelope within 25 msec. **Frequency:** Actual variation is linear over ±5% change in frequency from 60 Hz, approx. 1.4% voltage increase for 1% frequency increase. **Load Regulation:** Resistive loads (unity pF) within load rating will cause nominal output to drop from no load to full load. Inductive loads (lagging pF) cause nominal output to decrease with power factor. Leading pF similarly causes a voltage rise. **Efficiency:** 80–90% full load. Input power factor is approx. 0.8. **Ripple:** Total content does not exceed 1% rms. **Short Circuit Protection:** Automatic current limiting is inherent in transformer; limited to approx. 250% of rated value. **Operating Temperature:** 0° to 50° C ambient; output voltage will change approx. 1% for every 40° C change in temperature. **Multiple Operation:** Two or three units can be paralleled for higher output current rating, or connected in series for higher output voltage. **Three-Phase Operation:** Achieved by connecting inputs of three units of the same type to the line and connecting outputs in parallel. **Mounting:** Standard 19″ wide rack panel.

Sola Number	DC Output			Load Regulation		Size, Inches		Net Each*
	V	Amps	VA	20% f.l.	50% f.l.	Panel Ht.	Depth	
281513-2	6	10	60	9%	7%	3½	7⅝	$143.00
282123-1	6	15	90	10%	7%	5¼	7¼	147.00
281514-2	12	5	60	7%	5%	3½	7⅝	137.75
282124-1	12	10	120	9%	5%	5¼	7¼	143.75
281845-2	12	15	180	10%	7%	5¼	7¼	157.00
281515-2	18	5	90	5%	4%	3½	7⅝	146.50
282125-1	18	10	180	7%	5%	5¼	7¼	157.75
281024-1	24	6	144	5%	4%	5¼	9¾	148.00
282126-1	24	10	240	6%	4%	5¼	8¾	161.00
281203-2	24	15	360	7%	5%	7	7¼	167.50
282127-1	24	25	600	7%	5%	8¾	9	215.00
28626-2	28	8	224	6%	4%	5¼	8¾	154.00
282128-1	28	15	420	7%	5%	7	7¼	178.25
281048	48	4	192	3.5%	2.5%	5¼	9¾	152.50
281561-2	48	10	480	4%	2%	5¼	9¾	211.75
282129-1	48	20	960	4%	2.5%	8¾	9¾	253.75
281125-1	125	2	250	2.5%	1.5%	5¼	9¾	151.25
281150-1	150	2	300	2%	1.5%	5¼	9¾	156.00
281200	200	1	200	3%	2%	5¼	9¾	142.00
281250	250	1	250	3%	2%	5¼	9¾	142.00

LINE VOLTAGE REGULATORS

SOLATRON® ±½% LINE VOLTAGE REGULATORS





Unique Solatron static-magnetic line voltage regulator combines in one compact unit, fast response, "tight" voltage regulation, adjustable output, remote sensing, high kVA capacity, using no moving parts. Withstands high inrush load currents and momentary overloads, therefore, making it unnecessary to oversize kV ratings. Combines the ruggedness typical of transformers with th light weight of electronic control circuitry resulting in a regulato of remarkable compactness.

SINGLE-PHASE (60 Hz ±3 Hz)

Sola No.	Max. Output kVA	Input Voltage	Output Voltage Adj.	Approx. Shpg. Wt., Lbs.	Net Each
33-16-150	.5	+10/−20%	108–132	40	$ 396.00
33-16-210	1	+10/−20%	108–132	58	435.00
33-26-210	1	+10/−20%	216–264	58	435.00
33-16-220-6	2	+10/−20%	104–125	81	581.00
33-26-220-6	2	+10/−20%	208–250	81	581.00
33-16-230-6	3	+10/−20%	104–125	95	669.00
33-26-230-6	3	+10/−20%	208–250	95	669.00
33-16-250-6	5	+10/−20%	104–125	127	873.00
33-26-250-6	5	+10/−20%	208–250	127	873.00
33-46-250-6	5	+10/−20%	416–500	127	873.00
33-16-275-6	7.5	+10/−20%	104–125	168	1081.00
33-26-275-6	7.5	+10/−20%	208–250	168	1081.00
33-46-275-6	7.5	+10/−20%	416–500	168	1081.00
33-16-310-6	10	+10/−20%	104–125	193	1165.00
33-26-310-6	10	+10/−20%	208–250	193	1165.00
33-46-310-6	10	+10/−20%	416–500	193	1165.00
33-16-315	15	+10/−20%	108–132	400	1268.00
33-06-315	15	+10/−20%	188–228	400	1268.00
33-46-315	15	+10/−20%	416–500	400	1268.00
33-16-325	25	+10/−20%	108–132	520	$1685.0
33-06-325	25	+10/−20%	188–228	520	1685.0
33-26-325	25	+10/−20%	216–264	520	1685.0
33-46-325	25	+10/−20%	432–528	520	1685.0
31-16-337	37.5	+10/−10%	108–132	525	1454.0
31-26-337	37.5	+10/−10%	216–264	525	1454.0
31-46-337	37.5	+10/−10%	432–528	525	1454.0
31-16-350-5	50	+10/−10%	114–126	1050	2431.0
31-26-350-5	50	+10/−10%	228–252	1050	2431.0
31-46-350-5	50	+10/−10%	456–504	1050	2431.0
31-16-375-5	75	+10/−10%	114–126	1625	3046.0
31-26-375-5	75	+10/−10%	228–252	1625	3046.0
31-46-375-5	75	+10/−10%	456–504	1625	3046.0
31-16-410-5	100	+10/−10%	114–126	1900	3647.0
31-26-410-5	100	+10/−10%	228–252	1900	3647.0
31-46-410-5	100	+10/−10%	456–504	1900	3647.0
31-16-415-5	150	+10/−10%	114–126	2200	4368.0
31-26-415-5	150	+10/−10%	228–252	2200	4368.0
31-46-415-5	150	+10/−10%	456–504	2200	4368.0

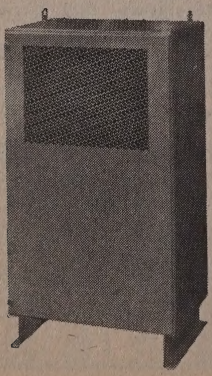
THREE-PHASE DELTA (60 Hz ±3 Hz)

Sola No.	Max. Output kVA	Input Voltage	Output Voltage Adj.	Approx. Shpg. Wt., Lbs.	Net Each
39-29-217	1.7	+10/−20%	216–264	265	$1241.00
39-29-235-6	3.5	+10/−20%	216–264	325	1557.00
39-29-252-6	5.2	+10/−20%	216–264	370	1732.00
39-09-285-6	8.5	+10/−20%	188–228	452	2127.00
39-29-285-6	8.5	+10/−20%	216–264	452	2127.00
39-49-285-6	8.5	+10/−20%	432–528	452	2127.00
39-09-313-6	13	+10/−20%	188–228	558	2583.00
39-29-313-6	13	+10/−20%	216–264	558	2583.00
39-49-313-6	13	+10/−20%	432–528	558	2583.00
39-09-317-6	17	+10/−20%	188–228	1000	2879.00
39-29-317-6	17	+10/−20%	216–264	1000	$2879.0
39-49-317-6	17	+10/−20%	432–528	1000	2879.0
39-09-326	26	+10/−20%	188–228	1300	3401.0
39-29-326	26	+10/−20%	216–264	1300	3401.0
39-49-326	26	+10/−20%	432–528	1300	3401.0
39-09-343	43	+10/−20%	188–228	1645	4512.0
39-29-343	43	+10/−20%	216–264	1645	4512.0
39-49-343	43	+10/−20%	432–528	1645	4512.0
37-29-365	65	+10/−10%	216–264	1660	4086.0
37-49-365	65	+10/−10%	432–528	1660	4086.0

THREE-PHASE WYE (60 Hz ±3 Hz)

Sola No.	Max. Output kVA	Input Voltage	Output Voltage Adj.	Approx. Shpg. Wt., Lbs.	Net Each
39-06-215	1.5	+10/−20%	108–132	210	$1112.00
39-06-230	3	+10/−20%	108–132	265	1229.00
39-06-260-6	6	+10/−20%	108–132	325	1557.00
39-06-290-6	9	+10/−20%	108–132	370	1732.00
39-06-315-6	15	+10/−20%	108–132	452	2125.00
39-46-315-6	15	+10/−20%	250–304	452	2125.00
39-06-322-6	22.5	+10/−20%	108–132	558	2583.00
39-46-322-6	22.5	+10/−20%	250–304	558	2583.00
39-06-330-6	30	+10/−20%	108–132	610	2879.00
39-06-345	45	+10/−20%	108–132	787	3401.00
39-46-345	45	+10/−20%	250–304	787	3401.00
39-06-375	75	+10/−20%	108–132	960	4513.00
39-46-375	75	+10/−20%	250–304	960	$4513.0
37-46-410-5	100	+10/−10%	264–290	2100	5736.0
37-06-411-8	112.5	+10/−10%	108–132	2660	6178.0
37-06-415-5	150	+10/−10%	114–126	3450	6831.0
37-46-415-5	150	+10/−10%	264–290	3450	6831.0
37-06-422-5	225	+10/−10%	114–126	3700	7613.0
37-46-422-5	225	+10/−10%	264–290	3700	7613.0
37-06-430-5	300	+10/−10%	114–126	4800	8490.0
37-46-430-5	300	+10/−10%	264–290	4800	8490.0
37-06-450-5	500	+10/−10%	114–126	6000	10967.0
37-46-450-5	500	+10/−10%	264–290	6000	10967.0

50 Hz UNITS AVAILABLE ON REQUEST



SOLATRON FOR COMPUTERS

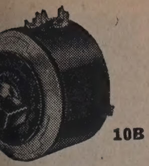
Improved Solatron LVR for computers designed specifically to meet stringent requirements of E.D.P. equipment. **Voltage:** 208/230 V nom. Input: 3 phase, +10/−20% range. Output Regulation: ±1% for any combination of line, load, thermal drift warm-up and frequency. Capable of remote sensing. **Frequency:** 57–63 Hz. **Outpu Voltage Adjustability:** Continuously adjustable from 208 to 230 volts. **Transient Respons Time:** Starts immediately. Complete within 4572 cycles. **Power Efficiency:** 95% typica (watts). **VA Efficiency:** 85% typical. **Load Power Factor:** With little derating, .75 lagging to .95 leading. Without derating, .95 lagging to unity. **Regulation:** Line regulation ±¼%; load regulation, ±¼%; line and load, ±½%. **Maximum Harmonics:** Balance line and load, 35% maximum; unbalanced line and/or load, 6% maximum.

Sola No.	Output kVA	Size			Shpg. Wt., Lbs.	Net Each
		Width	Depth	Height		
39-59-310	10	27″	20″	50″	540	$ 3096.00
39-59-315	15	27″	20″	50″	700	3465.00
39-59-325	25	36″	27″	65″	1,080	3817.00
39-59-350	50	36″	27″	65″	1,510	6094.00
39-59-375	75	36″	27″	65″	1,785	9142.00
39-59-410*	100	36″	27″	65″	1,200	11,608.00
39-59-415*	160	36″	27″	65″	1,385	16,862.00
39-59-422*	225	36″	27″	65″	1,585	23,296.00

*Regulators consist of 3 cabinets. Size and weight specifications are for each cabinet.

SUPERIOR ELECTRIC POWERSTAT VARIABLE TRANSFORMERS

POWERSTAT® VARIABLE TRANSFORMERS WITH POWERKOTE® COILS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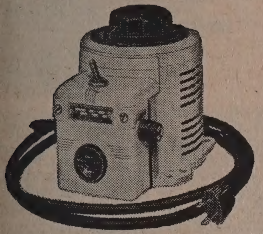
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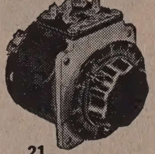
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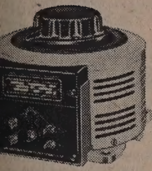
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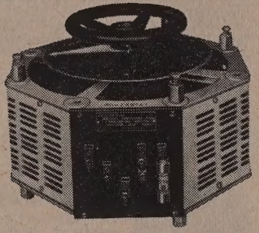
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SINGLE PHASE

Superior Number⁑	Line Volts	Frequency Hz	Output Volts	Output Max. Amps	Output Max. kVA	Net Each Manual	Net Each Motor* Driven
0B	120	60■	0–132	2.25#	0.30	$ 13.40	....
1	120	50/60	0–140	4.5	0.63	19.50	$ 149.50
16BU	120	50/60	0–140	10	1.4	26.00	156.00
16B§	120	50/60	0–140	10	1.4	35.00	....
17BT	120	60	0–120	12	1.4	36.00	166.00
26U	120	50/60	0–140	15	2.1	47.50	222.50
26	120	50/60	0–140	15	2.1	53.00	228.00
PF126§	120	50/60	0–140	15	2.1	67.00	....
36B	120	50/60	0–140	22	3.1	75.00	250.00
PF136B§	120	50/60	0–140	22	3.1	97.00	....
46	120	50/60	0–140	30	4.2	120.00	295.00
156D	120	50/60	0–140	50	7.0	178.00	353.00
36B-3‡	120	50/60	0–140	66	9.2	259.00	434.00
156D-2P	120	50/60	0–140	100	14.0	398.00	573.00
156D-3P	120	50/60	0–140	150	21.0	689.00	864.00
156D-4P	120	50/60	0–140	200	28.0	991.00	1166.00
156D-6P	120	50/60	0–140	300	42.0	1456.00	1631.00
2	240	50/60	0–264	0.5	0.13	20.50	....
0B-2	240	60■	0–264	2.25#	0.59	37.50	....
2	240	50/60	0–280	2.5	0.70	29.00	159.00
16BU	240†	50/60	0–280	3.5	0.98	31.00	161.00
16B§	240†	50/60	0–280	3.5	0.98	40.00	....
1-2	240	50/60	0–280	4.5	1.3	56.00	186.00
17BT	240	60	0–240	5	1.2	41.00	171.00
26U	240†	50/60	0–280	7.5	2.1	47.50	222.50
26	240†	50/60	0–280	7.5	2.1	53.00	228.00
PF226§	240†	50/60	0–280	7.5	2.1	67.00	....
16BU-2	240	50/60	0–280	10	2.8	68.00	198.00
16BT-2	240	50/60	0–280	10	2.8	84.00	214.00
36B	240†	50/60	0–280	10	2.8	75.00	250.00
PF236B§	240†	50/60	0–280	10	2.8	97.00	....
17BT-2	240	60	0–240	12	2.9	91.00	221.00
46	240†	50/60	0–280	15	4.2	120.00	295.00
26U-2	240	50/60	0–280	15	4.2	109.00	284.00
26-2	240	50/60	0–280	15	4.2	122.00	297.00
36B-2▲	240†	50/60	0–280	22	6.2	176.00	351.00
256D	240†	50/60	0–280	28	7.8	178.00	353.00
46-2♦	240	50/60	0–280	30	8.4	266.00	441.00
156D-2S	240	50/60	0–280	50	14.0	374.00	549.00
256D-2P	240†	50/60	0–280	56	15.7	398.00	573.00
256D-3P	240†	50/60	0–280	84	23.5	689.00	864.00
156D-4PS	240	50/60	0–280	100	28.0	968.00	1143.00
256D-4P	240†	50/60	0–280	112	31.4	991.00	1166.00
156D-6PS	240	50/60	0–280	150	42.0	1425.00	1600.00
256D-6P	240†	50/60	0–280	168	47.0	1456.00	1631.00
12-2	480	50/60	0–528	0.5	0.26	56.00	....
22-2	480	50/60	0–560	2.5	1.4	75.00	205.00
216BT-2	480†	50/60	0–560	3.5	2.0	98.00	228.00
217BT-2	480	60	0–480	5	2.4	100.00	230.00
226-2	480†	50/60	0–560	7.5	4.2	122.00	297.00
236B-2▲	480†	50/60	0–560	10	5.6	176.00	351.00
246-2▲	480†	50/60	0–560	15	8.4	266.00	441.00
256D-2S	480†	50/60	0–560	28	15.7	374.00	549.00
1256D-4PS	480†	50/60	0–560	56	31.4	968.00	1143.00
1256D-6PS	480†	50/60	0–560	84	47.0	1425.00	1600.00

POWERSTAT Variable Transformers with POWERKOTE Coils give an average of 20% higher current ratings, 10:1 greater overload capability, longer life, greater resistance to fungus, salt spray and other contaminating atmospheres. POWERKOTE Coil commutator bars are embedded in place, preventing steady-state operating temperature and severe overloads from distorting the commutator. POWERSTAT Variable Transformers deliver continuously adjustable voltage from AC lines; feature rugged construction, precious metal-plated commutators, excellent regulation, high efficiency and conservative ratings. They introduce no waveform distortion. Manual and motorized single and ganged assemblies are offered in ratings from .13 to 244 kVA. For complete technical data request current POWERSTAT catalog.

ADJUSTABLE SPEED DRIVES

Motor-driven units in Series 116B-216B, 117B-217B, 126-226, 136B-236B and 146-246 are available with adjustable speed drives which permit full range output voltage to be controlled at any speed, 5 to 200 secs. **To Order:** Add preffix **AM** to type number and **$150.00** to price. For adjustable speed control **BHP65455-G1**, add **$11.00** to price.

THREE PHASE

Superior Number⁑	Line Volts	Frequency Hz	Output Volts	Output Max. Amps	Output Max. kVA	Net Each Manual	Net Each Motor* Driven
10B-2	120	60■	0–132	2.25#	0.51	$ 37.50	....
21-2	120	50/60	0–140	4.5	1.1	56.00	$ 186.00
•116BU-2	120	50/60	0–140	10	2.4	68.00	198.00
•116BT-2	120	50/60	0–140	10	2.4	84.00	214.00
•117BT-2	120	60	0–120	12	2.5	91.00	221.00
126U-2	120	50/60	0–140	15	3.6	109.00	284.00
126-2	120	50/60	0–140	15	3.6	122.00	297.00
•136B-2▲	120	50/60	0–140	22	5.3	176.00	351.00
146-2♦	120	50/60	0–140	30	7.3	266.00	441.00
•1156D-2D	120	50/60	0–140	50	12.1	374.00	549.00
1156D-4D	120	50/60	0–140	100	24.2	946.00	1121.00
1156D-6D	120	50/60	0–140	150	36.4	1422.00	1597.00
•12-2	240	50/60	0–264	0.5	0.23	56.00	....
10B-3	240	60■	0–240	2.25#	0.94	62.00	....
22-2	240	50/60	0–280	2.5	1.2	75.00	205.00
216BU-2	240†	50/60	0–280	3.5	1.7	78.00	208.00
216BT-2	240†	50/60	0–280	3.5	1.7	98.00	228.00
21-3	240	60■	0–280	4.5	2.2	88.00	218.00
217BT-2	240	60	0–240	5	2.1	100.00	230.00
226-2	240†	50/60	0–280	7.5	3.6	122.00	297.00
•116BT-3	240	60■	0–280	10	4.8	121.00	251.00
•236B-2▲	240†	50/60	0–280	10	4.8	176.00	351.00
117BT-3	240	60	0–240	12	5.0	127.00	257.00
126-3	240	60■	0–280	15	7.3	188.00	363.00
•136B-3‡	240	60■	0–280	22	10.7	259.00	434.00
1256D-2D	240†	50/60	0–280	28	13.6	374.00	549.00
146-3Ɪ	240	60■	0–280	30	14.5	394.00	569.00
•1156D-3Y	240	60■	0–280	50	24.2	656.00	831.00
1256D-4D	240†	50/60	0–280	56	27.2	946.00	1121.00
1256D-6D	240†	50/60	0–280	84	40.7	1422.00	1597.00
1156D-6Y	240	60■	0–280	100	48.5	1394.00	1569.00
12-3	480	60■	0–528	0.5	0.46	86.00	....
•22-3	480	60■	0–560	2.5	2.4	118.00	248.00
216BT-3	480†	60■	0–560	3.5	3.4	134.00	264.00
217BT-3	480	60	0–480	5	4.2	143.00	273.00
226-3	480†	60■	0–560	7.5	7.3	188.00	363.00
•236B-3‡	480†	60■	0–560	10	9.7	259.00	434.00
246-3‡	480†	60■	0–560	15	14.5	394.00	569.00
•1256D-3Y	480†	60■	0–560	28	27.2	656.00	831.00
1256D-6Y	480†	60■	0–560	56	54.3	1394.00	1569.00

EXPLANATION OF FOOTNOTES

⁑Letters in Part Numbers Indicate as Follows:

2PF—Two-prong parallel-blade plug and receptacle, cartridge type fuse and holder.

3PN—Same as 2PF except NEMA plug and receptacle.

Suffix letters and numbers (2, 2S, 4P, 6P, etc.), indicate ganged units. Numeral shows number of units in assembly.

U—Supplied without protective screening, terminal enclosure, input cord, output receptacle, fuse or switch.

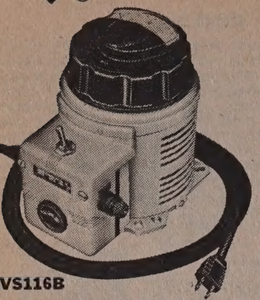
*Add type number prefix from table below to Superior Powerstat No. for full-range travel motor speed desired; e.g., type **5M21** is 5-sec No. 21 Powerstat, **15MC**126 is 15-sec No. 126 Powerstat, etc. Four-gang or larger types not available in 5-sec speed.

Superior Powerstat Series	Prefix for Full-Range Travel Motor Speed: 5 Sec	15 Sec	30 Sec	60 Sec
21-22 116B-216B 117B-217B 146-246	5M	15M	30M	60M
1156D-1256D	5MB	15MB	30MB	60MB
126-226	5MC	15MC	30MC	60MC
136B-236B	5MD	15MD	30MD	60MD

†Also has terminals for operating at ½ this input voltage. ‡For parallel connection, order T5579B choke at **$52.00** extra. §Also available as 3PN type. #Metal panel mounted rating. See published derating for brackets and nonmetallic panels. ▲For parallel connection, order T5000B choke at **$27.00** extra. ■If the maximum output voltage is limited to the input voltage, the frequency range is 50–60 Hz. ♦For parallel connection, order T6053 choke at **$37.00** extra. ꞮFor parallel connection, order T6065 choke at **$65.00** extra.

• AVAILABLE OFF-THE-SHELF FROM STOCK.

SUPERIOR ELECTRIC POWERSTAT VARIABLE TRANSFORMER



VS116B

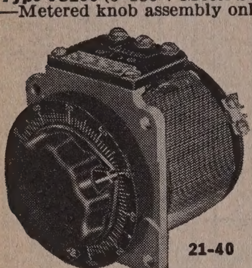
METERED KNOB POWERSTAT® VARIABLE TRANSFORMERS

Stationary, direct-reading voltmeter on knob has accuracy of ±3% FS. Voltmeter does not turn with knob; insensitive to stray magnetic fields. Saves panel space, wiring and installation costs. Series 21-22 thru 146-246 back-of-panel mounted types may be combined with metered knob assemblies. Existing models can be retrofitted also.

Superior Type	Line Volts	Freq. Hz	Output			Price Each
			Volts	Amps‡	kVA‡	
•VS116B*	120	50/60	0–140	10	1.4	$ 76.00
VS117BT*	120	60	0–120	12	1.4	77.00
VS126*	120	50/60	0–140	15	2.1	94.00
VS136B*	120	50/60	0–140	22	3.1	115.00
VS146	120	50/60	0–140	30	4.2	160.00
VS216B*	240†	50/60	0–280	3.5	0.98	80.00
VS217BT*	240	60	0–240	5	1.2	81.00
VS226*	240†	50/60	0–280	7.5	2.1	94.00
VS236B*	240†	50/60	0–280	10	2.8	115.00
VS246	240†	50/60	0–280	15	4.2	160.00

*Also available with cord-plugs shown in standard type chart. †Has terminals for operating at half input voltage. ‡Max.

Type VS150 (0–150 V Meter Scale) or **VS300** (0–300 V Meter Scale) —Metered knob assembly only. Price Each.......... **$47.50**



21-40

40-VOLT POWERSTAT VARIABLE TRANSFORMERS

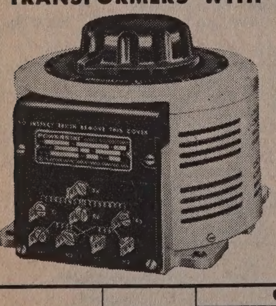
Meet the high current, low voltage requirements of low voltage power supplies and a wide range of transistor circuit applications. All types are open construction. Individual units in ganged assemblies have the same electrical ratings as single units of the corresponding type number.

SINGLE PHASE

Superior Type	Line Volts	Freq. Hz	Output			Price Each	
			Volts	Max. Amps	Max. kVA	Man-ual	Motor* Driven
•10B-40	40	60	0–40	6	.24	$ 16.50	....
10B-40-2†	40	60	0–40	6	.24	48.00	....
10B-40-3†	40	60	0–40	6	.24	76.00	....
•21-40	40	60	0–40	15	.6	22.50	$152.50
21-40-2†	40	60	0–40	15	.6	62.00	192.00
21-40-3†	40	60	0–40	15	.6	99.00	129.00
116BU-40	40	60	0–40	25	1.0	33.00	163.00
116BU-40-2†	40	60	0–40	25	1.0	82.00	212.00
116BU-40-3†	40	60	0–40	25	1.0	117.00	247.00

*Add type number prefix for full range travel motor speed desired: **5M** for 5 sec.; **15M** for 15 sec.; **30M** for 30 sec.; **60M** for 60 sec. (for example, **15M**21-40). †Ratings given apply separately to each unit in assembly.

DOUBLE WOUND POWERSTAT VARIABLE TRANSFORMERS WITH ISOLATED SECONDARY



POWERSTAT type LW136B is a double wound assembly with an isolated secondary. When ordering (*) motor driven assemblies prefix type number with desired speed of either 5, 15, 30 or 60 seconds for full range travel and letters MD (for example, 5MDLW136B-3). Any of the ratings given below are possible simply by using the proper terminal connections. These are only a few of the many ratings that can be obtained. Data sheet on request.

Superior Type	Line Volts	Output			Price Each	
		Volts	Max. Amps	Max. kVA	Man-ual	Motor* Driven
•LW136B	120	0–30	25	.75	$108.00	$283.00
For	120	15–0–15	35	.52		
50/60 Hz	240	0–30	25	.75		
single	240	15–0–15	35	.52		
phase	120	105–135	35	4.7		
	107–137	120	35	4.2		
	240	225–255	35	8.9		
	226–256	240	35	8.4		
LW136B-3	240	210–270	35	16.4	354.00	529.00
For 60 Hz	214–260	240	35	14.6		
three-	480	450–510	35	31.0		
phase	452–512	480	35	29.1		

ENCLOSED LABORATORY POWERSTAT VARIABLE TRANSFORMERS

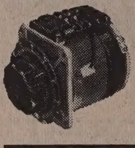
N21

N116BK

Enclosed laboratory models are equipped with grounded NEM cord/plug assembly, on-off switch, pilot light, fuse and outp receptacle. Integral handle; recessed controls. Slot, provided the rear, accepts wall hanger bracket, supplied. Types N116B and N116BLK are supplied with metered knobs for convenien in measuring load voltage without need for a separate voltmete The knob voltmeter remains stationary as the knob rim is turn to vary the voltage. For 120-volt, single phase service.

Superior Type	Input Freq., Hz	Output			Price Each
		Volts	Amps	kVA	
•N10B	60	0–132	2.25	0.30	$31.0
•N21	50/60	0–140	4.5	0.63	43.5
•N116B	50/60	0–140	10	1.4	51.0
•N116BK	50/60	0–140	10	1.4	93.0
N116BL	50/60	0–120	10*	1.2*	51.0
N116BLK	50/60	0–120	10*	1.2*	93.0

*Ratings for constant current load; for constant impedance loa ratings are 13 amps, 1.6 kVA.



COMPACT Q TYPE POWERSTATS

Ideally suited for applications where space is critical factor. Compact, square frame uni available only in manually operated open co struction assemblies. Removable shafts may extended from either end of unit.

SINGLE PHASE

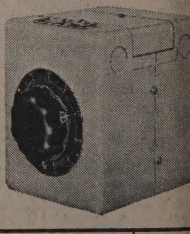
Superior Type*	Line Volts	Input Freq. Hz	Output			Price Each
			Volts	Max. Amps	Max. kVA	
•Q116U	120	50/60	0–120 0–140	9 9	1.1 1.3	$26.0
•Q117U	120	60	0–120	10	1.2	28.0
•Q216U	240 120	50/60	0–280 0–260	3.5 3.5	0.98 0.42	31.0
•Q217U	240	60	0–240	5	1.2	33.0
Q116U-2	240	50/60	0–240 0–280	9 9	2.2 2.5	67.5
Q117U-2	240	60	0–240	10	2.4	74.0
Q216U-2	480 240	50/60	0–560 0–560	3.5 3.5	2.0 0.85	78.0
Q217U-2	480	60	0–480	5	2.4	83.0

THREE PHASE

Superior Type*	Line Volts	Input Freq. Hz	Volts	Max. Amps	Max. kVA	Price Each
Q116U-2	120	50/60	0–120 0–140	9 9	1.9 2.2	$ 67.5
Q117U-2	120	60	0–120	10	2.1	74.0
Q216U-2	240 120	50/60	0–280 0–280	3.5 3.5	1.7 0.74	78.0
Q217U-2	240	60	0–240	5	2.1	83.0
Q116U-3	240	50/60 60	0–240 0–280	9 9	3.8 4.4	95.0
Q117U-3	240	60	0–240	10	4.2	101.0
Q216U-3	480 240	60 60	0–560 0–560	3.5 3.5	3.4 1.5	109.0
Q217U-3	480	60	0–480	5	4.2	117.0

*Number suffix indicates ganged assembly; number is no. of unit

EN TYPE POWERSTATS



Wide application and mounting flexibility. Housed in lightweight, functional aluminum enclosures that permit easy installation, wiring and servicing. Single units and ganged assemblies available for 120, 240 and 480 volt, single and three phase service with loads up to 6.0 kVA. Data sheet on request. Single units below size: 5¾" w. x 6" d. x 6¹³⁄₁₆" h. Shipping Weight, 15 lbs.

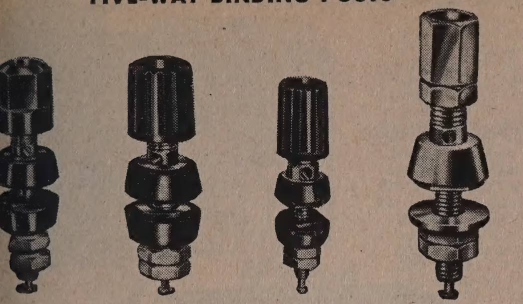
Superior Type†	Input		Output			Price Each
	Volts	Freq.	Volts	Amps	kVA	
•EN116B	120	50/60	0–140	8	1.1	$51.0
•EN117B	120	60	0–120	10*	1.7*	53.0
EN216B	240	50/60	0–280	3	0.84	57.0
EN217B	240	60	0–240	4.4*	1.4*	59.0

*Current is maximum for constant-current load; kVA is maximu for constant-impedance load. †For single phase service.

●AVAILABLE OFF-THE-SHELF FROM STOCK

Superior Electric Components

FIVE-WAY BINDING POSTS



DF30 DF31 DF21 GP30NC

ign permits connection by (1) standard banana plug; (2) lead to shaft; (3) wire looped around the shaft and clamped; wire permanently clamped through center hole; (5) clamped le lug connection. Binding posts can be mounted and securely ed in any panel from 1⁄16″ to ¼″ thick. Adapter spacers are ilable for mounting in thinner panels. Current carrying parts ex nut, fluted nut, miniature and fused types are of gold plated s. Types with nickel-plated brass parts are available on special r. All metal grounding type binding post is made of finely-hined brass nickel-plated and polished. When ordering hex fluted nut or miniature types, specify color by suffix: **BC**—k; **YC**—yellow; **RC**—red; **BLC**—blue; **GNC**—green; or **C**—white.

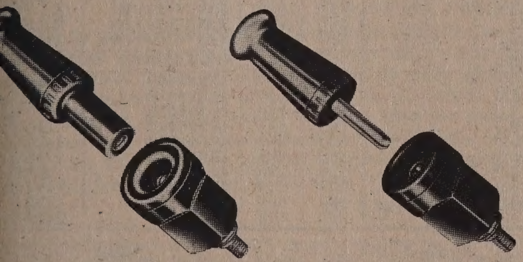
erior Type DF30 Hex Nut—Rated 30 amps, 1000 V working. able, nylon plastic insulating parts meet MIL-M-93A, Type IV. Net Each.......................... **50c**

erior Type DF31 Fluted Nut—Insulating parts of Lexan carbonate resin have low loss and power factor; high voltage lation and impact strength. Rated 30 amps, 1000 V king. Net Each.......................... **50c**

erior Type DF21 Miniature—Smaller in size. Ideal for use electrical and electronic apparatus where space is limited. stic parts meet MIL-M-20693A, Type IV. Rated 15 amps, 0 V working. Available in fluted nut design only. Each.......................... **50c**

erior Type GP30NC Grounding—Designed for making rapid nections to ground. Functional design complements other hex Superior 5-Way® Binding Posts. Complete with washer twin 10-32 hex nut. All metal construction. Each.......................... **50c**

SUPERCON® ELECTRICAL CONNECTORS



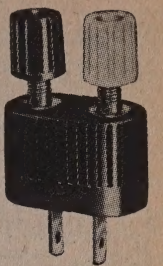
ese socket and pin types of plugs and receptacles incorporate ny new features. Wiring connections can be soldered or solder-. Two cable fastening screws permit accommodation of a wide ge of cable sizes for many needs. Current carrying parts are of l plated brass for stable electrical contact and resistance to rosion. Molded plastic parts offer high dielectric strength, ability, color stability, self-locking action, resistance to heat l corrosion. Plug grips of two-piece threaded construction for ck assembly. Receptacles have color-matching caps and bodies circuit identification in front and back of panel. Plug and re-tacles available in red, white, blue, yellow, black or green (see tnote below). Available in 25, 50, 100 and 250 amp ratings.

SOCKET RECEPTACLES			SOCKET PLUGS		
uperior Type*	Rated Amps	Net Each	Superior Type*	Rated Amps	Net Each
S25G	25	$2.80	PS25G	25	$2.80
S50G	50	3.65	PS50G	50	3.65
S100G	100	4.75	PS100G	100	4.75
S250G	250	8.15	PS250G	250	8.15

PIN RECEPTACLES			PIN PLUGS		
uperior Type*	Rated Amps	Net Each	Superior Type*	Rated Amps	Net Each
P25G	25	$2.80	PP25G	25	$2.80
P50G	50	3.65	PP50G	50	3.65
P100G	100	4.75	PP100G	100	4.75
P250G	250	8.15	PP250G	250	8.15

dd suffix to indicate color: **B**, black; **Y**, yellow; **R**, red; **BL**, e; **GN**, green; **WT**, white (RS25G**B**, black; RP25G**GN**, green).

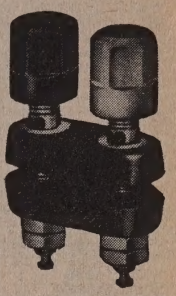
DUAL ADAPTER FIVE-WAY BINDING POSTS



Designed to facilitate line voltage connections from output receptacles to binding posts. Ideally suited for applications using connectors designed for mating with binding posts on ¾″ centers. Durable, black plastic body has fluted design for positive grip. Captive thumbnuts are color coded black and white for easy identification. Current carrying parts are finely machined brass with gold plating for stable electrical contact and resistance to corrosion. Rated for 125 volts, 15 amps.

Superior Type DAP15BWC—Net Ea... **$2.00**

DOUBLE ASSEMBLY FIVE-WAY® BINDING POSTS

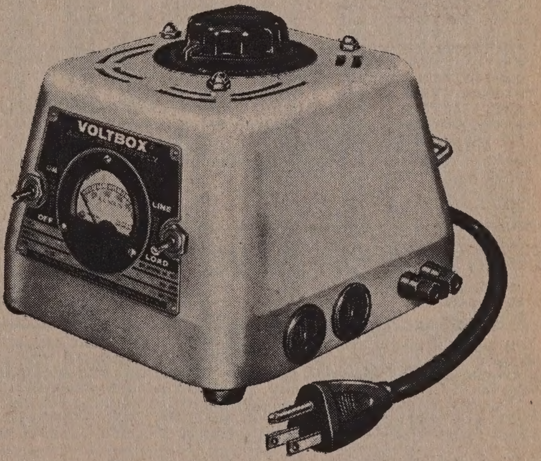


For use on instrument and equipment panels requiring binding posts that mount on ¾″ centers. Rugged, self-contained assemblies; more accurate, faster and simpler usage than two individual binding posts. Fixed-panel-insulator of low-loss Lexan* plastic molded over brass cores frozen to shafts. Shoulders are raised for firm seating in mounting holes. Sliding panel mounting insulator of Lexan* plastic molded over brass cores; seats securely in mounting holes. All brass parts are gold plated. Rated for current carrying capacity of 30 amps, 1000 V working. Mount in any panel 1⁄16″–¼″ thk. High impact strength from −100° F to +275° F; ductility rather than brittleness under impact. Available in three color code combinations. Specify: Black and White, suffix **BWTC**; Black and Black, suffix **BBC**; Black and Red, suffix **BRC**.

Superior Type DF30-2—
Net Each.. **$1.10**

*Registered GE trademark.

VOLTBOX® AC POWER SUPPLY



Voltbox AC power supply, Type UC1MB, compact, versatile test instrument for use in chemical, physical, electrical and other laboratories as well as factory and plant inspection departments. Has all components required for tests involving variable AC voltage. Components include Powerstat® variable transformer, direct reading voltmeter, three output receptacles, two Superior 5-Way® binding posts, "on-off" switch, line-load meter switch, renewable fuse, and six-foot cord and plug. Powerkote coils are incorporated for long life and higher output ratings. All are enclosed in a cast aluminum case equipped with carrying handle. Connects to any convenient receptacle of the proper voltage and frequency. When "on-off" switch is turned to "on", rotation of the knob will deliver an adjustable output voltage to the output receptacles and insulated binding posts. Line-load meter switch is placed on "Line" to read the line voltage and on "Load" to read the load voltage. Readings can be taken at any time without disturbing the test or operation being performed. Has standard dial graduated 0–100 and angle of rotation of 317.5°. Rated for input of 120 volts, 50/60 Hz, single-phase with output of 0 to 140 volts, 10 amps, 1.4 kVA.

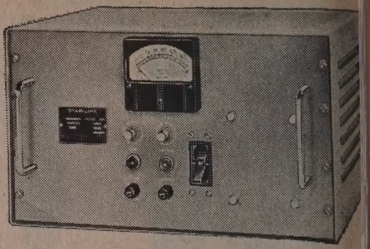
•Superior Type UC1MB Voltbox AC Power Supply—
Net Each.. **$101.00**

●AVAILABLE OFF-THE-SHELF FROM STOCK

Superior® REGULATORS, CONTROL, OVERVOLTAGE DETECTOF

STABILINE® AUTOMATIC VOLTAGE REGULATORS

Maintain a constant output voltage regardless of line or load changes. Several series are available for requirements from 0.25 to 275 kVA. A complete line of Stabilines for use on frequencies of 400 Hz and higher also available. Bulletins giving complete data on all series are available on request.


TYPE EMT4106C

ELECTRO-MECHANICAL TRANSISTORIZED SERIES

Type EMT: Utilize transistorized control circuits, motor-driven Powerstat® variable transformers and buck-boost transformers to regulate line voltage. Widely used in industrial applications or where constant output voltage is required with zero waveform distortion. EMT Series types are offered in ratings from 2.3 to 118 kVA. For heavier load requirements, models of the EMS Series (not listed) are offered in ratings from 25 to 275 kVA. **Type EMK:** Stabiline automatic voltage regulators offer an extremely fast correction rate. Rugged construction assures dependable performance with little or no maintenance. Efficiency, approx. 99%; rated accuracy, ±0.75% for all variations of line voltage or lead current within the stated range of the unit.

TYPES IES9103
AND IES9203

INSTANTANEOUS ELECTRONIC SOLID STATE SERIES

Highly accurate, fast-correcting units feature solid state circuitry which permits smaller and lighter units than comparable tube-type regulators. Other benefits include low distortion, high efficiency (up to 95%) and wide operating frequency range. Speed of correction can be considered instantaneous for most applications. Will maintain output voltage within 100 mV rms band for any combination of rated input voltage and/or load from 1.0 to 0 power factor lagging. With the exception of types IES9110, IES9115, IES9210 and IES9215, all models can be rack mounted by removing the cabinet feet.

Superior Number	Nom'l Output Voltage	AC Hz	Input Voltage Range*	Output Voltage Range	Max. Output Amps	Rated Output kVA	Correction Rate: Sec./Volt†	Approx. Wt., Pounds Net	Approx. Wt., Pounds Shpg.	Superior Number	Net Each
•EMT4102B‡▪	115	50/60	95–135	110–120	20	2.3	.075	54	63	EMT4102B‡▪	$ 585.0
•EMT4106C▪	115	50/60	95–135	110–120	57	6.6	.075	87	95	EMT4106C▪	680.0
•EMT4112B§▪	115	50/60	105–125	110–120	114	13.0	.15	90	98	EMT4112B§▪	680.0
•EMT4115B	115	50/60	95–135	110–120	144	16.6	.125	258	280	EMT4115B	865.0
•EMT4104B#	120	60	108–137	110–120	35	4.2	.10	47	52	EMT4104B#	680.0
EMT4104BU#	120	60	108–137	110–120	35	4.2	.10	36	46	EMT4104BU#	630.0
EMT4104BUT#	120	60	108–137	110–120	35	4.2	.10	40	50	EMT4104BUT#	660.0
•EMT4207B⁑	230	50/60	195–255	220–240	36	8.3	.083	153	175	EMT4207B⁑	745.0
EMT4228C▴	230	50/60	205–250	220–240	130	29.9	.111	253	275	EMT4228C▴	930.0
EMT4407B	460	50/60	400–520	440–480	20	9.2	.041	165	187	EMT4407B	885.0
EMT4418B	460	50/60	400–520	440–480	45	20.7	.041	263	285	EMT4418B	990.0
•EMT6210YB⁑♦	230	50/60	195–255	220–240	33	13.1	.083	372	453	EMT6210YB⁑♦	1305.0
EMT6215YB⁑♦	230	50/60	195–255	220–240	48	19.1	.083	374	455	EMT6215YB⁑♦	1355.0
•EMT6220YB⁑♦	230	50/60	195–255	220–240	63	25.1	.083	378	457	EMT6220YB⁑♦	1485.0
•EMT6245YB⁑♦	230	50/60	195–255	220–240	145	57.8	.25	835	969	EMT6245YB⁑♦	1995.0
EMT6270DB⁑♦	230	50/60	195–255	220–240	188	74.9	.25	795	939	EMT6270DB⁑♦	2470.0
EMT6412YB♦	460	50/60	400–520	440–480	18	14.3	.041	350	430	EMT6412YB♦	1405.0
EMT6417YB♦	460	50/60	400–520	440–480	24	19.1	.041	370	450	EMT6417YB♦	1520.0
•EMT6425YB♦	460	50/60	400–520	440–480	35	27.9	.041	390	470	EMT6425YB♦	1525.0
EMT6450YB♦	460	50/60	400–520	440–480	75	59.8	.125	771	905	EMT6450YB♦	2175.0
EMT6475YB♦	460	50/60	400–520	440–480	100	75	.125	820	954	EMT6475YB♦	2350.0
EMT64100YB♦	460	50/60	420–500	440–480	148	118	.188	841	975	EMT64100YB♦	2470.0
EMK4105▪⧗	115	50/60	105–125	110–120	46	5.3	.04	69	79	EMK4105▪⧗	675.0
•IES91005	115	50/60	95–135	110–120	4.4	0.5	....	53	57	IES91005	440.0
•IES9101B	115	50/60	95–135	110–120	8.7	1.0	....	68	72	IES9101B	510.0
•IES9103B	115	50/60	95–135	110–120	26.1	3.0	....	131	136	IES9103B	775.0
•IES9106B	115	50/60	95–135	110–120	52.2	6.0	....	167	181	IES9106B	905.0
IES9110B	115	50/60	95–135	110–120	87.0	10.0	....	360	380	IES9110B	1495.0
IES9115B	115	50/60	95–135	110–120	130	15.0	....	360	382	IES9115B	1855.0
IES9203B	230	50/60	195–255	220–240	13	3.0	....	120	126	IES9203B	885.0
IES9206B	230	50/60	195–255	220–240	26.1	6.0	....	139	153	IES9206B	1015.0
IES9210B	230	50/60	195–255	220–240	43.5	10.0	....	330	350	IES9210B	1685.0
IES9215B	230	50/60	195–255	220–240	65	15.0	....	350	372	IES9215B	2050.0

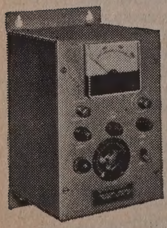
*At nominal output voltage; input voltage range shifts proportionally with output voltage setting. †Motor drive travel time in secon
divided by input range in volts. ‡Can also be operated with an input range of 105–125 volts, output rating of 40 amps, 4.6 kVA a
correction rate of .15 sec/V. §Can also be operated with an input range of 95–135 volts, output rating of 57 amps, 6.6 kVA and correcti
rate of .075 sec/V. #60 Hz only. ⁑Can also be operated with a nominal 208 volt output, input range of 177–230 volts and output ran
of 200–216 volts. ▴Can also be operated with a nominal 208 volt output, input range of 186–226 volts and output range of 200–216 vol
▪Also available as rack models (add suffix **R**); prices on request. ♦Three-phase types; all others single-phase. ⧗Can also be operated on
input range of 95–135 volts with rating of 23 amps, 2.6 kVA and correction of .02 sec/V.

STABILINE OVERVOLTAGE DETECTOR

OVK100 Overvoltage Detector

Solid state voltage level detector protects connected equipment used with Stabiline Au
matic Voltage Regulators in the event of an overvoltage condition. When the voltage be
monitored exceeds a preset level, the device actuates an SPDT relay that can be used
actuate protective equipment or a warning device. Relay contacts are rated 5 amps, res
tive. Can be used in latching or nonlatching connection: In latching connection, the rel
closes when an overvoltage condition exists and remains closed even when the overvolta
condition is removed; in nonlatching connection, it closes during overvoltage, but w
automatically reset when overvoltage condition is removed. Trip level is adjustable,
to 150 volts. Operation at higher voltages is possible with use of an external stepdo
transformer. Size: 4⁷⁄₁₆″ w. x 3⅝″ d. x 5¹¹⁄₁₆″ h. overall.

•**Superior Type OVK100 Overvoltage Detector**—Net Each..................**$94.0**


FR501MP Controller

STABILINE FULL-RANGE REGULATOR CONTROLLER

Designed for use with motor-driven Powerstat variable transformers to maintain consta
output voltage. Adjustable to any value within the full range of the Powerstat us
Regulates output from any motor-driven Powerstat rated 120 or 240 volts, 50/60
single-phase. Dependent on Powerstat used, unit may be used for 3-phase applicati
maintaining one line-to-neutral or one line-to-line voltage. Can also be used in 480 vo
50/60 Hz, 3-phase, but an auxiliary step-down transformer is required for sensing li
to-line voltage. Voltage output remains within 4-volt band when used with 240 V typ
Voltmeter on front panel monitors Powerstat output in 0–300 volt range. Other contr
include voltage adjust, on-off switch, pilot indicating when unit is energized, motor da
ing control and three fuses. Size: 11″ h. x 6″ w. x 7″ d., overall. Mtg. centers 4½″ x 10
maximum.

•**Superior Type FR501MP Regulator Controller**—Net Each..............**$330.**

● AVAILABLE OFF-THE-SHELF FROM STOCK

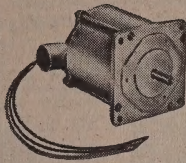
Superior Slo-Syn Motors

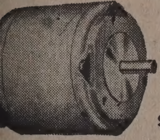
SLO-SYN® SYNCHRONOUS/STEPPING MOTORS

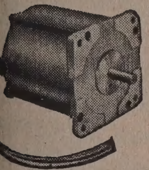
SS25

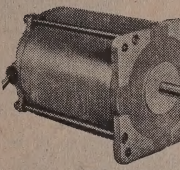
SS400

SS50,
SS50M,
HS50


X250


SS150, -M, SS152,
SS250, SS252


X1000


SS1800

Units may be used as DC stepping motors and start at full-rated torque. Slo-Syn synchronous motors are permanent magnet types (AC) having instant start, stop and reverse characteristics and a basic shaft speed of 72 rpm with 60 Hz applied. Adaptable for use as a DC stepping motor or incremental positioning device that can be stepped 200 times per revolution of the motor shaft. Negligible overshoot; no ratchets or detents are used. Single-pole, three-position switch gives complete forward, reverse and "off" control because motor has only three leads. Starts or stops in less than 0.025 second or, approximately 1.5 Hz. No need for mechanical or electrical braking; stops in less than 5° of motor shaft rotation. Starting and operating currents nearly identical; no excessive inrush current when motor is turned on. Lubricated-for-life, sealed ball-bearings. Models with **M** in type number meet applicable military specifications; those with **X** in type number are explosion-proof and are UL Approved for Class 1, Group D service.

SPECIAL DUTY TYPES are available. Request the latest SLO-SYN literature, giving complete data on:

Double End: Have output shafts projecting from both ends. Types available in all cataloged torque ratings. Those with 50, 150, 250 and 400 oz.-in. ratings can also include planetary gear assemblies if desired.

200 RPM: Types TS25, TS50 and TS52 are similar to standard models, but operate at a synchronous speed of 200 rpm and take 5° steps when used for DC stepping.

28.8 RPM: Type LS50 runs at 28.8 rpm at 60 Hz without stepdown gearing. Makes 500 steps/rev as a DC stepping motor. Torque rating, 60 oz.-in. Stops with 25 msec.

MOTOR UNITS

Specifications at 50/60 Hz, one phase, 72 rpm at 60 Hz.

Superior Type	Torque (Oz.-In.)	V	Max. Amps	Resistor, Ohms	Capacitor, µF	Shpg., Lbs.	Net Each
•SS25	25	120	0.1	500 ±5%, 5 W	0.75 ±6%, 330 VAC	1.5	$ 55.00
•SS50†	50	120	0.3	250 ±5%, 25 W	2.6 ±6%, 330 VAC	3.5	48.00
SS50M	50	120	0.3	250 ±5%, 25 W	2.6 ±6%, 330 VAC	3.5	79.00
•SS150†	150	120	0.4	250 ±5%, 25 W	3.75 ±6%, 330 VAC	8	58.00
SS150M	150	120	0.4	250 ±5%, 25 W	3.75 ±6%, 330 VAC	8	90.00
•SS152†	150	240	0.2	1000 ±5%, 25 W	1.0 ±6%, 660 VAC	8	58.00
•SS250	250	120	0.6	150 ±5%, 50 W	6.5 ±6%, 330 VAC	8	79.00
•X250	250	120	0.6	150 ±5%, 50 W	6.5 ±6%, 330 VAC	9	118.00
•SS252	250	240	0.3	750 ±5%, 50 W	1.75 ±6%, 660 VAC	8	79.00
•SS400	400	120	0.6	150 ±5%, 50 W	6.5 ±6%, 330 VAC	13.75	121.00
•X1000*	1000	120	3.0	65 ±5%, 160 W	30.0 ±5%, 330 VAC	33	236.00
•X1500	1500	120	3.0	50 ±5%, 375 W	30.0 ±6%, 330 VAC	40	263.00
•SS1800*	1800	120	4.0	40 ±5%, 280 W	60.0 ±6%, 330 VAC	50	320.00

*For 60 Hz operation only. †Available with resistor-capacitor integrally mounted on end of motor. Add suffix **RC** to number and **$22.00** to price.

PLANETARY GEAR TYPES

tandard types with special gear planetary
ssemblies are available. Speed reduction
ssembly is completely enclosed in dust-
roof housing mounted on shaft end of
otor. Load is evenly distributed over
ree special nylon gears. Planetary gear
aft is ball-bearing mounted; self lubri-
ted nylon gears. To order, basic type
imber must be suffixed with the desired
anetary gear assembly number. For
ample, SS50-**P1**.

Plan. Assem. Suffix	Gear Ratio	Approx. Speed* rpm	Output Torque: SS50, SS50M†	Output Torque: SS150, SS150M†, SS152	Output Torque: SS250, SS252, SS400	Output Torque: X250	Extra Net Each
P1	4-⅓	16.6	120 oz.-in.	400 oz.-in.	650 oz.-in.	650 oz.-in.	$25.00
P2	21-⅔	3.32	600 oz.-in.	2000 oz.-in.	....	2000 oz.-in.	25.00
P3	108-⅓	0.665	2000 oz.-in.	2000 oz.-in.	....	2000 oz.-in.	35.00
P4	541-⅔	0.133	2000 oz.-in.	2000 oz.-in.	....	2000 oz.-in.	45.00
P5	2708-⅓	0.027	2000 oz.-in.	2000 oz.-in.	....	2000 oz.-in.	55.00

*Exact speed may be calculated from basic motor speed of 72 rpm and given ratio.
†Subtract **$1.00** from each row for M types; SS-400-PI is **$150.00** total.

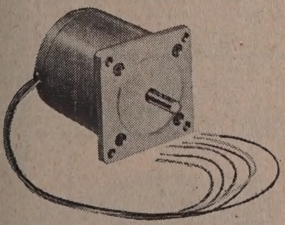
SLO-SYN® PRECISION STEPPING MOTORS

esigned for phase-switched DC stepping duty in applications re-
uiring greater positioning speed and accuracy than possible with
andard SLO-SYN motors. Make 200 steps per shaft revolution
ith each step 1.8°; accurate within ±3% noncumulative. They
ay be operated at speeds greater than 500 steps per second if
ccelerating and decelerating circuits are used. With proper
rcuitry, the motors may be operated at speeds of 1000 steps per
cond or higher without missing any steps.

Superior Type	Volts DC	Amps per Winding	Net Each
•HS25	5.4	1.5	$116.00
•HS50	3	4	103.00
•HS50D*	3	4	147.00
•HS50L	4.5	3.5	141.00

***Features Viscous Damping,** a unique fluid system resulting in a step function approaching critical damping. Shaft oscillation is minimal.

M SERIES SLO-SYN® STEPPING MOTORS



he M Series SLO-SYN motors represent
ie most advanced permanent magnet
epping motor design available. Offer the
ıost complete range, both in torque rat-
igs and in size configuration. Motors pro-
ide the highest torque per pound and
rque to inertia ratios; can be driven at
ates above 20,000 steps per second with
minimum of power input. Standard
rives available for rates to 5,000 steps per
econd. Higher rates can be supplied on
pecial order. Class B insulation; may be
perated at an ambient temperature range
−40° C to +65° C. Continuous duty
emperature rise is 65° C. Stepping incre-
ient is 1.8° with a choice of ±5% or pre-
ision ±3% accuracies available as stand-
rd. An eight-step input sequence gives a
tepping increment of 0.9°.

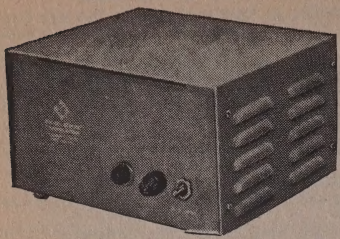
Superior Type	Accuracy	DC Volts	Amps per Winding	Holding Torque* Oz.-In.	Residual Torque† Oz.-In.	Shaft Dia. Inches	Shpg. Wt. Lbs.	Net Each
•M061-FC08 •M061-FD08	±3% ±5%	1.3	3.9	53	5	.250	1½	$ 78.00 66.00
•M061-FC02 •M061-FD02	±3% ±5%	5.1	1.0	53	5	.250	1½	78.00 66.00
•M062-FC09 •M062-FD09	±3% ±5%	1.7	4.7	100	8	.250	2½	95.00 83.00
•M062-FC04 •M062-FD04	±3% ±5%	4.3	1.8	100	8	.250	2½	95.00 83.00
•M063-FC09 •M063-FD09	±3% ±5%	2.2	4.6	150	10	.250	3¼	108.00 96.00
•M063-FC06 •M063-FD06	±3% ±5%	3.4	2.9	150	10	.250	3¼	108.00 96.00
•M091-FC09 •M091-FD09	±3% ±5%	1.8	4.8	150	5	.375	4	71.00 59.00
•M091-FC06 •M091-FD06	±3% ±5%	2.9	3.05	150	5	.375	4	71.00 59.00
•M092-FC09 •M092-FD09	±3% ±5%	2.5	4.6	300	10	.375	6¾	82.00 70.00
•M093-FC11 •M093-FD11	±3% ±5%	2.8	5.5	450	15	.375	9	103.00 91.00
•M093-FC14 •M093-FD14	±3% ±5%	2.2	7.0	450	15	.375	9	103.00 91.00
•M111-FD12	±5%	2.3	6.1	625	15	.375	9¼	110.00
•M111-FD16	±5%	1.7	8.0	625	15	.375	9¼	110.00
•M112-FJ12	±5%	3.6	6.1	1125	30	.625	16¼	198.00
•M112-FJ25	±5%	1.8	12.7	1125	30	.625	16¼	198.00

*Both windings energized at rated current. †Approximate value with neither coil energized.

•AVAILABLE OFF-THE-SHELF FROM STOCK.

Superior Slo-Syn Motors, Drives

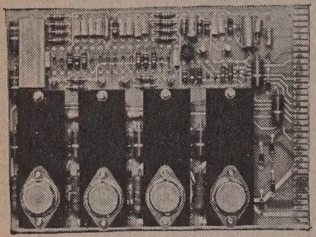
SLO-SYN® TRANSLATOR ST1800B



For pulse-to-step conversion of data to bifilar motors. Converts low-level signal pulses or square waves into the correct switching sequence needed to drive a SLO-SYN motor at the desired stepping rate to 500 steps/sec. Input is 105–125 volts AC, 1.5 amps. Signal input impedance is 500 ohms. Input may be triggered by pulse or square wave or by an external switch. Operates in ambients from 0° C to +40° C. Ideal for wide range of programmed positioning and indexing functions. Approx. shipping weight, 12 lbs. Use with 1.8° step angle motors HS25, HS50, HS50L, SS25-1001, SS50-1008, SS150-1010, SS250-1027, SS400-1021, SS1800-1007, X250-1003 and X1500-1001; 0.72° step angle motors LS50-1005 and LS50-1006; and 5° step angle motors TS25-1008 and TS50-1001.

•**Superior Type ST1800B**—Net Each............... **$295.00**

SLO-SYN TRANSLATOR MODULES



Plug-in printed circuit boards with logic capabilities for stepping SLO-SYN motors. STM1800 and STM1800C are basic translators capable of bi-directional operation of motors. Models with V suffix, i.e., STM1800V and STM1800CV, are similar but have built-in oscillators to provide triggering signals. Potentiometers are supplied with V-suffixed models for adjusting oscillator speed. STM1800 and STM1800V have speeds to 500 steps/second and are used with HS and bifilar motors. STM1800C and STM1800CV have speeds to 2000 steps/second and are used with M Series motors. Types STM1800 and STM1800V require 8 amps power supply transformer T5934-G2. Types STM1800C and STM1800CV require 10 amp power supply transformer T6382.

•**Superior Type STM1800**—Net Each............... **$68.00**

•**Superior Type STM1800V**—Net Each............... **78.00**

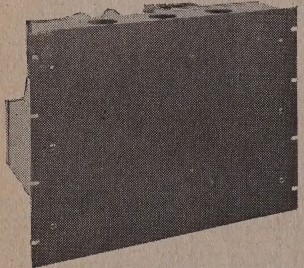
•**Superior Type T5934-G2**—8 Amp Power Supply Transformer. Use with same motors as ST1800. Net Each......... **$ 32.00**

•**Superior Type STM1800C**—Net Each............. **115.00**

•**Superior Type STM1800CV**—Net Each........... **125.00**

•**Superior Type T6382**—10 Amp Power Supply Transformer. Use with M Series motors M061-FC08, M061-FD08, M062-FC09, M062-FD09, M063-FC09, M063-FD09, M091-FC09, M091-FD09, M092-FC09, M092-FD09, M093-FC11, M093-FD11, M111-FD12 and M112-FJ12. Net Each........................... **$32.00**

SLO-SYN HIGH SPEED TRANSLATORS



Used with certain precision models (with prefix HS) and M series (models with prefix M) motors to provide high stepping speeds. High speed translator HTR400 has 50 to 2000 step/sec speed; HTR103RT has 100 to 3000 step/sec speed, and HTR105RT has 100 to 5000 step/sec speed. Acceleration and deceleration is adjustable. Each pulse received from a built-in ocsillator or from an external source will cause the translator to advance the motor one step. Triggering pulses can be supplied by tape readers, computers, oscillators, etc. Ambient temperature, 0° C to 40° C, operating; −55° C to 85° C, storage. Rack mounted design with plug-in solid-state circuitry.

•**Superior Type HTR400**—Speeds up to 2000 steps/sec. Used with Motors HS25, HS50, HS50L and HS400B-1003. Net.. **$785.00**

•**Superior Type HTR103RT**—Speeds up to 3000 steps/sec. Use with M112-FJ25 motor. Net Each................. **$1085.00**

•**Superior Type HTR105RT**—Speeds up to 5000 steps/sec. Use with M Series motors M061-FC02, M061-FD02, M062-FC04, M062-FD04, M063-FC06, M063-FD06, M091-FC06, M091-FD06, M092-FC09, M092-FD09, M093-FC14, M093-FD14 and M111-FD16. Net Each................................. **$945.00**

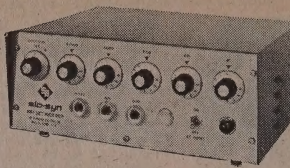
SLO-SYN BUFFERED TRANSLATORS

Drives certain M Series (models with M prefix) motors in response to commands from computer, digital control or other device which operates at a fixed pulse rate. Acceleration and deceleration not required from pulse source. Translator stores incoming pulses and feeds them to the motor, automatically accelerating and decelerating at a rate compatible with the response characteristics of the motor. Acceleration and deceleration rates are approximately 6000 steps/sec² for BTR103RT and 15000 steps/sec² for BTR105RT. Motor is driven one step for each pulse received from control unit. BTR103RT has speed of 100 to 3000 steps/sec; BTR105RT has speed of 100 to 5000 steps/sec. Rack mounted only.

•**Superior Type BTR103RT**—Speeds up to 300 steps/sec. Use with M112-FJ25 motor. Net Each.................. **$1285.00**

•**Superior Type BTR105RT**—Speeds up to 5000 steps/sec. Use with same motors as HTR105RT. Net Each....... **$1145.00**

SLO-SYN PRESET INDEXER SP1800B-5



Controls indexing operations where bifilar motors are used for positioning. Automatically provides the correct switching sequence needed to drive motors the required number of steps. Has provision for actuating external equipment needed to perform related operations. Dials on control panel can be set to provide desired number of steps up to 99,999 counting range. Operates in ambients from 0° C to +40° C. Input current 1.25 amps. Also requires series dripping resistors. Approx. shipping weight, 19 lbs.

•**Superior Type SP1800B-5**—Speeds up to 500 steps/sec. Use with same motors as ST1800B. Net Each............... **$820.00**

SLO-SYN HIGH SPEED PRESET INDEXERS

HPR400R-5

Used with certain precision (models with HS prefix) and M Series (models with M prefix) motors in indexing and other positioning operations. HPR400R-5 has 50 to 2000 steps/sec speed; HPI 153RT has 100 to 3000 step/sec speed; and HPI 155RT has 100 to 5000 step/sec speed. Decade counter controls on front panel permit selecting positioning increments up to 99,999 counting range. On index command, unit drives the motor the prescribed number of steps and then actuates a relay which controls external equipment. Count can also be set by computer or external decade switches. Ambients: 0° C to 40° C operating; −55° C to 85° C storage. Rack mounted only.

•**Superior Type HPR400R-5**—Speeds up to 2000 steps/sec. Use with motors HS25, HS50, HS50L and HS400B-1003. Net Each................................ **$1240.00**

•**Superior Type HPI 153RT**—Speeds up to 3000 steps/sec. Use with M112-FJ25 motor. Net Each................ **$1620.00**

•**Superior Type HPI 155RT**—Speeds up to 5000 steps/sec. Use with same motors as High Speed Translator HTR105RT. Net Each................................ **$1480.00**

BACKLASH TAKE-UP BOARDS

Cause motor to take additional steps when travel is in minus direction, then same number of steps in plus direction. Motor takes only the required steps when travel is in plus direction.

Superior Type BHM144134-G1—For use with HPR400R-5. Net Each.................................... **$80.00**

Superior Type BHM144087-G4—For use with HPI 153RT and HPI 155RT. Net Each.......................... **$80.00**

SLO-SYN ADJUSTABLE SPEED DRIVE ST1800BV

Essentially a translator with a built-in oscillator to supply triggering signals. The oscillator frequency can be adjusted to vary the speed from 4 steps/sec up to 500 steps/sec or the maximum permissible with the motor used. Have same other characteristics and applicable motors as SLO-SYN Translator ST1800B.

Superior Type ST1800BV—Net Each............... **$350.00**

SLO-SYN BIFILAR MOTORS

Superior Type	Stepping Application Ratings		Net Each
	DC Volts	Amps per Winding	
TS50-1001*	3	4.0	$105.00
•SS25-1002*	5.9	.88	87.00
•SS25-1001*	11.8	.44	87.00
•SS25-1011	23.6	.22	87.00
SS50-1010	2.0	3.3	80.00
•SS50-1009*	5.5	1.3	80.00
•SS50-1008*	8.0	0.85	80.00
•SS50-1001	14.0	0.53	80.00
SS50-1007	35.0	0.21	80.00
SS150-1023	1.4	8.5	90.00
SS150-1009	2.5	4.0	90.00
•SS150-1010*	10.0	1.25	90.00
SS150-1017	25.0	0.5	90.00
SS250-1006	2.5	5.0	111.00
•SS250-1027*	4.6	3.1	111.00
•SS250-1002*	9.0	1.55	111.00
•SS250-1004	22.5	0.61	111.00
X250-1003*	4.6	3.1	150.00
X250-1002*	9.0	1.55	150.00
•SS400-1021*	5.3	3.4	153.00
•SS400-1002	8.3	2.2	153.00
SS400-1006	21.2	0.85	153.00
LS50-1005	3.0	4.0	164.00
•LS50-1006	12.0	1.0	164.00
X1500-1001	12.0	3.8	295.00
X1000-1002	10.0	3.6	268.00
X1000-1007	25.4	1.6	268.00
•SS1800-1007	11.5	3.9	352.00
SS1800-1002	14.4	3.1	352.00
SS1800-1006	23.0	2.0	352.00

*Dropping resistor required when used with translator or preset indexer.

●AVAILABLE OFF-THE-SHELF FROM STOCK

TELE-DYNAMICS PARAFORMER® REGULATORS

VANLASS *DIVISION OF* **AMBAC**

PARAFORMER®—A NEW CONCEPT IN AC POWER CONDITIONING

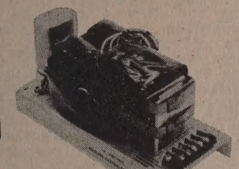
Paraformer is a line voltage regulator and line power filter prevents line voltage fluctuations (noise, distortion, etc.) reaching the load. Provides voltage regulation and noise uation of over 50 dB, over frequency range of 0 to 1 MHz. ates exclusively on the basis of parametric coupling, with coupling or mutual inductance equal to zero. Other passive devices (transformers and ferroresonant transformers) depend almost exclusively on the flux coupling term of the electromotive force equation below; the Paraformer transfers energy by the I dL/dt term of the equation. The comparison chart illustrates the advantages of the Paraformer over conventional regulation methods.

$$E=\frac{d}{dt}(LI)=\underbrace{\frac{L\,dI}{dt}}_{\text{Flux Coupling Term}}+\underbrace{I\frac{dL}{dt}}_{\text{Parametric Coupling Term}}$$

COMPARISON CHART

Function	Transformer	Ferroresonant Transformer	Paraformer
Line voltage regulation	None	±1%	±½%
Line filtering (noise)	No	Slight	Over 50 dB
Load filtering (noise)	No	Slight	Over 50 dB
Overload protection	No	Partial	Yes
Low line protection	None	None	Yes

PARAX® AC VOLTAGE REGULATORS (FIG. A)



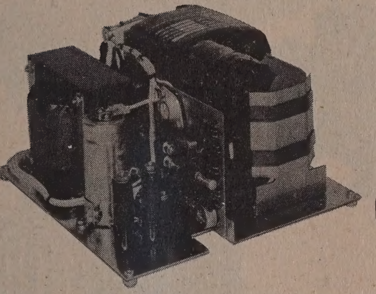
A

AC line regulators using Paraformer principle described above. For 60 Hz, in ratings from 60 VA to 1000 VA. **AC Input:** 115 VAC, ±10% (nominal), 60 Hz; 50–150 VAC permissible. **AC Output:** 117 VAC, 60 Hz, single-phase. **Regulation:** ±0.5% line, ±2.0% load.

60 Hz PARAX REGULATORS

Wanlass Model	Power Rating	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-9	10-24	25-49	50-99
PEC-60	60 VA	9 x 4 x 4½	10	$ 99.75	$ 94.75	$ 89.80	$ 84.80
PEC-150	150 VA	12 x 4 x 6	21	157.50	149.65	141.75	133.90
PEC-500	500 VA	17 x 5 x 7½	50	236.25	224.44	212.65	200.80
PEC-1000	1000 VA	17 x 10¼ x 7½	85	446.25	423.95	401.65	379.30

THE WANLASS VARAX VARIABLE INDUCTOR



B

All-new magnetic component invented by Wanlass Electric. An electrically variable inductor which can be controlled over a wide range of inductance, through the application of a small DC control current. Similar in design to the Wanlass Paraformer, with a basic core consisting of two C-cores rotated at 90° relative to one another.

Offers many advantages over conventional saturable reactors, including: Smaller size, lighter weight, higher reliability, less waveform distortion, and lower cost. Limited waveform distortion is the result of the relatively linear variation of AC inductance as a function of DC control current.

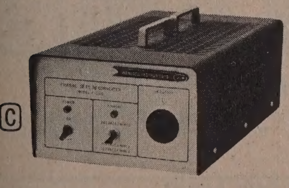
Particularly well suited to AC line voltage regulation, by adding only a sensor and control circuit plus a boost transformer or autotransformer (Models VVR-1500, VVR-1501 and VVR-1502, listed below, are for AC regulation).

VARIABLE INDUCTOR STATIC AC VOLTAGE REGULATORS (FIG. B)

tic, frequency insensitive AC voltage regulators offer high ability, ideal for remote and unattended locations. Provides and load regulation; true rms regulation by rms sensor all silicon semiconductor closed-loop control circuit, with power level. No silicon controlled rectifiers or other solid e components are used in power circuits. Excellent source high starting current loads such as motors, lamps or heaters; binations of high current loads; and all lagging power factor ls. Provides line transient suppression by inherent characstics or series inductor in the line; produces no spikes or ducted RF interference. Makes a sensible replacement for ferroresonant constant-voltage transformers or silicon-controlled rectifier type AC regulators. Features include: Short circuit protection; suppression of 200 volt transients, protecting both the regulator and the load. **AC Input:** 105–130 VAC, 47–63 Hz, single-phase. **AC Output:** 120 V rms; 1500 or 2000 VA. **Load Regulation:** ±1% for 400 to 1500 watt load change (±1%, zero to full-load with optional BI-1500 ballast inductor). **Line Regulation:** ±1%. **Operating Temperature:** 0° to 55° C; up to 85° C with 200 cfm forced-air cooling. **Efficiency:** Over 90% at full load. **Size:** 9″ w. x 9.3″ d. x 4.8″ h. Weight, 32 lbs.

Wanlass Model	Power Rating	Inductive Load Required	Motor Load, HP	Net Each, Lots of 1-9	10-24	25-49	50-99
VVR-1500	1500 VA	1.8 to 3.6 amps	1/12 to ⅙	$181.15	$172.10	$163.00	$153.95
VVR-1501	1500 VA	3.6 to 5.4 amps	⅙ to ¼	181.15	172.10	163.00	153.95
VVR-1502	2000 VA	5.3 to 8.0 amps	¼ to ½	181.15	172.10	163.00	153.95
BI-1500	Ballast inductor for VVR-1500			26.25	....	....	....

PHASAC® SINGLE TO 3-PHASE CONVERTER (FIG. C)



C

Static single to three-phase AC converter rated 1 kVA, with all passive components utilizing inherent phase shift phenomenon of the Paraformer. For all applications where static conversion from single to three-phase line is necessary. **AC Input:** 105–125 VAC, single phase. **AC Output:** 120 VAC line to neutral; 208 VAC line to line; 240 VAC at 1 kVA (333 VA per phase), three phase. **Output Connector:** 4-wire wye or 3-wire delta. **Size:** 8⁹⁄₁₆″ w. x 17⅛″ d. x 6⅝″ h. Weight, 60 lbs.

Wanlass Model P-2410 Phasac Single to 3-Phase Converter—
Net Each, Lots of 1-9 .... **$475.00**

FOR THE FINEST IN POWER SUPPLIES AND VOLTAGE REGULATORS, ALWAYS ASK FOR WANLASS—ASSURING LONG-LIVED RELIABILITY AND RESULTING ECONOMY.

TELE-DYNAMICS CLIP-AC™ REGULATORS,

WANLASS DIVISION OF AMBAC DC POWER SUPPLIE

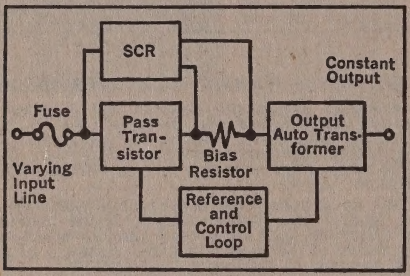
THE CLIP-AC PRINCIPLE OF VOLTAGE REGULATION

Clip-AC type AC voltage regulators are the logical successors to the ferroresonant transformer for the bulk of AC regulation requirements, at up to 1 kVA. Regulation is achieved by symmetrically clipping (dissipating) the peaks of the incident sinusoidal waveform. Except for these peaks, the Clip-AC output waveform is identical to the input waveform. The comparison chart below illustrates the advantages over conventional regulation using the ferroresonant principle. The Clip-AC principle is used in both peak and rms AC regulation, and in regulated DC power supplies.

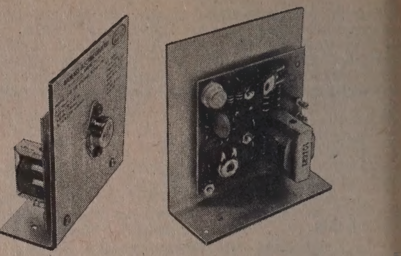
COMPARISON CHART

Function	Ferroresonant Principle	Clip-AC Principle
Input frequency	Single frequency	47–420 Hz typical
Line regulation	1–3% typical	−0.1 to 1% typical
Load regulation	5–7% typical (no compensation)	1% typical (compensation)
Power factor	Shifts output voltage	No problem
Phase shift	Appreciable	None
Response time	25,000 μsec typ.	10–50 μsec typical
Cost, size and weight		Typically 50% less

HOW IT WORKS



Block diagram above shows how regulation is achieved. Output voltage is continuously monitored by a sensor, which uses a zener diode as reference. The associated control circuitry in turn adjusts the clipping level of the pass transistor, to maintain the desired constant output. Economical design with floated reference and a diode bridge makes it possible for the same pass transistor to be used on both halves of the AC cycle. An SCR is used to accommodate short duration surge currents, such as those encountered in charging capacitors, starting motors, or starting lamp loads. Under such conditions, the bias resistor triggers the SCR and the excessive current surge is bypassed around the pass transistor. Should these excessive conditions persist, the input fuse would be blown, protecting the unit. Under normal operating conditions, the SCR is inoperative.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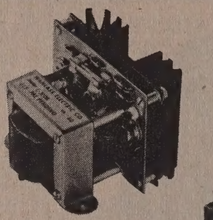
MODEL CVR-120 PEAK REGULATOR (FIG. A)

Solid-state, economical AC voltage regulators, rated 120 V featuring fast response using the Clip-AC principle describ at left. Lightweight and compact, an ideal replacement f ferroresonant-type regulators, offering response time of 10 50 μsec. Insensitive to frequency and power factor. Model CV 120 provides peak regulation for DC power supplies or pea sensitive devices. **Line Regulation:** ±1%. **Load Regulatio** ±1%. **Power Factor Regulation:** CVR-120, ±1%. **AC Inpu** CVR-120, 100–130 VAC, 47–420 Hz, single-phase. **AC Outpu** CVR-120, 135 VAC peak at 120 VA. **Ambient Operating Ten perature:** 0° to 40° C; up to 71° C with proper derating. **Ten perature Coefficient:** ±0.025%/° C. **Size:** 4″ w. x 2½″ d. x 4½″

Wanlass Model	Type	Net Each, Lots of 1-9	10-24	25-49	50-99
CVR-120	Peak	$27.85	$26.45	$25.05	$23.65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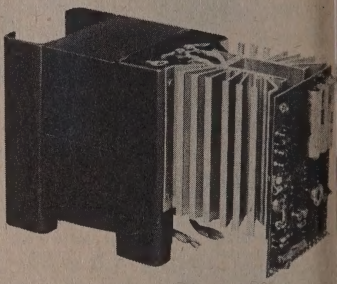

Ⓒ

SERIES C-3000 TRUE RMS AC VOLTAGE REGULATORS (FIG. B)

True AC rms line and load voltage regulators, using Clip-AC principle described above. Regulation is achieved through unique clipping circuit which senses rms and clips output voltage at a fixed rms level. No phase shift. Ideal for photo-optical applications where light intensity must be held constant, as well as other applications requiring regulated rms AC power. **AC Inpu** 100–130 V, 47–420 Hz. **Line and Load Regulation:** ±0.5. **Pow Factor Regulation:** ±0.5% from +0.7 to −0.7. **Response Tim** 10 to 50 μsec. **Ambient Operating Temperature:** 0° to 50°

Wanlass Model	AC Input	Power Rating	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-9	10-24	25-49	50-99
C-3003	100–130 V	30 VA	4 x 2.80 x 1.93	1.5	$ 40.95	$ 38.90	$ 36.86	$ 34.80
C-3006	100–130 V	60 VA	4.12 x 3.75 x 3.00	2.5	48.30	45.90	43.45	41.05
C-3012	100–130 V	120 VA	4.15 x 4.50 x 3.00	3.2	53.55	50.90	48.20	45.50
C-3025	100–130 V	250 VA	9.50 x 6.12 x 5.50	6.5	94.00	89.30	84.60	79.90
C-3050	100–130 V	500 VA	10.88 x 6.12 x 7.25	10.25	131.25	124.70	118.15	111.55
C-3100	100–130 V	1000 VA	16.00 x 6.12 x 7.25	17.5	220.50	209.45	198.25	187.45

BRUTE SERIES HIGH POWER REGULATED DC POWER SUPPLIES (FIG. C)

High current, low cost DC power supplies utilize phase-control principle with ±0.2% or 50 mV line and load regulation. DC output voltage is adjustable either 5–50 volts or 2–25 volts (reconnectable) at 300, 600 or 1200 watts. Operate from 105/130 or 210/260 VAC, 1-phase, 47-63 Hz; frequency insensitive. Ripp 1% rms or 500 mV; ½% when optional ripple reduction is employed.

Wanlass Model	DC Output Volts	DC Output Amps	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-9	10-24	25-49	50-99
Brute I	5-50/2-25	6/12	8 x 11.5 x 6.75	20	$170.00	$162.00	$153.00	$145.00
Brute II	5-50/2-25	12/24	8 x 12 x 6.75	30	220.00	209.00	198.00	187.00
Brute III	5-50/2-25	25/50	11.2 x 14 x 10	50	395.00	375.00	356.00	336.00

Wanlass Option K1—Ten-turn potentiometer for finer resolution of output voltage adjustment control. Net Each..........$21.0

Wanlass Option K2-I—Ripple reduction kit for Brute I; provides for ½% rms ripple. Net Each.......................... 26.2

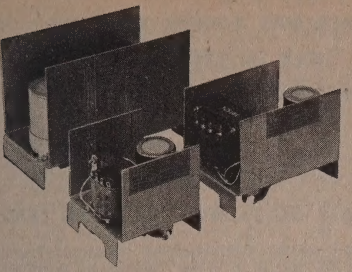
Wanlass Option K2-II—As above, but for Brute II. Net Each................................ 26.2

Wanlass Option K2-III—As above, but for Brute III. Net Each................................ 52.0

Wanlass Option K3—Overvoltage protection unit, OVP-1, for all Brutes; may be used for any DC supply within range 6–60V a 0–500 A. Net Each..$54.6

TELE-DYNAMICS
ANLASS DIVISION OF AMBAC

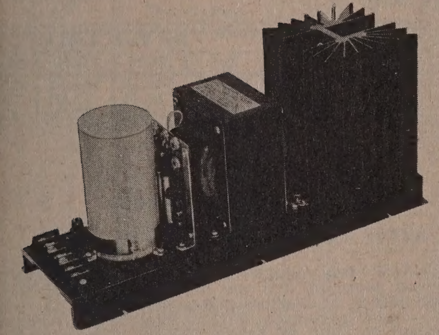
DC POWER SUPPLIES


A

REGULATED DC POWER SUPPLIES (FIG. A)

DC power supplies in ratings of 30, 60 or 120 watts. Feature automatic short circuit protection, floating output grounding (either positive or negative may be grounded), open chassis type construction. Choice of four models in each power rating, with transformer taps and voltage adjustment potentiometer for selection of output voltages from 3.6 to 60 VDC. **AC Input:** 105–125 V, 57–63 Hz, single-phase (47 to 440 Hz with derating). **Regulation:** ±1% for ±10% line change; ±1% for no-load to full load. **Ripple:** 0.1% rms (+10 mV). **Size:** Model 30-OEM, 5″ x 5″ x 5″; 60-OEM, 6″ x 5″ x 7″; 120-OEM, 7″ x 5″ x 10″. Shipping Weight: 30-OEM, 5 lbs.; 60-OEM, 7 lbs.; 120-OEM, 12 lbs.

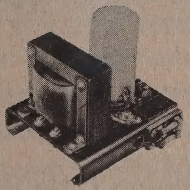
Wanlass Model	Voltage Range	Net Each, Lots of			
		1-9	10-24	25-49	50-99
30-OEM-1	3.6–9 VDC	**$48.30**	**$45.90**	**$43.45**	**$41.05**
30-OEM-2	9–17 VDC	**48.30**	**45.90**	**43.45**	**41.05**
30-OEM-3	17–30 VDC	**48.30**	**45.90**	**43.45**	**41.05**
30-OEM-4	30–60 VDC	**48.30**	**45.90**	**43.45**	**41.05**
60-OEM-1	3.6–9 VDC	**60.40**	**57.35**	**54.35**	**51.35**
60-OEM-2	9–17 VDC	**60.40**	**57.35**	**54.35**	**51.35**
60-OEM-3	17–30 VDC	**60.40**	**57.35**	**54.35**	**51.35**
60-OEM-4	30–60 VDC	**60.40**	**57.35**	**54.35**	**51.35**
120-OEM-1	3.6–9 VDC	**90.55**	**86.05**	**81.50**	**76.80**
120-OEM-2	9–17 VDC	**90.55**	**86.05**	**81.50**	**76.80**
120-OEM-3	17–30 VDC	**90.55**	**86.05**	**81.50**	**76.80**
120-OEM-4	30–60 VDC	**90.55**	**86.05**	**81.50**	**76.80**


B

SERIES IC ALL-SILICON DC POWER SUPPLIES (FIG. B)

All silicon solid state power supplies, specially designed for powering integrated circuits, operational amplifiers and MOS circuits. Available in ratings from 3.6 to 60 volts, 1 to 25 amps. Output voltage is adjustable, ±5% minimum from nominal output. Features "foldback" current limiting and remote sensing. **AC Input:** 100–130 VAC, 47–63 Hz, single-phase. **Ripple:** 5 mV rms maximum. **Recovery Time:** 50–100 μsec. **Line and Load Regulation:** ±0.25%. **Size:** 60-IC, 11.5″ w. x 5.2″ d. x 6.0″ h.; 120-IC, 15.5″ w. x 5.2″ d. x 6.3″ h.; 200-IC, 17.0″ w. x 6.2″ d. x 8.0″ h. Weight: 60-IC, 9 lbs.; 120-IC, 14 lbs.; 200-IC, 19 lbs. For **Overvoltage Protection Crowbar,** add **$20.00** to price.

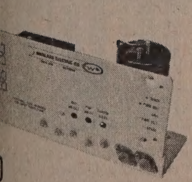
Wanlass Model	DC Output Volts	Output Watts	Net Each, Lots of			
			1-9	10-24	25-49	50-99
60-IC-1	3.6–6.3	7.5 A	**$131.25**	**$124.70**	**$118.13**	**$111.55**
60-IC-2	12–15–18	60	**131.25**	**124.70**	**118.13**	**111.55**
60-IC-3	24–28–36	60	**131.25**	**124.70**	**118.13**	**111.55**
60-IC-4	48–60	60	**131.25**	**124.70**	**118.13**	**111.55**
120-IC-1	3.6–6.3	15 A	**178.50**	**169.60**	**160.65**	**151.75**
120-IC-2	12–15–18	120	**178.50**	**169.60**	**160.65**	**151.75**
120-IC-3	24–28–36	120	**178.50**	**169.60**	**160.65**	**151.75**
120-IC-4	48–60	120	**178.50**	**169.60**	**160.65**	**151.75**
200-IC-1	3.6–6.3	25 A	**236.25**	**224.45**	**212.65**	**200.80**
200-IC-2	12–15–18	200	**236.25**	**224.45**	**212.65**	**200.80**
200-IC-3	24–28–36	200	**236.25**	**224.45**	**212.65**	**200.80**
200-IC-4	48–60	200	**236.25**	**224.45**	**212.65**	**200.80**

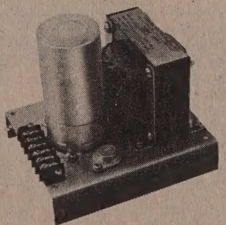

C

MODEL C214-OEM DC SUPPLY (FIG. C)

Specially designed for driving relays, solenoids, motors and other surge-type loads. Provides DC output of 28 volts at 2.5 amps. **AC Input:** 115/230 VAC (±10%), single-phase, 50/60 Hz. **Line and Load Regulation:** ±2%. **Ripple:** 0.1% rms +10 mV. **Operating Temperature:** 0° to 40° C; can be used up to 70° C with derating. **Size:** 6″ w. x 5″ d. x 6.5″ h. Weight, 5.5 lbs.

Wanlass Model	Output Volts	Net Each, Lots of			
		1-9	10-24	25-49	50-99
C214-OEM	28 VDC	**$48.30**	**$45.90**	**$43.45**	**$41.05**




E

III-OHM PRECISION REGULATED ECONOMY DC SUPPLIES (FIGS. D AND E)

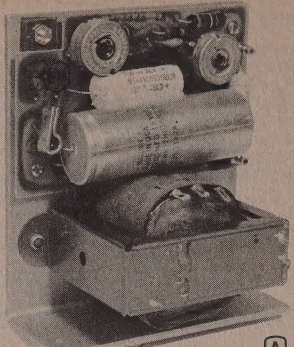
onomy DC power supplies feature excellent regulation and pple, plus: Adjustable automatic current limiting; overload d short circuit protection; adjustable overvoltage crowbar. vailable in nominal DC outputs of 5, 6, 12, 15, 18, 24 and 28 lts; adjustable ±2% from nominal rating without derating; 10% with derating. Input and output are through a terminal rip on the open-type chassis, with clear anodized finish. **AC put:** 115/230 VAC (±10%), single-phase, 57–63 Hz. **Line gulation:** ±0.1% or 10 mV. **Load Regulation:** ±0.1%. **Ripple:** 01% rms or 1 mV. **Size:** III-OEM5-10, 12″ w. x 5″ d. x 6.5″ h., others, 6″ w. x 5″ d. x 5.5″ h. Weight: III-OEM5-10, 14.5 lbs., others, 5.5 lbs.

Wanlass Model	DC Output	Net Each, Lots of			
		1-9	10-24	25-49	50-99
III-OEM5-5	5 V at 5 A	**$94.00**	**$89.30**	**$84.60**	**$79.90**
III-OEM12-5	12 V at 5 A	**94.00**	**89.30**	**84.60**	**79.90**
III-OEM15-4	15 V at 4 A	**94.00**	**89.30**	**84.60**	**79.90**
III-OEM18-3	18 V at 3 A	**94.00**	**89.30**	**84.60**	**79.90**
III-OEM24-2.5	24 V at 2.5 A	**94.00**	**89.30**	**84.60**	**79.90**
III-OEM28-2	28 V at 2 A	**94.00**	**89.30**	**84.60**	**79.90**
III-OEM5-10†	5 V at 10 A	**144.40**	**137.15**	**129.95**	**122.75**

†Fig. D, all others Fig. E.

TELE-DYNAMICS WANLASS DIVISION OF AMBAC

DC POWER SUPPLIES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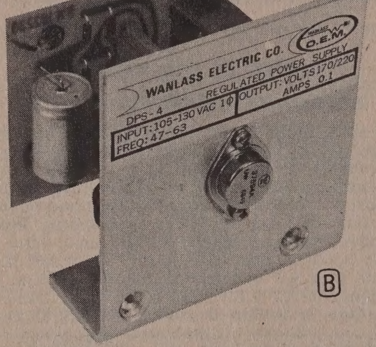

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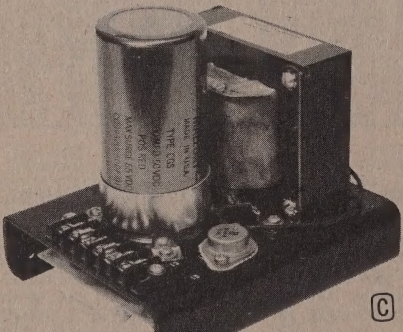
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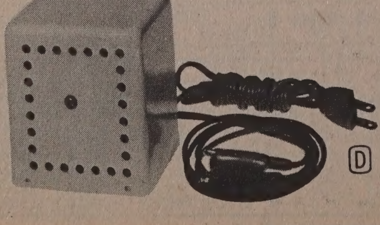

D

ALL DPS POWER SUPPLIES ARE UL LISTED AS A RECOGNIZED COMPONENT

DPS SERIES REGULATED 20 WATT DC POWER SUPPLIES (FIG. A)

Solid state, short circuit and overload protected regulated DC power supplies for use in a wide variety of applications. Si different models for 5/6 V, 12/15 V, or 24 V. All silicon, solid state construction for superior dependability and long life reliability. Overload protected by automatic recovery foldback current limiting. Automatic short circuit protection. **Input:** 115 VAC, single phase, 57–63 Hz. **Regulation:** ±1% each on line and load; filtered to 0.3% rms ripple. **Size:** 4½" x 4" x 2½". Weight, 2 lbs. Compatible with Model OVP-2 over voltage protection device (see on following page).

Wanlass Model	DC Output		Net Each, Lots of			
	Volts	Amps	1-9	10-24	25-49	50-99
DPS-1	5–6	3.0	$25.60	$24.30	$23.05	$21.75
DPS-2	12–15	1.5	25.60	24.30	23.05	21.75
DPS-3	24	1.0	25.60	24.30	23.05	21.75

DPS-4 HIGH VOLTAGE NIXIE POWER SUPPLY (FIG. B)

Unique Clip-AC™ line voltage regulator and DC regulator provides regulated power for 200 volt nixie tube. The clipped AC signal is used both as an alternate and as the input to DC rectifie or filter. DC output is regulated by peak clipping the AC input t the rectifier and the filter. **AC Input:** 105–125 volts; 57 to 63 Hz. **DC Output Voltage:** 200 volts ±20. **DC Output Current:** 100 mA. **Regulation:** Line, ±2%; load, ±12%. **Ripple:** 2% rms max. **Size:** 4" x 4½" x 3⅜". Weight, 2 lbs.

Wanlass Model	DC Output		Net Each, Lots of			
	Volts	Amps	1-9	10-24	25-49	50-99
DPS-4	180–220	0.1	$37.80	$35.90	$34.00	$32.15

I-OEM SERIES REGULATED DC POWER SUPPLIES (FIG. C)

Short circuit and overload protected regulated DC power supplie in eight popular ratings from 5 to 28 volts. Open frame chassi provides easy mounting and low cost. Built-in foldback current limiting provides short circuit and overload protection. Overvoltage protection device (Model OVP-2) available for all ranges (optional). **AC Input:** 115/230 volts; 57 to 63 Hz. **DC Output:** 5 to 28 volts floating; adjustable 5%. **Regulation:** ±1% on line and load each. **Ripple:** 0.1% plus 10 mV rms max. **Size:** 5" x 6" 5½". Weight, 6 lbs.

Wanlass Model	DC Output		Net Each, Lots of			
	Volts	Amps	1-9	10-24	25-49	50-99
I-OEM-5-5	5	5	$63.00	$59.85	$56.70	$53.55
I-OEM-6-5	6	5	63.00	59.85	56.70	53.55
I-OEM-10-5	10	5	63.00	59.85	56.70	53.55
I-OEM-12-5	12	5	63.00	59.85	56.70	53.55
I-OEM-15-4	15	4	63.00	59.85	56.70	53.55
I-OEM-18-3	18	3.3	63.00	59.85	56.70	53.55
I-OEM-24-2.5	24	2.5	63.00	59.85	56.70	53.55
I-OEM-28-2	28	2.1	63.00	59.85	56.70	53.55

"ELIMINATOR" ALL SILICON SOLID STATE 12 VDC POWER SUPPLY (FIG. D)

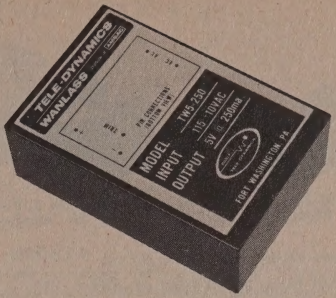
Eliminates need for 12-volt batteries to power DC device Specially protected against inadvertent overloads and dead shor circuits. Operates from 105/125 VAC, 1-phase, 60 Hz; ideal fo driving all 12-volt devices including auto radios, stereos, tap decks and cassettes. Regulated and filtered. Comes with U Recognized 3-wire cord and grounded plug for AC input; outpu leads have alligator clips to DC load.

Wanlass Model	DC Output		Net Each, Lots of			
	Volts	Amps	1-9	10-24	25-49	50-99
BE-12	12	2.0	$26.50	$25.20	$23.85	$22.50

TELE-DYNAMICS
WANLASS *DIVISION OF* AMBAC

DC POWER SUPPLIES

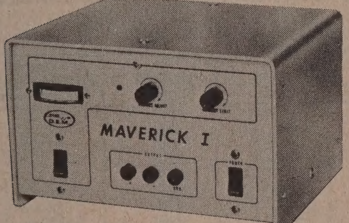
MINIATURE DC POWER SUPPLY—TW/TWD SERIES



niature power supplies of rugged modular construction that
ovide well regulated reliable DC power with no deration over all
ecified conditions. Models available in most commonly used
tput voltage and current ratings to provide power for opera-
nal amplifiers, decimal displays, digital logic, signal conditioners
d instrumentation. TW series units have single output that is
justable ±2% by using an external trim resistor and can be
ed individually or connected in pairs where positive and negative
ltages are required. TWD series units are available for users who
efer dual supply in a single assembly. Output can be shorted
thout causing damage to the supply; however, prolonged opera-
n with the supply overloaded or shorted is not recommended.
ckaging enables either chassis or PC board mounting. Electrical
nnections made with connector pins or soldering. Pin con-
urations and mounting are compatible with most comparable
its in the industry. Threaded inserts are used to secure units to
ounting surface. **Input:** 105 to 125 VAC, single phase, 50 to 400
. **Input Isolation:** 50 megohms. **Output Voltage:** ±2% or
ed values; TW series is trim adjustable within this range.
tput **Impedance:** 0.2 ohms at 10 kHz. **Operating Temperature:**
25° C to +71° C with no derating. **Storage Temperature:**
25° C to +85° C.

Wanlass Model	Description	Output		Regulation		Size, Inches	Net Each, Lots of		
		Volts	mA	Line %	Load %		1-24	25-49	50-99
TW5-250	Single Output Logic Supplies	5	250	±0.05	±0.1	2 x 3 x 1	$35.00	$31.50	$29.75
TW5-500		5	500	±0.05	±0.1	2½ x 3½ x ⅞	44.00	39.60	37.40
TW5-1000		5	1000	±0.05	±0.1	2½ x 3½ x 1¼	65.00	58.50	55.25
TW3.6-250	Single Output General Purpose Supplies	3.6	250	±0.05	±0.05	2 x 3 x 1	38.00	34.20	32.25
TW6-200		6	200	±0.05	±0.05	2 x 3 x 1	38.00	34.20	32.25
TW10-120		10	120	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW12-120		12	120	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW15-100		15	100	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW18-65		18	65	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW20-60		20	60	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW24-50		24	50	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW28-40		28	40	±0.05	±0.05	1¾ x 2¼ x 1	25.00	22.50	21.25
TW170-10	Display Supplies	170	10	±1.0	±1.0	2 x 3 x 1	40.00	36.00	34.00
TW180-10		180	10	±1.0	±1.0	2 x 3 x 1	40.00	36.00	34.00
TWD12-120	Dual Output OP Amp Supplies	12	120	±0.02	±0.02	2½ x 3½ x ⅞	49.00	44.10	41.65
TWD12-240		12	240	±0.02	±0.05	2½ x 3½ x 1¼	73.00	65.70	62.05
TWD15-25		15	25	±0.2	±0.2	2½ x 3½ x ⅞	23.00	20.70	19.55
TWD15-65		15	65	±0.04	±0.02	2½ x 3½ x ⅞	37.00	33.30	31.45
TWD15-100		15	100	±0.03	±0.02	2½ x 3½ x ⅞	48.00	43.20	40.80
TWD15-200		15	200	±0.02	±0.05	2½ x 3½ x 1¼	73.00	65.70	62.05
TWD18-65		18	65	±0.02	±0.05	2½ x 3½ x 1¼	49.00	44.10	41.75
TWD24-50		24	50	±0.02	±0.05	2½ x 3½ x ⅞	49.00	44.10	41.75
TWD26-45		26	45	±0.02	±0.05	2½ x 3½ x 1¼	49.00	44.10	41.75

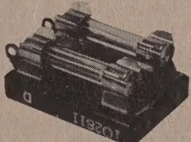
MAVERICK I AND MAVERICK II VARIABLE REGULATED BENCH-TYPE DC POWER SUPPLIES



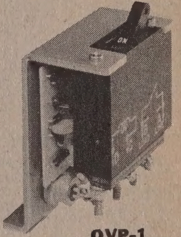
esigned for integrated circuit, MOS and operational amplifier
ads in lab and system equipment. Maverick I provides output
f 0 to 7 VDC at 0 to 5 amps; Maverick II provides dual output
f 0 to 18 VDC at 0 to 1.25 amps. Each protected by adjustable
utomatic recovery current limiting for overloads and short cir-
uits; circuit breaker for AC input protection. Remote sensing
utomatically reverts to local sensing in the event of a broken
r accidentally disconnected sense lead. Bench mount construc-
ion, with clear anodized aluminum finish. **AC Input:** 105–125
AC, 60 Hz single phase. **Load and Line Regulation:** ±0.1%
r ±5 mV. **Ripple:** Less than 1 mV rms. **Output Impedance:** Less
han 10 milliohms, DC to 1 MHz. **Operating Temperature:**
° to 45° C; natural convection cooling. **Controls:** Voltage;
urrent Limit; Meter Switch; On-Off Switch; Dual Meter (0–7 V/
–7 amps DC). **Front Panel Terminals:** Positive and negative
utput; ground. **Rear Panel Terminals:** Positive and negative
utput; ground; remote sense. **Input Cord:** 5-ft. 3-wire utility cord
ith grounded 3-prong plug. **Size:** 8.50″ w. x 5.22″ h. x 7.50″ l.
eight, 9 lbs.

Wanlass Model	DC Output Volts	Net Each, Lots of			
		1-9	10-24	25-49	50-99
Maverick I	0 to 7	$ 93.45	$ 88.80	$ 84.10	$ 79.45
Maverick II	Dual 0–18	131.25	124.70	118.15	111.55

OVP OVERVOLTAGE PROTECTION DEVICES



OVP-2



OVP-1

TYPE OVP-1

Protects power supply and line in 10 millisec. Adjustable from 6 to 60 VDC. **DC Current Range:** 0.5 to 50 amps. **Response Time:** Protects load in 2 µsec when wired for DC-break, local-sense operation. **Shutdown Time:** Protects power supply and line voltage in 10 msec. **DC Voltage Range:** 3.6 to 50 VDC. **Trip Voltage Range:** 6.5 to 60 VDC. **Circuit Breaker Ratings:** DC line, 50 amps at 50 VDC; AC line, 50 amps at 250 VAC. Suited for Tele-Dynamics/Wanlass Brute I, II, and III. Weight, ½ lb.

TYPE OVP-2

Protects voltage sensitive loads such as ICs or MOS/FETs. For Tele-Dynamics/Wanlass DPS or OEM DC power supplies or any 10 amp (or less) protection applications. Protects load in 2 µsec; protects power supply and line in 10 millisec. Weight, 2 oz.

Wanlass Model	Fuse Ratings Amps	VDC	Net Each, Lots of			
			1-9	10-24	25-49	50-99
OVP-1	.5 to 50	......	$54.60	$51.85	$49.15	$46.40
OVP2-53	3	6.8	9.45	9.00	8.50	8.05
OVP2-55	5	6.8	9.45	9.00	8.50	8.05
OVP2-62	3	8.2	9.45	9.00	8.50	8.05
OVP2-65	5	8.2	9.45	9.00	8.50	8.05
OVP2-122	2	15.0	9.45	9.00	8.50	8.05
OVP2-125	5	15.0	9.45	9.00	8.50	8.05
OVP2-154	4	18.0	9.45	9.00	8.50	8.05
OVP2-183	4	22.0	9.45	9.00	8.50	8.05
OVP2-241	1.5 or 1.0	28.0	9.45	9.00	8.50	8.05
OVP2-242	3	28.0	9.45	9.00	8.50	8.05
OVP2-282	2.5	33.0	9.45	9.00	8.50	8.05

Japan Servo Co., Ltd. "M" SERIES MOTORS AND INTERCHANGEABLE GEARHEADS

- **INSTANTLY REVERSIBLE**
- **TOTALLY ENCLOSED**
- **PERMANENTLY LUBRICATED**
- **BALL BEARING CONSTRUCTION**

Size 6, 8 and 10 Pinion Shaft Motors

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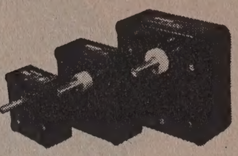

Size 6, 8 and 10 Gearheads

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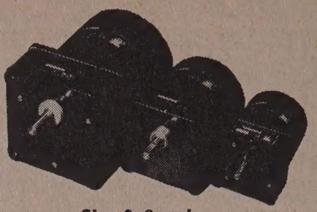


Size 6, 8 and 10 Gearmotors

- **3 Frame Sizes—Rated 1/750 to 1/18 hp**
- **Torque Ratings from 0.7 to 1500 oz.-in.**
- **More than 600 Models Available from Stock**
- **Straight Shaft for Use Alone—or Pinion Shaft for use with Interchangeable Gearheads**
- **Built by JAPAN SERVO COMPANY, Subsidiary of Hitachi, Ltd., Japan's Leading Maker of Precision Motors**

"M" Series motors are precision machined to highest quality standards; utilize permanently lubricated, electronically selected ball bearings. Rabbeted joints and bushed lead-wire openings form a totally enclosed, protected motor housing. All insulation materials are rated Class A or better. Modular concept, using interchangeable gearheads with pinion shaft motors, reduces costly tooling changes and permits a greater number of different models to be manufactured using common parts. Motors and gearheads never need re-oiling, insuring long service without maintenance. Designed for smooth, silent power; geartrains use high precision, accurately hobbed gears housed in a rigid diecast enclosure which combines great structural strength with efficient heat dissipation. Each motor is individually tested and run for six hours.

INDUCTION MOTORS

Most popular type, with low starting current. May be started, stopped and reversed continuously with low-inertia loads. May be stalled at full voltage for short periods without damage. Continuous duty rated. Smooth, quiet and relatively efficient. Speed changes slightly with change in torque load.

1/250 hp MOTORS

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
IM6P3-1800	0.9	140	6G	**$51.50**
IM6P3-900	1.7	140	6G	**51.50**
IM6P3-600	2.6	140	6G	**51.50**
IM6P3-450	3.4	140	6G	**50.50**
IM6P3-360	4.3	140	6G	**50.50**
IM6P3-300	5.2	140	6G	**50.50**
IM6P3-225	6.9	140	6G	**50.50**
IM6P3-180	8.6	140	6G	**50.50**
IM6P3-120	13	140	6G	**49.00**
IM6P3-90	17	140	6G	**49.00**
IM6P3-60	26	140	6G	**49.00**
IM6P3-36	43	94	6G	**49.00**
IM6P3-30	52	78	6G	**49.00**
IM6P3-18	86	55	6G	**48.00**
IM6P3-15	103	46	6G	**48.00**
IM6P3-10	155	31	6G	**48.00**
IM6P3-6	258	18	6G	**48.00**
IM6P3-5	310	15	6G	**48.00**
IM6S3	1500	3.5	6	**36.00**
IM6S3D1	1500/3000	2.0	6	**50.00**

1/50 hp MOTORS

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
IM8P7-1800	0.9	600	8G-3	**$65.50**
IM8P7-900	1.7	600	8G-3	**65.50**
IM8P7-600	2.6	600	8G-3	**65.50**
IM8P7-450	3.4	600	8G-3	**64.00**
IM8P7-360	4.3	600	8G-3	**64.00**
IM8P7-300	5.2	600	8G-3	**64.00**
IM8P7-225	6.9	600	8G-2	**64.00**
IM8P7-180	8.6	600	8G-2	**64.00**
IM8P7-120	13	600	8G-2	**62.00**
IM8P15-90	17	600	8G-2	**62.00**
IM8P15-60	26	600	8G-2	**62.00**
IM8P15-36	43	390	8G-1	**62.00**
IM8P15-30	52	325	8G-1	**60.00**
IM8P15-18	86	196	8G-1	**60.00**
IM8P15-15	103	163	8G-1	**60.00**
IM8P15-10	155	108	8G-1	**60.00**
IM8P15-6	258	65	8G-1	**60.00**
IM8P15-5	310	54	8G-1	**60.00**
IM8S15	1500	13.5	8	**42.00**
IM8S12D6	1500/3000	5.0	8	**60.00**

1/25 hp MOTORS

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
IM10P30-180	8.6	1500	10G-2	**$126.00**
IM10P30-90	17	1500	10G-2	**126.00**
IM10P30-60	26	1340	10G-2	**126.00**
IM10P30-30	52	723	10G-1	**122.00**
IM10P30-15	103	359	10G-1	**122.00**
IM10P30-6	258	145	10G-1	**122.00**
IM10S30	1500	27.8	10	**76.00**
IM10S30D15	1500/3000	13.6	10	**100.00**

Induction motors listed above are also available with the following additional output speeds: 1, 2.1, 3.1, 4.1, 6.2, 8.3, 10, 16, 21, 31, 62, 124 rpm. Also available with dual output speeds.

INDUCTION MOTORS WITH BUILT-IN BRAKING

Induction motor with built-in braking device has same advantages as Type IM, but will stop and reverse direction more rapidly without "coasting". Intended for duty cycles of 30 minutes or less requiring precise positioning or rapid direction reversal with holding brake action.

1/200 hp MOTORS WITH BRAKING

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
RM6P2-1800	0.9	140	6G	**$55.50**
RM6P2-900	1.7	140	6G	**55.50**
RM6P2-600	2.6	140	6G	**55.50**
RM6P2-450	3.4	140	6G	**54.50**
RM6P2-360	4.3	140	6G	**54.50**
RM6P2-300	5.2	140	6G	**54.50**
RM6P2-225	6.9	140	6G	**54.50**
RM6P2-180	8.6	140	6G	**54.50**
RM6P2-120	13	140	6G	**53.00**
RM6P2-90	17	140	6G	**53.00**
RM6P4-60	26	140	6G	**53.00**
RM6P4-36	43	108	6G	**53.00**
RM6P4-30	52	90	6G	**53.00**
RM6P4-18	86	62	6G	**52.00**
RM6P4-15	103	52	6G	**52.00**
RM6P4-10	155	35	6G	**52.00**
RM6P4-6	258	21	6G	**52.00**
RM6P4-5	310	17	6G	**52.00**
RM6S4	1500	4	6	**40.00**

1/35 hp MOTORS WITH BRAKING

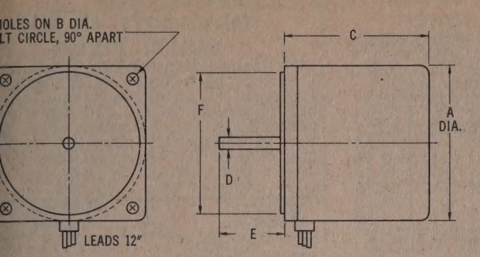
Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
RM8P7-1800	0.9	600	8G-3	**$69.50**
RM8P7-900	1.7	600	8G-3	**69.50**
RM8P7-600	2.6	600	8G-3	**69.50**
RM8P7-450	3.4	600	8G-3	**68.00**
RM8P7-360	4.3	600	8G-3	**68.00**
RM8P7-300	5.2	600	8G-3	**68.00**
RM8P7-225	6.9	600	8G-2	**68.00**
RM8P7-180	8.6	600	8G-2	**68.00**
RM8P7-120	13	600	8G-2	**66.00**
RM8P7-90	17	600	8G-2	**66.00**
RM8P20-60	26	600	8G-2	**66.00**
RM8P20-36	43	590	8G-1	**66.00**
RM8P20-30	52	492	8G-1	**64.00**
RM8P20-18	86	296	8G-1	**64.00**
RM8P20-15	103	247	8G-1	**64.00**
RM8P20-10	155	163	8G-1	**64.00**
RM8P20-6	258	98	8G-1	**64.00**
RM8P20-5	310	82	8G-1	**64.00**
RM8S20	1500	20.4	8	**46.00**

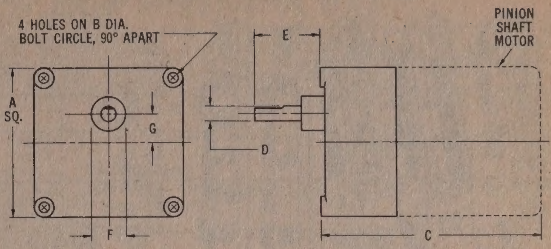
1/15 hp MOTORS WITH BRAKING

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
RM10P40-180	8.6	1500	10G-2	**$130.00**
RM10P40-90	17	1500	10G-2	**130.00**
RM10P40-60	26	1500	10G-2	**130.00**
RM10P40-30	52	1029	10G-1	**126.00**
RM10P40-15	103	515	10G-1	**126.00**
RM10P40-6	258	206	10G-1	**126.00**
RM10S40	1500	39.6	10	**80.00**

Induction motors with braking device listed above are also available with the following additional output speeds: 1, 2.1, 3.1, 4.1, 6.2, 8.3, 10, 16, 21, 31, 62, 124 rpm.

apan Servo Co., Ltd. "M" SERIES MOTORS AND INTERCHANGEABLE GEARHEADS





MOTOR FRAME DIMENSIONS, INCHES

eference	Body Dia., A	Bolt Circle, B	Body Lgth., C	Shaft Dia., D	Shaft Lgth., E	Pilot, F	Shaft Offset, G
6	2.36	2.756	2.56	3/16	0.87	2.126	—
6G	2.36	2.756	3.62	1/4	1.04	0.472	0.394
8	3.15	3.701	2.95	1/4	1.26	2.874	—
8G-1	3.15	3.701	4.25	5/16	1.34	0.709	0.591
8G-2	3.15	3.701	4.49	5/16	1.34	0.709	0.591
8G-3	3.15	3.701	4.84	5/16	1.34	0.709	0.591
10	4.02	4.724	4.06	5/16	1.69	3.701	—
10G-1	4.02	4.724	5.67	3/8	1.26	0.945	0.787
10G-2	4.02	4.724	6.02	3/8	1.26	0.945	0.787

SYNCHRONOUS MOTORS

hronous motors have same advantages as Type IM induction rs, but with constant speed and lower efficiency. Designed for where precise speeds and/or timekeeping properties are ired.

1/375 hp SYNCHRONOUS MOTORS

Model umber	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
P2-1800	1	140	6G	$53.50
P2-900	2	140	6G	53.50
P2-600	3	140	6G	53.50
P2-450	4	140	6G	52.50
P2-360	5	140	6G	52.50
P2-300	6	140	6G	52.50
P2-225	8	140	6G	52.50
P2-180	10	140	6G	52.50
P2-120	15	135	6G	51.00
P2-90	20	100	6G	51.00
P2-60	30	67	6G	51.00
P2-36	50	40	6G	51.00
P2-30	60	34	6G	51.00
P2-18	100	23	6G	50.00
P2-15	120	20	6G	50.00
P2-10	180	13	6G	50.00
P2-6	300	8	6G	50.00
P2-5	360	6	6G	50.00
S2	1800	1.5	6	38.00
6S2D1	1800/3600	0.75	6	60.00

1/75 hp SYNCHRONOUS MOTORS

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
8P5-1800	1	600	8G-3	$67.50
8P5-900	2	600	8G-3	67.50
8P5-600	3	600	8G-3	67.50
8P5-450	4	600	8G-3	66.00
8P5-360	5	600	8G-3	66.00
8P5-300	6	600	8G-3	66.00
8P5-225	8	600	8G-2	66.00
8P10-180	10	600	8G-2	66.00
8P10-120	15	600	8G-2	64.00
8P10-90	20	543	8G-2	64.00
8P10-60	30	362	8G-2	64.00
8P10-36	50	217	8G-1	64.00
8P10-30	60	181	8G-1	62.00
8P10-18	100	109	8G-1	62.00
8P10-15	120	91	8G-1	62.00
8P10-10	180	60	8G-1	62.00
8P10-6	300	36	8G-1	62.00
8P10-5	360	30	8G-1	62.00
8S10	1800	7.5	8	44.00
8S5D2	1800/3600	1.8	8	68.00

1/35 hp SYNCHRONOUS MOTORS

Model Number	Speed, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
10P20-180	10	1500	10G-2	$128.00
10P20-90	20	1108	10G-2	128.00
10P20-60	30	737	10G-2	128.00
10P20-30	60	398	10G-1	124.00
10P20-15	120	199	10G-1	124.00
10P20-6	300	80	10G-1	124.00
10S20	1800	15.3	10	78.00
10S15D7	1800/3600	5.6	10	110.00

chronous motors listed above are also available with the following additional output speeds: 12, 18, 24, 36, 72, 144 rpm. Also ilable with dual output speeds.

VARIABLE SPEED AC MOTORS

Variable speed AC motors feature 15:1 speed ratio with constant torque, tachometer-generator, feed-back regulated solid state control unit, instantly reversible, extremely smooth and quiet operation. AC design eliminates brush replacement and increases life expectancy more than tenfold.

1/250 hp VARIABLE SPEED AC MOTORS

Model Number	Constant Torque Speed Range, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
IMT6P3-1800	.06–.83	140	6G	$115.50
IMT6P3-900	.11–1.7	140	6G	115.50
IMT6P3-600	.17–2.5	140	6G	115.50
IMT6P3-450	.22–3.3	140	6G	114.50
IMT6P3-360	.28–4.2	140	6G	114.50
IMT6P3-300	.33–5.0	140	6G	114.50
IMT6P3-225	0.4–6.7	140	6G	114.50
IMT6P3-180	0.6–8.3	140	6G	114.50
IMT6P3-120	0.8–12.5	140	6G	113.00
IMT6P3-90	1.1–17	140	6G	113.00
IMT6P3-60	1.7–25	121	6G	113.00
IMT6P3-36	2.8–42	73	6G	113.00
IMT6P3-30	3.3–50	60	6G	113.00
IMT6P3-18	6–83	42	6G	112.00
IMT6P3-15	7–100	35	6G	112.00
IMT6P3-10	10–150	23	6G	112.00
IMT6P3-6	17–250	14	6G	112.00
IMT6P3-5	20–300	12	6G	112.00
IMT6S3	100–1500	2.7	6	100.00

1/50 hp VARIABLE SPEED AC MOTORS

Model Number	Constant Torque Speed Range, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
IMT8P15-1800	.06–.83	600	8G-3	$143.50
IMT8P15-900	.11–1.7	600	8G-3	143.50
IMT8P15-600	.17–2.5	600	8G-3	143.50
IMT8P15-450	.22–3.3	600	8G-3	142.00
IMT8P15-360	.28–4.2	600	8G-3	142.00
IMT8P15-300	.33–5.0	600	8G-3	142.00
IMT8P15-225	0.4–6.7	600	8G-2	142.00
IMT8P15-180	0.6–8.3	600	8G-2	142.00
IMT8P15-120	0.8–12.5	600	8G-2	140.00
IMT8P15-90	1.1–17	550	8G-2	140.00
IMT8P15-60	1.7–25	366	8G-2	140.00
IMT8P15-36	2.8–42	220	8G-1	140.00
IMT8P15-30	3.3–50	183	8G-1	138.00
IMT8P15-18	6–83	110	8G-1	138.00
IMT8P15-15	7–100	92	8G-1	138.00
IMT8P15-10	10–150	61	8G-1	138.00
IMT8P15-6	17–250	36	8G-1	138.00
IMT8P15-5	20–300	30	8G-1	138.00
IMT8S15	100–1500	7.6	8	120.00

1/25 hp VARIABLE SPEED AC MOTORS

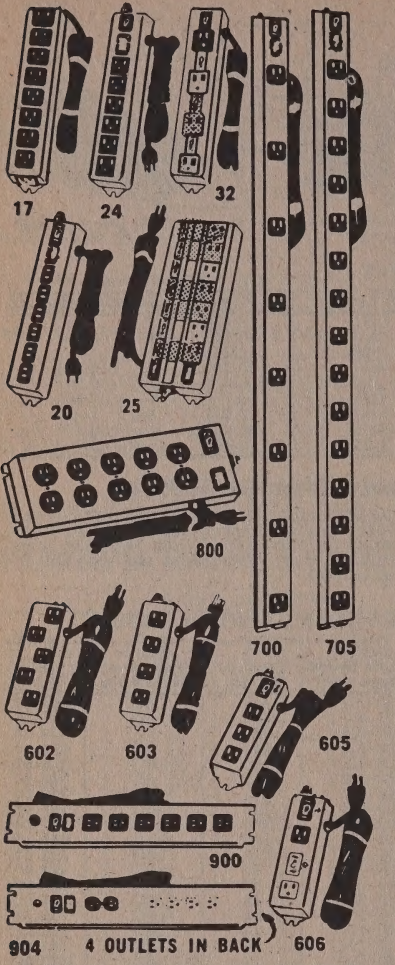
Model Number	Constant Torque Speed Range, rpm	Torque, Oz.-In.	Frame Dimensions, Reference	Net Each
IMT10P30-180	0.6–8.3	1500	10G-2	$200.00
IMT10P30-90	1.1–17	1195	10G-2	200.00
IMT10P30-60	1.7–25	795	10G-2	200.00
IMT10P30-30	3.3–50	429	10G-1	196.00
IMT10P30-15	7–100	215	10G-1	196.00
IMT10P30-6	17–250	86	10G-1	196.00
IMT10S30	100–1500	16.5	10	150.00

Variable speed AC motors listed above are also available in 12 other speed ranges.

WABER ELECTRONICS INC.

Waber Electrical Outlet Strips

MASTER POWER CONTROLS FOR INDUSTRY, LABORATORY OR SERVICE SHOP



All Waber outlet boxes are completely wired for instant use. UL Approved components; steel case has silver-gray textured hammertone finish; tough neoprene cord sets. Rated 15 A, 130 V continuous duty. **Modifications Available to Meet Special Requirements.**

TWO-WIRE OUTLET BOXES

Model 20 has six outlets, pilot light and switch; Model 30, four color-coded outlets and switch.

Waber Model	Type	Cord Lgth.	Net Each
20	Fuse	10 ft.	$7.30
20CB	Circuit breaker	10 ft.	8.80
30	Fuse	10 ft.	8.20
30CB	Circuit breaker	10 ft.	9.70

DELUXE OUTLET BOXES

Seven color-coded switch and outlet sets with master switch, pilot light and center "write-on" marking strip. Model 25 has "U" ground outlets.

25	Fuse	6 ft.	$17.95
25-15	Fuse	15 ft.	19.45
25CB	Circuit breaker	6 ft.	19.45
25CB-15	Circuit breaker	15 ft.	20.95

"POWER POINTER" MASTER CONTROL BOXES

Pilot light on each set of color-coded switched outlets; master switch and pilot light. Series 25P and 35P have 7 outlet sets; 32P, four outlet sets.

25P	Fuse	6 ft.	$20.50
25P-15	Fuse	15 ft.	22.00
25PCB	Circuit breaker	6 ft.	22.00
25PCB-15	Circuit breaker	15 ft.	23.50
32P	Fuse	6 ft.	12.15
32P-15	Fuse	15 ft.	13.65
32PCB	Circuit breaker	6 ft.	13.65
32PCB-15	Circuit breaker	15 ft.	15.15

INLINE OUTLET BOXES

Extra outlet on end for series-string wiring. Model 15 has control unit with 7 "U" ground outlets, switch and pilot light; Model 17, slave with 9 outlets only.

Waber Model	Type	Cord Lgth.	Net Each
15	Fuse	6 ft	$10.35
15-15	Fuse	15 ft	11.85
15CB	Circuit breaker	6 ft	11.85
15CB-15	Circuit breaker	15 ft	13.35
17	Outlets only	6 ft	8.10
17-15	Outlets only	15 ft	9.60

"U" GROUND OUTLET BOXES

Model 24 has six outlets, pilot light and switch; Model 24M, six outlets, switch and edgewise-reading, illuminated 0–150 AC voltmeter; Model 32, four sets of color-coded outlets and switches.

24	Fuse	6 ft.	$ 9.85
24-15	Fuse	15 ft.	11.35
24CB	Circuit breaker	6 ft.	11.35
24CB-15	Circuit breaker	15 ft.	12.85
24M	Fuse	6 ft.	12.60
24M-15	Fuse	15 ft.	14.10
24MCB	Circuit breaker	6 ft.	14.10
24MCB-15	Circuit breaker	15 ft.	15.60
32	Fuse	6 ft.	10.30
32-15	Fuse	15 ft.	11.80
32CB	Circuit breaker	6 ft.	11.80
32CB-15	Circuit breaker	15 ft.	13.30

600 SERIES COMPACT "U" GROUND OUTLET BOXES

Rugged compact design with quality U-ground outlets for schools, labs and industry. All units electrically grounded. Seamless steel case; gray finish. Snap-in components, fuses, circuit breakers are UL Listed. Size, 8⅝" x 2⅜" x 1½". Shpg. Wt.: 6-ft cord set units, 2 lbs.; others, 3 lbs. Model 602, 5 outlets. Model 603, 4 outlets, fuse or circuit breaker. Model 605, 3 outlets, master switch, pilot light and fuse or circuit breaker. Model 606, 2 color coded sets of switch, pilot light and outlet; with fuse or circuit breaker. Model 608, 4 outlets, plus extra outlet on end; cord at other end; fuse or circuit breaker.

602	Outlets only	6 ft.	$ 5.55
602-15	Outlets only	15 ft.	7.05
603	Fuse	6 ft.	6.25
603-15	Fuse	15 ft.	7.75
603CB	Circuit breaker	6 ft.	7.75
603CB-15	Circuit breaker	15 ft.	9.25
605	Fuse	6 ft.	6.90
605-15	Fuse	15 ft.	8.40
605CB	Circuit breaker	6 ft.	8.40
605CB-15	Circuit breaker	15 ft.	9.90
606	Fuse	6 ft.	7.45
606-15	Fuse	15 ft.	8.95
606CB	Circuit breaker	6 ft.	8.95
606CB-15	Circuit breaker	15 ft.	10.45
608	Fuse	6 ft.	7.50
608-15	Fuse	15 ft.	9.00
608CB	Circuit breaker	6 ft.	9.00
608CB-15	Circuit breaker	15 ft.	10.50

POPULAR HOME-OFFICE OUTLET BOXES

Ideal for home or office; skin-packed for pegboard display.

Waber Model 11—Sturdy chrome case has 6 heavy-duty outlets, on-off master switch and pilot light. Ideal for home workshop. Positive circuit brk. protection. Net. **$9.25**

Waber Model 12—Has 4 individually switched, heavy-duty outlets, color-coded for easy identification. Positive circuit breaker protection Net Each..... **$8.05**

Waber Model 601U—Chrome beauty with 3 U-ground outlets in sturdy steel case; on-off master switch and pilot light. Push-to-reset circuit breaker. Net Ea. . **$10.35**

HEAVY-DUTY 2-FOOT OUTLET STRIPS

Convenient two-foot outlet strips ideal for racks, benches and set-ups. Seamless steel case with gray finish. Mounting ears on each end. Pre-wired for instant use. Snap-in components parts, circuit breakers and fuses UL Listed. Size, 24" w. x 2" d. x 1½" h. Mounting centers, 23¾". Shpg. Wt.: 6-ft. cord set units, 4 lbs.; others, 5 lbs. Model 764 has four "U" ground duplexes (eight outlets), neon pilot light, on-off switch, fuse or circuit breaker protection. Model 770 has outlets only.

764	Fuse	6 ft.	$15.45
764-15	Fuse	15 ft.	16.95
764CB	Circuit breaker	6 ft.	16.95
764CB-15	Circuit breaker	15 ft.	18.45
770	Outlets only	6 ft.	13.80
770-15	Outlets only	15 ft.	15.30

HEAVY-DUTY 4-FOOT OUTLET STRIPS

"U" Ground Outlet Types: Model 700 h 8 outlets, pilot light and switch; Mod 705, same but 15 outlets; Model 707, sa but 14 outlets. Model 710 has 8 outl only; Model 711, 14 outlets only; Mod 715, 15 outlets only. Seamless steel ca HSJ cord set UL Approved. Size, 49" w 2" d. x 1½" h. Shpg. Wt., 6 ft. cord uni 6 lbs., others, 7 lbs.

Waber Model	Type	Cord Lgth.	Ne Ea
700	Fuse	6 ft.	$17.
700-15	Fuse	15 ft.	18.
700CB	Circuit breaker	6 ft.	18.
700CB-15	Circuit breaker	15 ft.	20.
705	Fuse	6 ft.	21.
705-15	Fuse	15 ft.	23.
705CB	Circuit breaker	6 ft.	23.
705CB-15	Circuit breaker	15 ft.	24.
707	Fuse	6 ft.	17.
707-15	Fuse	15 ft.	18.
707CB	Circuit breaker	6 ft.	18.
707CB-15	Circuit breaker	15 ft.	20.
710	Outlets only	6 ft.	15.
710-15	Outlets only	15 ft.	16.
711	Outlets only	6 ft.	16.
711-15	Outlets only	15 ft.	17.
715	Outlets only	6 ft.	19.
715-15	Outlets only	15 ft.	21.

RACK MOUNT TYPE

Pre-wired, ready-to-use, master power c trols provide quick and easy power sou for standard relay racks. Choose from variety of configurations with outlets the outside, inside, or combinations both. All have six outlets, pilot lig switch. Outlets front-mounted exce Model 904 which has 2 in front, 4 in ba Model 911 has six outlets in back. Del Model 914 has 6 color-coded switches control 6 outlets on the inside, plus in vidual pilot lights, master switch a master pilot light. HSJ neoprene cord s Steel panel, gray finish. Rated 15 am 130 volts. Size: Models 903 and 911, 19" x 1¾" d.; others, 19" w. x 3½" d. Sh Wt., 3 lbs. for 6-ft. cord units; 4 lbs. 15-ft. cord units.

900	Fuse	6 ft.	$12
900-15	Fuse	15 ft.	14
900CB	Circuit breaker	6 ft.	14
900CB-15	Circuit breaker	15 ft.	15
903	Fuse	6 ft.	12
903-15	Fuse	15 ft.	14
903CB	Circuit breaker	6 ft.	14
903CB-15	Circuit breaker	15 ft.	15
904	Fuse	6 ft.	15
904-15	Fuse	15 ft.	16
904CB	Circuit breaker	6 ft.	16
904CB-15	Circuit breaker	15 ft.	18
911	Fuse	6 ft.	15
911-15	Fuse	15 ft.	16
911CB	Circuit breaker	6 ft.	16
911CB-15	Circuit breaker	15 ft.	18
914	Fuse	6 ft.	23
914-15	Fuse	15 ft.	24
914CB	Circuit breaker	6 ft.	24
914CB-15	Circuit breaker	15 ft.	26

Dust and Safety Covers—For above mo with exposed backs.

Type DC-1—For 904 Series. Net. . . **$4.**
Type DC-5—For 900 Series. Net. . . **4.**
Type DC-11—For 903 Series. Net . **4.**

TEN-SOCKET OUTLET BOXE

Five duplex outlets, a total of ten outl "U" ground type, in deluxe seamless s case. With on-off switch, neon pilot li fuse or circuit breaker protection. S 13⅜" w. x 4⅛" d. x 1½" h. Mount centers, 13" x 2⅞". Shpg. Wt., 3 lbs. units with 6 ft. cord sets; 4 lbs., oth

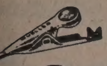
Waber Model	Type	Cord Lgth.	N Ea
800	Fuse	6 ft.	$1
800-15	Fuse	15 ft.	1
800CB	Circuit breaker	6 ft.	1
800CB-15	Circuit breaker	15 ft.	1

VARI-FINE® CONTROLLER

Solid state device for speed and light trol. Provides infinite control of m speed and light intensity, and the spee AC/DC universal type motors. Plugs any wall outlet, fused for circuit pro tion. Compact and portable; moun ears provided for fixed installation. R 5, 7, and 12 amps, 117 volts.

Model 201—Rated 12 amps. Net. **$16.**
Model 200—Rated 7 amps. Net. . **15.**
Model 205—Rated 5 amps. Net. . **12.**

Mueller Test and Battery Clips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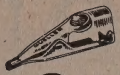
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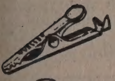
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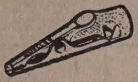
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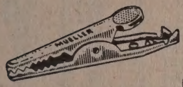

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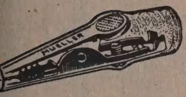

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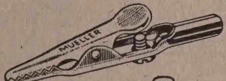

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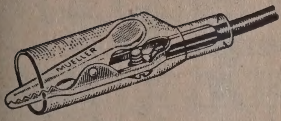

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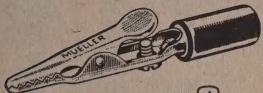

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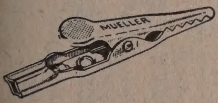

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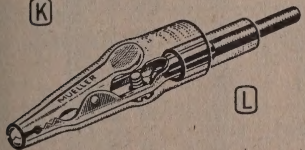

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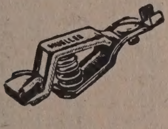

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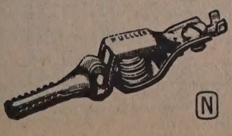


N

34 SERIES MICRO-GATOR CLIPS

Smallest insulated clip ever made. Microscopic tip can be used where no other clip will do: Printed circuits, tight spots and crowded, tiny terminals. Same speed, free-handed ease and convenience as other Mueller clips. When used with separate, skin-tight insulator, the tip is no bigger than the head of a pin; yet, has ample thumb grip. Sure bite to stand up straight on the smallest terminals; 7/32" jaw spread; length, 1 3/32". Solder connection, separate insulator with "lip-action" tip. Locked ear construction for strong hinge. For No. 20 wire or smaller.

Mueller Number	Fig.	Description	Net Each, Lots of 1-9	10	100
34	A	Cadmium-plated steel Micro-gator	$0.08	$0.053	$0.046
34-C	A	Solid copper Micro-gator	.10	.07	.06
36	B	Vinyl insulator*	.05	.035	.03

MINI-GATOR CLIPS

The original miniature alligator clip, improve rivet hinge construction, full-meshing jaw teeth. Ideal for testing miniaturized and subminiaturized equipment. Strong spring gives bite through protective coatings. Easy solder connection. Takes No. 20 or smaller wire. Jaws open 3/16". Length, 1 1/32". Nose 11/64" O.D., including insulator, which has "lip-action" tip.

Mueller Number	Fig.	Description	Net Each, Lots of 1-9	10	100
30	C	Cadmium-plated steel Mini-gator	$0.09	$0.067	$0.058
30-C†	C	Solid copper Mini-gator	.12	.082	.07
32	D	Vinyl insulator*	.05	.035	.03

70 SERIES ALLIGATOR CLIPS

Streamlined, simplified design for low cost efficiency. Cord strain relief ears prevent breakage of lead wire. Makes screw connection faster; soldering easier. Improved meshing teeth; knurled thumb grip and trim shape are ideal for test work in close quarters. Length 1 11/16". Jaws open 5/16". Separate insulator has "lip-action" tip so jaws stay covered whether open or closed.

Mueller Number	Fig.	Term. Type	Body Metal	Net Each, Lots of 1-9	10	100
70	E	Solder	Cadmium-plated steel	$0.09	$0.065	$0.056
70-S	E	Screw	Cadmium-plated steel	.11	.078	.067
70-CS†	E	Screw	Solid copper	.19	.134	.115
72	F	....	Vinyl insulator*	.06	.045	.039

60 SERIES ALLIGATOR CLIPS

New slim-jaw design allows nose of clip to make friction fit in binding post or banana jack. Full meshing teeth grip even finest wires. Barrel connection for banana plug or wire. Small lip for soldering; or, wire may be staked in barrel using staking tool. Strong hinge prevents jaw offset; spring gives hard bite. Available with screw connection, insulated barrel or fully insulated. Jaws open 5/16". Length 2" on uninsulated models; 2 11/32", models with insulated barrel. 63 and 63-C: Length, 2 1/8"; jaws open 1/4"; nose, 13/64" O.D.

UNINSULATED 60 SERIES

Mueller Number	Fig.	Term. Type	Body Metal	Net Each, Lots of 1-9	10	100
60	G	Solder	Cadmium-plated steel	$0.12	$0.083	$0.071
60-S	G	Screw	Cadmium-plated steel	.14	.096	.082
60-NS§	G	Screw	Cadmium-plated steel	.27	.192	.164
60-CS†	G	Screw	Solid copper	.21	.15	.129
60PR-2	K	‡	Cadmium-plated steel	.18	.125	.107
62	H	....	Vinyl insulator*	.06	.045	.039

INSULATED 60 SERIES

60-HS	J	Screw	Cadmium-plated steel; insul. barrel	$0.19	$0.132	$0.113
60-CHS†	J	Screw	Solid copper; insulated barrel	.26	.183	.157
63	L	Screw	Cadmium-plated steel; fully insul.	.26	.183	.157
63-C	L	Screw	Solid copper; fully insulated	.31	.219	.188

PEE-WEE CLIPS (FIG. M)

Very small clip for general test purposes. Jaw teeth mesh. Interlocking necks prevent jaw offset. Jaws open 5/16". Length, 1 1/2". Screw connection. No. 45-C is completely non-ferrous; has phosphor bronze spring and brass screw. Jaws open 1/4".

Mueller Number	Description	Net Each, Lots of 1-9	10	100
45	Cadmium-plated steel Pee-Wee clip	$0.12	$0.082	$0.07
45-C†	Solid copper Pee-Wee clip	.23	.159	.136
47	Vinyl insulator*	.08	.059	.05

CROCODILE CLIPS (FIG. N)

Designed for test work in close quarters. Nesting teeth give solid contact along entire length of jaw. Jaws open 5/16". Length, 2 1/8". Screw terminal connection. No. 85-C is completely non-ferrous version with brass screw and phosphor-bronze spring. No. 85-T is equipped with standard phone tip on one jaw; otherwise is identical to No. 85; permits use as prod or for clip connections, etc.; length, 2 5/8".

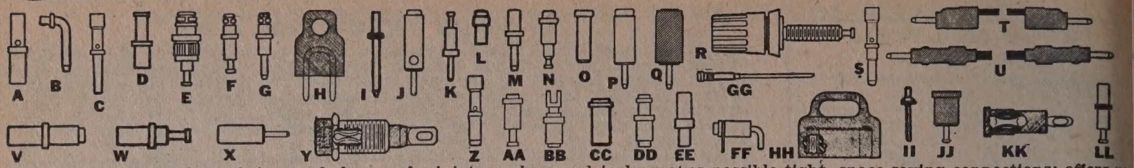
Mueller Number	Description	Net Each, Lots of 1-9	10	100
85	Cadmium-plated steel crocodile clip	$0.14	$0.096	$0.083
85-C†	Solid copper, non-ferrous crocodile clip	.28	.197	.169
85-T	"Tip-clip" cadmium-plated steel crocodile	.37	.257	.22
87	Vinyl insulator*	.08	.059	.05

*Specify red or black; also available in yellow, blue, white or green, priced 10% higher. †Fed. Spec. W-C-440b, Aug. 11, 1970. ‡Crimped barrel for tight friction-fit on standard phone tip or test prod tip. §Like No. 60-S, except with beryllium copper needle in one jaw for making electrical contact through insulation of wire.

CAMBRIDGE THERMIONIC CORPORATION

CAMBION®

MINIATURE PLUG AND JACK CONNECTORS



CAMBION'S wide variety of sizes and shapes of miniature plugs and jacks makes possible tight, space-saving connections; offers reliable "pluggability" for individual components or assemblies and provides unique PC board design possibilities with patching to or from boards. Positive grip, with low contact resistance after may repeated insertions and extractions. Insulated or noninsulated types—units for swaging, dip-soldering, press mount or threaded stud mounting. **To Order:** Use Cambion Type No. (1521); add Dash No. from "Recommended Board Thickness" column to indicate board thickness or patch cord length, as the case may be. Final suffix shown indicates finish; **03**, Gold; **04**, Electro-Tin; **05**, Electro-solder; **08**, Bright Alloy plating.

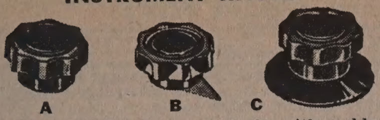
Cambion Type Number	Fig.	Pin Dia.	Description	Recommended Board Thickness per Dash Number					Net Each, Lots of			
				1/32	1/16	3/32	1/8	3/16	25-99	100-499	500-999	1000-2499*
0016-1-03	A	.062	Jack for patch cord use; MS-3190 crimp barrel, size 16						$0.43	$0.33	$0.31	$0.27
1521-1/3-03	B	.040	Pin-plug	−1	−2	−3	....	....	....	.11	.11	.085
1781-1-03	C	.061	Taper pin	....	....	....	....	....	....	.105	.105	.081
2186-1/6-04	D	.061	Taper pin	−1	−2	−3	−4	−5•	....	.075	.075	.058
2265-1/4-03	E	.080	Jack-term.	....	−1	−2	−3	−4	.46	.35	.33	.29
2378-1/5-03	F	.045	Jack-term.	−1	−2	−3	−4	−5	.46	.35	.33	.29
2378-1/5-08	F	.045	Jack	−1	−2	−3	−4	−5	.37	.28	.26	.23
2650-1/5-03	G	.045	Plug-jack	−1	−2	−3	−4	−5	.54	.42	.38	.34
2871-1-03†	H	.040	Shorting plug; pins on .200″ centers						.30	.23	.21	.19
2871-2-03†	H	.040	Shorting plug; pins on .250″ centers						.30	.23	.21	.19
2970-1/3-03	I	.040	Pin	−1	−2	−3	....	....	....	.059	.059	.042
2971-1/3-03	I	.040	Pin	−1	−2	−3	....	....	....	.05	.05	.038
3078-1-03	J	.025	Plug-jack	−1	−2	−3	−4	....	.32	.25	.23	.20
3202-1/3-03	K	.025	Pin	−1	−2	−3	....	....	....	.049	.049	.038
3220-1/4-05	I	.045	Pin	−1	−2	−3	−4	....	....	.034	.034	.026
3230-1-03	L	.025	Jack for .031″ to .062″ boards						.39	.30	.28	.25
3231-1/3-03	I	.025	Pin	−1	−2	−3	....	....	....	.071	.071	.055
3232-1/3-03	I	.040	Pin	−1	−2	−3	....	....	....	.068	.068	.052
3233-1/3-03	I	.040	Pin	−1	−2	−3	....	....	....	.057	.057	.044
3263-1/4-03	M	.025	Plug-jack	−1	−2	−3	−4	....	.44	.34	.31	.28
3266-1/4-03	N	.016/.020	Jack-term.	−1	−2	−3	−4	....	.44	.34	.31	.28
3268-1-03	O	.016/.020	Jack for .031″ to .156″ boards						.39	.30	.28	.25
3278-1-03	P	.040/.080	Plug-jack adapter						.25	.19	.18	.16
3279-1-03	Q	.040/.080	Insulated 3278						.43	.33	.31	.27
3284-1-03*	R	.040	Insulated binding post with insulated jack						.55	.42	.39	.35
3285-1-03*	R	.080	Insulated binding post with insulated jack						.67	.52	.48	.42
3286-1-03	CC	.040	Jack same as 3388, but with thru-hole						.19	.15	.13	.12
3293-1-03	L	.025	Jack same as 3230, but with thru-hole						.19	.15	.13	.12
3299-1/3-03	S	.080	Crimp-barrel plug; pin lgth.: −1 (.200″) −2 (⅜″) −3 (½″)						....	.144	.144	.111
3300-1/3-03†	T	.040	Patch cord	−1 (2″)	−2 (4″)	−3 (6″)	....	....	.88‡	.76	.66	.60
3300-4/5-03†	T	.040	Patch cord	....	....	....	−4 (8″)	−5 (12″)	.93‡	.80	.70	.63
3301-1-03†	T	.040	Patch cord—"Piggy-back assembly"						.43	.33	.31	.27
3306-2/3-03†	U	.040	Patch cord	....	−2 (4″)	−3 (6″)	....	....	.56‡	.48	.42	.38
3306-4/5-03†	U	.040	Patch cord	....	....	....	−4 (8″)	−5 (12″)	.63‡	.54	.47	.43
3308-1-03	O	.040	Pin—I. D. for wire						....	.124	.124	.095
3309-1/4-03	V	.025/.040	Jack-jack	....	−1	−2	−3	−4	.46	.35	.33	.29
3310-1/5-03	M	.040	Plug-jack	−1	−2	−3	−4	−5	.44	.34	.31	.28
3320-1/5-03	W	.040	Jack-term.	−1	−2	−3	−4	−5	.44	.34	.31	.28
3324-1/5-03	W	.062	Jack-term.	−1	−2	−3	−4	−5	.44	.34	.31	.28
3327-1-03	X	.025	Plug-jack adapter—.025 pin/.040 jack dia.						.25	.19	.18	.16
3358-1-03*	Y	.080	Nylon-insulated jack (MS16108-1C thru -11C)						.41	.32	.29	.26
3359-1-0319	Y	.080	Teflon♯-insulated jack (MS16108-12C)						.41	.32	.29	.26
3367-1-03	Z	.040	Jack for patch cord usage						.39	.30	.28	.25
3368-1-03	S	.062	Pin-crimp barrel plug for patch cord use.						....	.134	.134	.103
3375-2/5-03	AA	.025	Rivet-type jack-ter.	....	....	−2	−3	■	.44	.34	.31	.28
3378-1-03	Z	.040	Jack for patch cord usage with 3367 jack						.44	.34	.31	.28
3379-2/5-03	BB	.040	Jack-term.	....	−2	−3	−4	−5	.49	.38	.35	.31
3381-1-03*	Y	.080	Nylon-insulated jack (MS16108-1A thru 11A)						.41	.32	.29	.26
3382-1-0319	Y	.080	Teflon-insulated jack (MS16108-12A)						.43	.33	.31	.27
3388-1-03	CC	.040	Jack for .031″ to .156″ boards						.39	.30	.28	.25
3389-2/3-03†	T	.025	Patch cord	....	−2 (4″)	−3 (6″)	....	....	.88‡	.76	.66	.60
3389-4-03†	T	.025	Patch cord	....	....	....	−4 (8″)	....	.93‡	.80	.70	.63
3390-1-03	S	.025	Plug-jack patch cord assembly with 3078 plug-jack						.36	.28	.26	.23
3391-2/3-03†	T	.080	Patch cord	....	−2 (4″)	−3 (6″)	....	....	1.76†	1.51	1.32	1.20
3391-4/5-03†	T	.080	Patch cord	....	....	....	−4 (8″)	−5 (12″)	1.79‡	1.53	1.34	1.21
3392-1/4-03	DD	.040	Jack-jack	....	−1	−2	−3	−4	.49	.38	.35	.31
3393-1/4-03	I	.025	Pin	−1	−2	−3	−4	....	....	.043	.043	.033
3394-1/4-03	EE	.025	Jack	−1	−2	−3	−4	....	.39	.30	.28	.25
3398-1-03	CC	.080	Jack for .031″ to .250″ boards						.44	.34	.31	.28
3422-1-03	FF	.040	Side mount jack for boards to .078″ max.						.46	.35	.33	.29
3703-1-03	CC	.025	Jack for .031″ to .094″ boards						.19	.15	.13	.12
3704-1-03	CC	.040	Jack for .031″ to .156″ boards						.19	.15	.13	.12
3705-1/3-03†	T	.040	Molded patch cord	−1 (2″)	−2 (4″)	−3 (6″)	....	....	.97‡	.84	.73	.66
3705-4/5-03†	T	.040	Molded patch cord	....	....	....	−4 (8″)	−5 (12″)	1.06‡	.91	.79	.72
3745-1-03	GG	.022 rd.	Jack/Wire Wrap▲ term. for .062″ to .188″ boards						.34	.26	.24	.21
3750-1-03	O	.022 flat	Jack for .031″ to .188″ boards						.19	.15	.13	.12
3771-1-03†	H	.040	Shorting plug; pins on .400″ centers						.34	.26	.24	.21
3771-2-03†	H	.040	Shorting plug; pins on .500″ centers						.34	.26	.24	.21
3772-1/2-03	O	.016/.020	Jack for .031″ to .188″ boards; −2 has thru-hole						.19	.15	.13	.12
3775-1-03†	HH	.040	Shorting jack; jack pins on .200″ centers						.71	.55	.50	.45
3776-1-03†	HH	.040	Shorting jack; jack pins on .400″ centers						.79	.61	.56	.50
3844-1-03	GG	.018 flat	Jack/Wire Wrap term. for .062″ to .188″ boards						.34	.26	.24	.21
3888-1-03	FF	.080	Side mount jack for .125″ max. board thickness						.81	.62	.58	.51
3889-1-03	II	.025	Pin for 1/32″ board thickness						....	.055	.055	.042
4351-1-03§	JJ	.045	Teflon-insulated jack for .031″ to .094″ boards						.70	.54	.50	.44
4352-1-03§	JJ	.040	Teflon-insulated jack for .031″ to .094″ boards						.39	.30	.28	.25
4353-1-03§	JJ	.040	Teflon-insulated jack for .031″ to .094″ boards						.39	.30	.28	.25
4354-1-03§	KK	.080	Teflon-insulated jack for .031″ to .125″ boards						.49	.38	.35	.31
4355-1-03§	KK	.080	Teflon insulated jack for .031″ to .125″ boards						.27	.21	.19	.17
7004-1-03	O	.030	Jack for .031″ to .188″ boards						.39	.30	.28	.25
7005-1/5-03	LL	.030	Jack	−1	−2	−3	−4	−5	.44	.34	.31	.28

*Available with black (suffix **10**) or red (suffix **12**) insulation. †Available with black (suffix **10**), red (suffix **12**) or blue (suffix **16**) wir insulation. §Available with black (suffix **10**), red (suffix **12**) or white (suffix **19**) insulation. ♯Reg. DuPont TM. •Use **-6** for ¼″ bd. thickness. ■Order **-4** for 5/32″ bd. thickness, **-5** for 7/32″ bd. thickness. ▲Reg. Gardner-Denver TM. ‡Lots of 10–99.

Larger Quantity Prices on Request. SEND FOR CAMBION CATALOG FOR DATA ON ALL PRODUCTS.

H. H. Smith Knobs, Jacks, Plugs

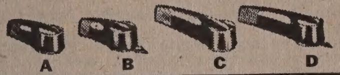
INSTRUMENT KNOBS



lded black Bakelite® instrument knobs with molded-in brass rt for ¼″ shafts. **Style B** has white vinyl pointer. **Style C** is t type with white indicator line. **Style D** is similar to Style A ept with protruding brass insert for mounting special dials pointers. ®Registered Bakelite Corp. trademark.

H. Smith No.	Style	O.D.	Special	Height	Net Each
2200	A	1⅛″	....	⅝″	$0.40
2201	A	1⅜″	....	11/16″	.44
2202	A	1⅝″	....	¾″	.47
2203	A	2⅜″	....	⅞″	.69
2204	B	1⅛″	¾″ pointer	11/16″	.62
2205	B	1⅜″	1 1/16″ pointer	¾″	.68
2206	B	1⅝″	1 3/16″ pointer	13/16″	.75
2207	B	2⅜″	1 9/16″ pointer	15/16″	.91
2208	C	1⅛″	1½″ skirt	13/16″	.87
2209	C	1⅜″	1¾″ skirt	⅞″	.95
2210	C	1⅝″	2 1/16″ skirt	29/32″	.98
2211	C	2⅜″	3″ skirt	1 1/32″	1.29
2212	D	1⅛″	....	23/32″	.50
2213	D	1⅜″	....	25/32″	.55
2214	D	1⅝″	....	27/32″	.56
2215	D	2⅜″	....	31/32″	.78

LEVER KNOBS WITH ¼″ BRASS INSERT



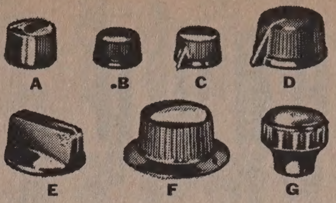
H. Smith No.	Style	Length	Height	Color	Net Each
2232	A	1⅝″	19/32″	Black	$0.35
2233	A	1⅝″	19/32″	Walnut	.35
2234	B	1 15/16″	19/32″	Black	.59
2235	B	1 15/16″	19/32″	Walnut	.59
2236	C	2½″	⅝″	Black	.35
2237	C	2½″	⅝″	Walnut	.35
2238	D	2 13/16″	⅝″	Black	.58
2239	D	2 13/16″	⅝″	Walnut	.58

METER OR INSTRUMENT CASES

Molded black with four brass inserts for cover mounting. **No. 2257:** 6 13/16″ x 5 9/32″ x 2 5/16″. **No. 2255:** 6¼″ x 3¾″ x 2″. **No. 2289:** 7 7/16″ x 8½″ x 3″.

H.H.S. No.	Insert	Description	Net Each
2255	6-32	Small case	$0.85
2257	4-36	Medium case	1.50
2289	6-32	Large case	2.00
2256	......	Cover for 2255	.70
2260	......	Cover for 2257	1.00

CONTROL KNOBS

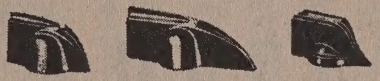


Molded Bakelite control knobs. Supplied with ¼″ molded hole. Complete with set screw.

H. H. Smith No.	Style	O.D.	Height	Color	Net Each
2240	A	¾″	19/32″	Black	$0.22
2241	A	¾″	19/32″	Walnut	.22
2242	B	11/16″	13/32″	Black	.10
2243	B	11/16″	13/32″	Walnut	.14
2244*	B	1″	½″	Black	.18
2245*	B	1″	½″	Walnut	.19
2246	C	11/16″	13/32″	Black	.10
2247	C	11/16″	13/32″	Walnut	.14
2248*	D	1″	½″	Black	.23
2249*	D	1″	½″	Walnut	.24
2250*	E	1⅛″	9/16″	Black	.20
2251*	E	1⅛″	9/16″	Walnut	.20
2252*	F	1½″	11/16″	Black	.25
2253*	F	1½″	11/16″	Walnut	.26
2254*	F	1½″	11/16″	Ivory	.27
2258	G	⅞″	¾″	Black	.23
2259	G	⅞″	¾″	Walnut	.24

*Recessed for locknut.

POINTER KNOBS



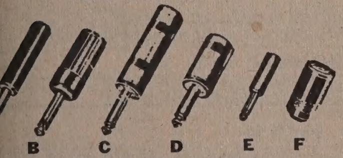
A
Length 1¼″
Height ⅝″

B
Length 2″
Height ⅝″

C
Length 1¼″
Height 9/16″

H. H. Smith No.	Style	Type Hole	Color	Net Each
2220	A	¼″ plain	Black	$0.11
2221	A	¼″ plain	Walnut	.16
2222	A	¼″ plain	Ivory	.18
2223	A	¼″ brass insert	Black	.17
2224	A	¼″ brass insert	Walnut	.23
2225	A	¼″ brass insert	Red	.24
2226	B	¼″ plain	Black	.26
2227	B	¼″ plain	Walnut	.27
2228	B	¼″ brass insert	Black	.36
2229	B	¼″ brass insert	Walnut	.36
2230	C	¼″ plain	Black	.20
2231	C	¼″ plain	Walnut	.20

PHONE PLUGS



STANDARD TYPE

H.S. lo.	Fig.	Handle	Conductors	Net Each
25	A	Bakelite*	2-Solder	$0.56
07	A	Bakelite*	2-Screw	.66
08	A	Bakelite*	3-Solder	.83
09	A	Bakelite*	3-Screw	.94
26	C	Brass	2-Solder	.79
16	C	Brass	2-Screw	.93
11	C	Brass	3-Solder	1.10
12	C	Brass	3-Screw	1.21
22	B	Bakelite*	2-Screw	.63
27	B	Bakelite*	3-Solder	.88
72	C	Brass	2-Screw	1.10
38	C	Brass	3-Solder	1.27
52	D	Brass	2-Screw	.99
28	D	Brass	3-Solder	1.15

MINIATURE TYPE

80	E	Bakelite†	2-Solder	$0.70
81	E	Brass	2-Solder	1.00

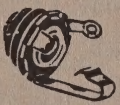
pecify red or black. †Gray only.

MINIATURE EXTENSION JACK (FIG. F)

ielded, nickel-plated brass with temred spring and Bakelite insulation. ates with miniature phone plugs.

H. Smith No. 487—Net Each. . **$1.21**

TELEPHONE TYPE JACKS

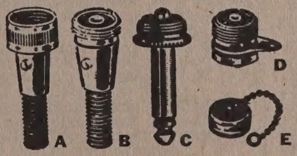


Open or closed Circuits.
2 or 3 Conductor Types.

H.H.S. No.	Description	Net Each
275	Open Circuit, 2-Cond.	$0.33
276	Closed Circuit, 2-Cond.	.39
277	Open Circuit, 3-Cond.	.43
278	Closed Circuit, 3-Cond.	.66
482*	Open Circuit, 2-Cond.	.46
483*	Closed Circuit, 2-Cond.	.50

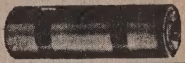
*Miniature type.

MICROPHONE CONNECTORS



H.H.S. No.	Fig.	Description	Net Each
116	A	Single Cont. Female	$0.48
115	B	Single Cont. Male	.39
113	C	Phone Plug Adapter	.45
117	D	Chassis Connector	.36
118	E	Cap and Chain	1.10
484	A	Min. Female Single	.43
485	B	Min. Male Single	.33

INLINE PHONE JACKS



H. H. S. No.	Handle	Conductors	Net Each
274	Bakelite	2-Solder	$0.77
273	Shielded	2-Solder	1.10
288	Bakelite	2-Screw	.88
289	Shielded	2-Screw	1.21

LACING CORD

NYLON

H. H. S. No.	Class	Test, Lbs.	Yards	Net Each
734	1	70	600	$ 9.90
735	2	48	800	10.30
736	3	32	1140	10.60

LINEN

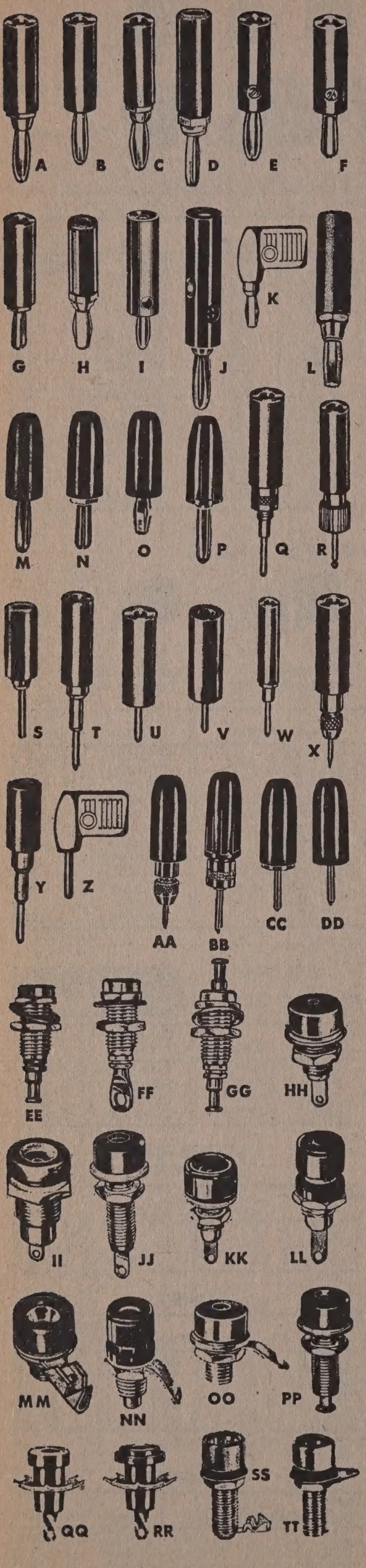
H.H.S. No.	Ply	Test, Lbs.	Yards	Tube, Oz.	Net Each
727	4	20	850	16	$6.60
730*	6	42	600	16	6.60
739†	8	56	470	16	6.60
733	9	60	400	16	6.60
742♯	12	77	300	16	6.60

*Class 3. †Class 2. ♯Class 1.

DACRON

H.H.S. No.	Class	Test	Yards	Net Each
722	1	78 lbs.	750	$11.60
723	2	57 lbs.	1000	12.10
724	3	37 lbs.	1500	12.70

H. H. Smith Jacks and Plugs



INSULATED BANANA PLUGS*

H. H. S. No.	Fig.	Description	Net Each
212	A	Solderless with nickel-plated phosphor bronze spring; wire may also be soldered to brass stud or directly into plug; 1″ handle	$0.33
232	A	Same as above, but with silver-plated spring	.37
242	A	Same, but with nickel-plated beryllium copper spring	.39
262	A	Same, but with silver-plated beryllium copper spring	.42
211	B	Solderless with nickel-plated phosphor bronze spring; 1″ handle	.28
261	B	Same, but with silver-plated spring	.31
271	B	Same, but with nickel-plated beryllium copper spring	.33
281	B	Same, but with silver-plated beryllium copper spring	.37
295	C	Screw-term. solderless; nickel-plated phos. bronze spring; 1″ handle	.33
296	C	Same, but with silver-plated spring	.37
297	C	Same, but with nickel-plated beryllium copper spring	.39
298	C	Same, but with silver-plated beryllium copper spring	.42
239	D	Internal spring collet solderless; phosphor bronze nickel-plated spring; 1¼″ machined butyrate handle—specify red or black	.55
236	D	Same, but cross-drilled hole in spacer for solderless connection	.50
204	E	Set-screw solderless; nickel-plated phosphor bronze spring; 1″ handle	.28
254	E	Same, but nickel-plated beryllium copper spring	.33
213	F	Split type with side screw; cross-slotted for spring tension	.22
253	G	Soldered or solderless with internal stud; cross-slotted; 1″ handle	.25
291	H	Stud-soldered midget plug with ⅝″ machined butyrate handle; $1\frac{3}{32}$″ plug with nickel-plated phos. bronze spring; specify red or black	.28
292	H	Same, but silver-plated spring	.31
293	H	Same, but nickel-plated beryllium copper spring	.33
294	H	Same, but silver-plated beryllium copper spring	.37
214	I	Adapts tip plug to banana plug; molded butyrate handle with jack for tip plug; nickel-plated phosphor bronze spring; red or black	.55
1511	J	Solderless banana plug; banana plugs in top and side of machined butyrate handle for unlimited, multiple circuits; phosphor bronze nickel-plated spring; specify red, black, yellow or green	.39
1512	J	Same, but beryllium copper spring	.49
255	K	Meter plug with 4-leaved nickel-plated phosphor bronze spring; specify red or black	.44
285	L	Giant type with machined phenolic plastic handle, deep solder well; 6-leaved phosphor bronze nickel-plated spring; specify red or black	.88
476	M	Molded nylon plug; soldered or solderless; phosphor bronze nickel-plated spring; specify color†	.31
477	M	Same, but silver-plated phosphor bronze spring; specify color†	.34
478	M	Same, but nickel-plated beryllium copper spring; specify color†	.37
479	M	Same, but silver-plated beryllium copper spring; specify color†	.40
494	N	Solderless split-type plug with molded nylon handle; specify color†	.28
426	O	Midget version of No. 476; specify color†	.26
427	O	Midget version of No. 477; specify color†	.29
428	O	Midget version of No. 478; specify color†	.31
429	O	Midget version of No. 479; specify color†	.35
455	P	Solderless wrap-around version of No. 476; specify color†	.28
456	P	Solderless wrap-around version of No. 477; specify color†	.31
457	P	Solderless wrap-around version of No. 478; specify color†	.33
458	P	Solderless wrap-around version of No. 479; specify color†	.37

INSULATED TIP PLUGS*

H. H. S. No.	Fig.	Description	Net Each
200	Q	Solderless threaded type; 1″ handle; 2⅛″ long	$0.19
201	Q	Same, but slightly smaller; 1″ handle; $1\frac{19}{32}$″ long	.19
250	R	Sig. C. approved; prod tip recess holds plugs firmly; has 1″ ethyl cellulose handle; specify red or black	.66
358	R	Same, but with 3″ handle	.99
237	S	Easy-solder hollow tip; ⅝″ molded butyrate handle, red or black	.14
229	T	Heavy duty, easy solder connection; 1″ handle, 2⅛″ long	.19
203	U	Short tip plug inserts flush to handle; 1″ handle; 1½″ long	.15
283	V	Same as above, but solderless connection	.17
270	W	Subminiature tip with 1″ fiber handle; specify red or black	.22
216	X	Phono needle tip with removable chuck; 1″ handle; 1⅞″ long	.28
215	Y	Std. tip plug with jack for banana plug; ¾″ molded butyrate handle; specify red or black	.19
235	Z	Meter tip plug molded in two halves; specify red or black	.33
493	AA	Removable chuck type with molded nylon handle and phono needle; specify color†	.31
490	BB	Solderless type with molded nylon handle; specify color†	.22
492	CC	Short version of above without knurled collar; specify color†	.22
491	DD	Short tip plug; inserts flush to nylon handle; specify color†	.18

INSULATED JACKS‡

H. H. S. No.	Fig.	Description	Net Each
1501	EE	Nylon tip jack with metal shell; wrap-around type; specify color†	$0.33
1502	FF	Same, but spade terminal type; specify color†	.47
1503	GG	Same, but feed-thru type; specify color†	.43
1505	EE	Same as 1501 but all-nylon construction; specify color†	.24
1506	FF	Spade terminal version of 1505; specify color†	.33
1507	GG	Feed-thru version of 1505; specify color†	.31
202	HH	Molded thermosetting plastic head; phone tip; mounted in $\frac{5}{16}$″ hole	.17
223	HH	Same, but machined butyrate; specify red, black, yellow or green	.28
240	II	Molded nylon tip jack rated 5,000 VAC, 60 Hz; specify color§	.22
206	JJ	Molded thermosetting plastic head combo jack takes standard phone or banana plugs	.22
282	KK	Molded thermosetting plastic head meter type; specify color§	.26
241	LL	Molded nylon head; insulated from panel; specify color§	.30
219	MM	Molded thermosetting plastic head banana jack; recessed body	.20
221	NN	Nylon head and washer; insulated from panel; for standard banana plugs; specify color§	.28
205	OO	Molded thermosetting plastic head banana jack	.17
256	PP	Molded thermosetting plastic head banana jack; turret terminal	.20
279	QQ	Phone tip jack with dished lockwasher "speedi-mount"; molded thermosetting plastic body; $1\frac{3}{32}$″ dia. head	.09
299	RR	Same as 279 except ½″ dia. head	.09
286	SS	Giant banana jack; fits ½″ hole; panel to ¾″; tinned copper lug; machined butyrate head; specify red or black	.61
287	TT	Same as 286 except brass tinned lug	.61

*Molded thermosetting plastic handle unless otherwise noted. Standard colors: re black, yellow, green, blue or white except as otherwise noted. †For colors add suffi **-101**, white; **-102**, red; **-103**, black; **-104**, green; **-105**, blue; **-106**, orange; **-107**, yello **-108**, brown; **-112**, purple; **-113**, gray. ‡Standard colors: Red, black, yellow, green, blu or white except as otherwise noted. §Specify red, black, yellow, green or blue.
***Lots of 1–499, Net; 500–999, —16⅔%.**

NON-INSULATED BANANA PLUGS AND JACKS

S.	Fig.	Description	Net Each*
	A	3/8″ threaded stud; hex brass body; nickel-plated phos. bronze spring	$0.28
	B	1/2″ threaded stud; hex brass body; nickel-plated phos. bronze spring	.28
	C	Screw-on type; hex brass body; nickel-plated phos. bronze spring	.28
	C	Same, but with beryllium copper spring	.33
	D	1/2″ threaded stud; hex brass body; split type banana plug	.19
	E	Midget rivet type; silver-pl. brass body; phos. bronze silvered spring	.20
	F	Soldered or solderless type with hex body; phos. bronze spring	.28
	F	Same, but beryllium copper spring	.33
	G	6-32 x 3/8″ stud type; hex body; phos. bronze spring nickel-plated; 1 3/16″ h.	.28
	G	Same, but 6-32 x 1/2″ stud; 1 5/16″ h.	.28
	G	Same, but 6-32 x 3/4″ stud; 1 9/16″ h.	.28
	G	Same, but 8-32 x 3/8″ stud; 1 3/16″ h.	.28
	G	Same, but 8-32 x 1/2″ stud; 1 5/16″ h.	.28
	G	Same, but 8-32 x 3/4″ stud; 1 9/16″ h.	.28
	H	6-32 x 3/8″ stud type; hex body; phos. bronze spring nickel-plated; 1 5/32″ h.	.28
	H	Same, but 6-32 x 1/2″ stud; 1 9/32″ h.	.28
	H	Same, but 6-32 x 3/4″ stud; 1 17/32″ h.	.28
	H	Same, but 8-32 x 3/8″ stud; 1 5/32″ h.	.28
	H	Same, but 8-32 x 1/2″ stud; 1 9/32″ h.	.28
	H	Same, but 8-32 x 3/4″ stud; 1 17/32″ h.	.28
	I	Midget 4-40 x 3/8″ stud; nickel-plated phos. bronze spring; 15/16″ h.	.22
	I	Same, but 4-40 x 1/2″ stud; 1 1/16″ h.	.22
	I	Same, but 6-32 x 3/8″ stud; 15/16″ h.	.22
	I	Same, but 6-32 x 1/2″ stud; 1 1/16″ h.	.22
	J	Midget cross-slotted body type; 10-32 x 21/64″ stud; 29/32″ h	.14
	K	Midget banana jack accepts No. 111 plug	.10
	L	Submin. rivet type plug; silver-plated beryl. copper spring; 37/64″ h.	.19
	M	Submin. 2-56 stud type plug similar to No. 191	.19
	N	Submin. jack rivets direct to chassis or PC board	.10
	O	Submin. jack rivets direct to chassis or PC (Package of 100)	.15
	P	Hex body jack with recessed head; fits 1/4″ hole; panels to 5/16″ thick	.17
	Q	Std. hex head banana jack fits 1/4″ hole; panels to 3/8″ thick	.17
	R	Giant plug with deep solder well; 6-leaved phos. bronze spring	.61
	S	Same, but screw fit instead of stud	.50
	T	Same as No. 186 but slimmer base	.50
	U	Giant banana jack fits 3/8″ hole; panels to 1/2″ thick	.44

: The following types are also available as specified. For silver-plated phosphor ze spring: Add **3c** to price and *add **6** to number (431 becomes 437); †add **7** to num- ‡add **4** to number. For nickel-plated beryllium copper spring: Add **4c** to price and **12** to number; †add **13** to number; ‡add **3c** to price and add **8** to number. For silver- d beryllium copper spring: Add **7c** to price and *add **18** to number; †add **19** to ber; ‡add **6c** to price and add **12** to number.

NON-INSULATED TIP PLUGS AND JACKS

	Fig.	Description	Net Each*
	V	Solderless with knurled collar force fit; 1 29/64″ h.	$0.17
	W	Smaller version of above; 1 3/16″ h.	.17
	X	Heavy-duty force fit type; large soldering well; accepts standard banana plugs; 1 13/32″ h.	.15
	Y	Standard solder type; 1″ long (Package of 100)	**
	Y	Large I.D. solder type; 1″ long (Package of 100)	††
	Z	Drawn (all-hollow) solder type; 15/16″ long (Package of 100)	‡‡
	AA	Threaded solderless type; knurled collar; will fit plastic handle; 1 7/16″ h.	.17
	BB	Smaller version of above; 1 3/16″ h.	.17
	CC	Heavy duty threaded type; extra large solder well; 1 3/8″ h.	.17
	DD	Needle tip with removable chuck; 1 5/32″ h.	.25
	EE	Phone tip jack with hex nut; fits 1/4″ hole; panels to 3/8″ thick	.17
	FF	Headless version of above used with plastic cases	.15

per package of 100: ****$3.30; ††$4.40; ‡‡$2.00.**

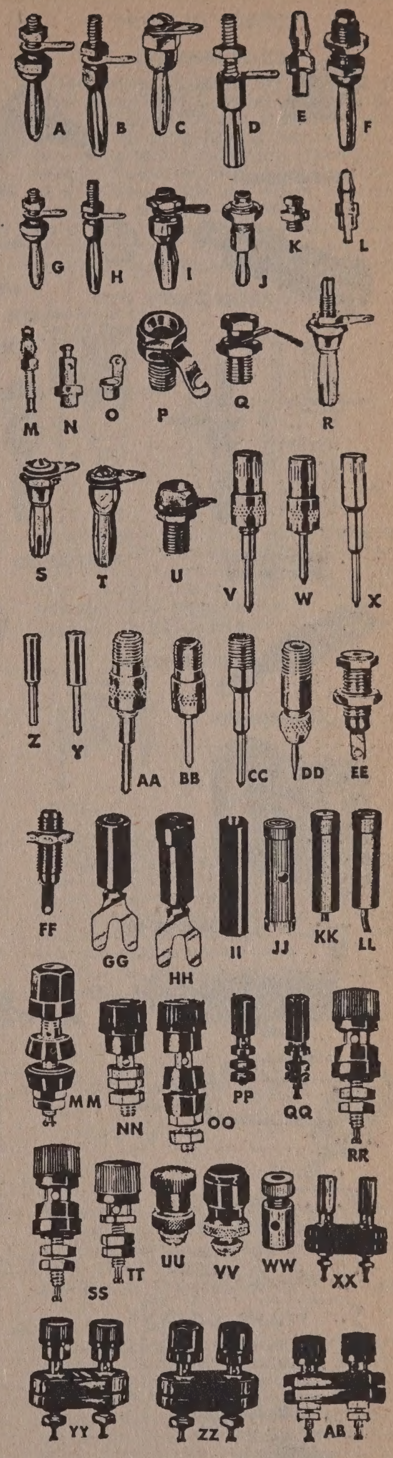
TEST LEAD ACCESSORIES

	Fig.	Description	Net Each*
	GG	Plastic handle spade lug; accepts banana plug; specify red or black	$0.16
	HH	Phone tip to space lug adapter; plastic handle; specify red or black	.44
	II	Banana plug splice of plastic; specify red, black, yellow or green	.28
	JJ	Phone tip plug splice of plastic; specify red, black, yellow or green	.33
	KK	Inline phone tip jack of plastic; specify red, black, yellow or green	.23
	LL	Inline banana jack of plastic; specify red, black, yellow or green	.23

BINDING POSTS

	Fig.	Description	Net Each*
	MM	Multi-purpose with banana plug receptacle, wire hole, washer hole, production punch and non-removable nylon head. For 1/16″–1/4″ panels. Rated 30 amps, 2000 VAC rms test. Specify red, black, yellow, blue, green, white	$0.55
	NN	5-way grounding type, red or black plastic, captive head; 8-32 thd.	.25
	NN	Same, but 6-32 threaded stud	.25
	NN	Same, 8-32 thd., with nickel-plated brass insert in head	.30
	NN	Same as No. 230 with nickel-plated brass insert in head	.30
	OO	All insulated version of No. 220; red or black plastic, captive head	.50
	OO	Same, but 6-32 threaded stud	.50
	OO	Same as No. 260 with nickel-plated brass insert in head	.55
	OO	Same as No. 259 with nickel-plated brass insert in head	.55
	PP	Metal 5-way post has captive hex nickel-plated brass head	.33
	QQ	Same as No. 137 but with wrap-around terminal	.39
	RR	Molded nylon grd. type with nickel-plated brass insert; red or black	.39
	SS	Same, but with Bakelite washer to insulate from chassis; red or black	.39
	TT	Molded nylon grounding type; nickel-plated brass insert; red or black	.33
	UU	Molded plastic post; brass threaded insert; specify red or black	.28
	VV	Molded plastic post; brass threaded insert; specify red or black	.28
	WW	Nickel-plated brass post for phone tips or banana plugs	.26
	UU	Nickel-plated brass post with screw and lockwasher	.28
	XX	Dual assembly; metal heads; molded black styrene insul. cross-slotted for forward or sideways phone tip insertion	.94
3B	YY	Dual assembly; black plastic heads; styrene washer cross-slotted	.77
RR	YY	Same, both heads red	.77
RB	YY	Same, one red and one black head	.77
3B	YY	Same as 224 but with nickel-plated brass insert in head; black	.88
RR	YY	Same, both heads red	.88
RB	YY	Same, one red and one black head	.88
3B	ZZ	Same as No. 263, but heads are molded nylon; both heads black	1.05
RR	ZZ	Same, both heads red	1.05
RB	ZZ	Same, one red and one black head	1.05
3B	AB	Same as No. 263, but heads are molded nylon; both heads black	.77
RR	AB	Same, both heads red	.77
RB	AB	Same, one red and one black head	.77

ts of 1-499, Net; 500-999, —16⅔%.



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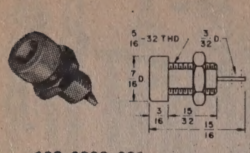
BANANA JACKS AND PLUGS, PATCHCORD STACKING PLUG



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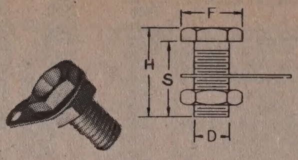

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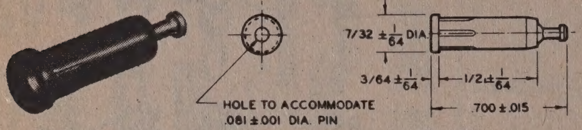

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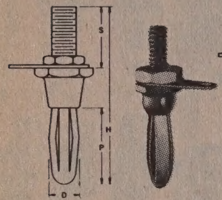

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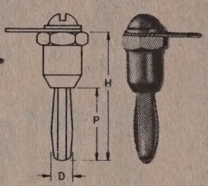

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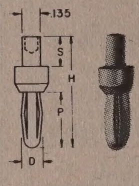

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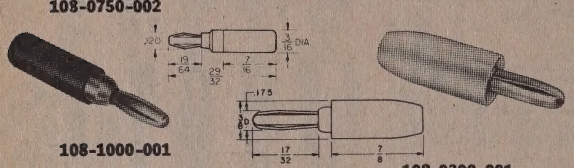

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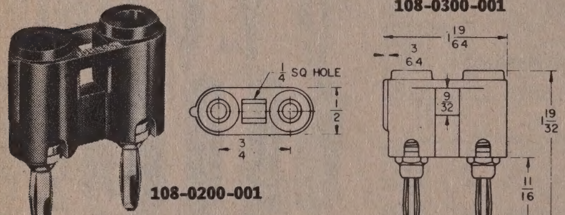

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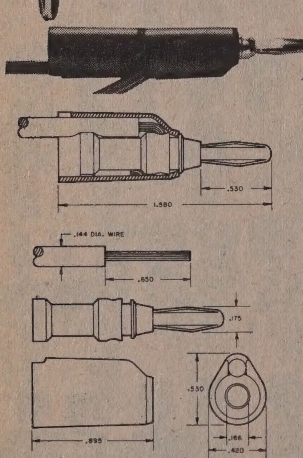

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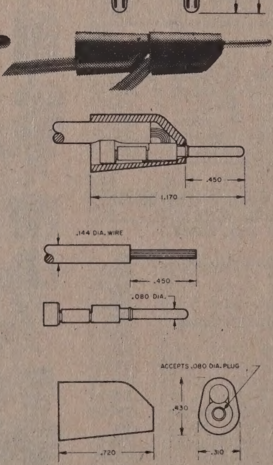

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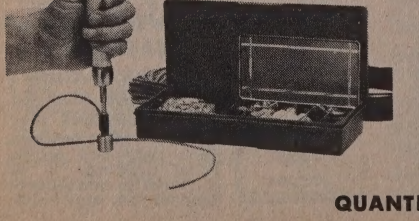


Engineering Kit

BANANA JACKS

Completely insulated molded body with cadmium-plated ins Accommodates banana plugs of nominal .175″ dia. **Voltage Bre down:** 10,000 VDC. Capacity to 1/16″ panel, 2.4 pF nom. Mou in 21/64″ diameter circular, "D" or double flat hole (1/4″ across fla Single nut furnished for mounting, no other mounting hardw needed. See Color Chart* on adjacent page.

Johnson No. 108-0900-001—Net Each . . . . **$0.**

STANDARD BANANA JACKS

High quality, machined brass banana jack. Nickel-plated, nished complete with solder terminal and nut.

Johnson No.	Dimensions, Inches				Hole Dia.	Thread	Ne Eac
	F	D	S	H			
108-0740-001	3/8	1/4	17/32	5/8	.166″	1/4″-28	$0.

RIB-LOC® PRESS-IN BANANA JACKS

Johnson RIB-LOC design permits substantial production savings as no mounting hardware to handle and assemble. Insta tion by pressing into proper size chassis hole. Accept .120″ tip p in recessed contact. Silver-plated brass contact. Brass solder minal silver-plated and iridited for good solderability. Insulat body molded of low-loss polyamide. **Current Rating:** 10 am **Peak Withstanding Voltage:** 5000. Capacity to 1/8″ panel: 1.4 nom. Available in six colors, see Color Chart* on adjacent pa

Johnson No. 108-1100-001—Net Each . . . . **$0.**

STANDARD BANANA PLUGS

Accurately machined brass studs extend the full length of pl providing extra strength. Nickel-silver springs are highly resist to corrosion. Bodies and hardware .0001″ nickel-plated. All ban plugs are available with beryllium copper springs and nic cadmium or silver plating. Wide selection of miniature sol type plugs is also available on special order. Quantities in spe platings or plugs should be sufficiently large for econom production runs. Solder terminal and nut or screw furnish

Johnson No.	Dimensions, Inches				Thread	Ne Eac
	S	P	D	H		
108-0750-001	3/8	17/32	.175	1 1/8	6-32	$0.
108-0750-002	3/4	17/32	.175	1 1/2	6-32	.
108-0753-001	. . . . . .	17/32	.175	15/16	6-32	.

Similar to standard types listed above, except designed for ri ing. Springs are beryllium copper with cadmium plating.

108-0754-001	7/32	13/32	.155	13/16	. . . .	$0.1

MINIATURE BANANA PLUGS

Extremely small insulated banana plugs with precision machi phosphor bronze body, nickel-plated. One-piece springs are be lium copper, nickel-plated, .120″ dia. Polyamide sleeve. **Curr Rating:** 5 amps. Available in 6 colors, see Color Chart* on adja page.

Johnson No. 108-1000-001—Net Each . . . . **$0.**

SOLDERLESS BANANA PLUGS

Compact, high voltage insulated plug for a wide variety of ap cations. Designed for fast, solderless connection of up to 16 ga standard wire. Body and pin are made of one piece nickel-pla brass with high grade nickel-silver springs. Molded sleeve. **Curr Rating:** 15 amps. See Color Chart* on adjacent page.

Johnson No. 108-0300-001—Net Each . . . . **$0.**

DUAL BANANA PLUG

Extremely versatile plug for solderless connection. Molded b incorporates polarity indication and strain relief hole for leads. Nickel-plated body and high quality nickel-silver spri Accurately machined brass studs extend full length of pins extra strength. **Voltage Breakdown:** 10,000 VDC. **Current Rat** 15 amps. Capacity plug to plug, 1.3 pF. See Color Chart* adjacent page.

Johnson No. 108-0200-001—Solderless. Net Each . . . . **$0.**

PATCHCORD STACKING PLUGS

Developed for custom patchboard assembly and replacemen damaged molded patchboard plugs. Assembly of patchcords any length and color. Used with standard 0.144″ diameter ru or extra-flexible polyvinyl insulated wire. Plug body prec machined brass with 0.0002″ nickel plating. Polyamide hou available in six colors. Operating temperature range, −55° +105° C.

STACKING STANDARD BANANA PLUGS

Current rating, 15 amps. Assembly tool punch and fixtur recommended. Available in 6 colors, see Color Chart* on adja page.

Johnson No. 108-1080-001—Net Each . . . . **$0.**

STACKING .080″ STANDARD TIP PLUGS

Current rating, 10 amps. Available in 6 colors, see Color Ch on adjacent page.

Johnson No. 105-1200-001—Net Each . . . . **$0.**

ASSEMBLY PROCEDURE

First feed stripped wire through cross hole of metal contact, insert contact and wire into housing. Finally place into fixt place tip of tool into rear of contact and snap contact into pl

ENGINEERING KITS

Contain material to assemble 30 patchcords in six colors.

Johnson Standard Banana Patchcord Stacking Plug Enginee Kit No. 108-1299-001—Contains 10 each of white, red, bl green, yellow and blue standard banana plugs; one assembly and one assembly fixture. Net Each . . . . **$21.**

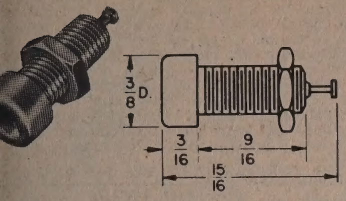
Johnson No. .080″ Tip Patchcord Stacking Plug Engineering No. 105-1299-001—Contains 10 each of white, red, black, gr yellow and blue color .080″ tip plugs; one assembly tool and assembly fixture. Net Each . . . . **$24.**

QUANTITY PRICES AVAILABLE ON REQUEST

TIP JACKS, PLUGS AND PRINTED CIRCUIT CONNECTORS

TIP JACKS

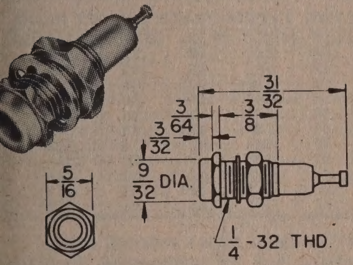
DELUXE TIP JACK



olded body with recessed closed entry sign contact. Silver-plated beryllium cop- r contact spring; brass solder terminal is t tin dipped. **Current Rating:** 10 amps. **ltage Breakdown:** 11,000 VDC. Ca- city to ⅛″ panel: 2 pF. ¼″-32 nut fur- hed. U.S. Patent No. 2,704,357. See lor Chart*.

hnson No. 105-0600-001—Net. . . . **23c**

METAL-CLAD TIP JACKS (MILITARY)

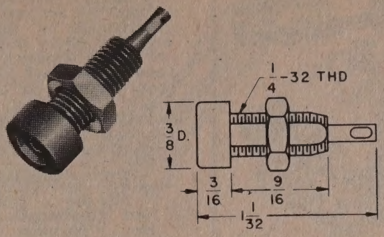


gh reliability tip jack for military use industrial applications. High quality aterials withstand severe environmental mperature, vibration and salt spray con- tions. Complies with MS-16108, Rev. F MIL-STD-242A. Closed entry contact sign prohibits entry of tip plug .085″ or rger, preventing accidental contact dam- e by careless probe insertion. Heavy ckel-plated brass jacket. Gold-plated ryllium copper contact spring exceeds in. insertion/withdrawal cycle require- ents of MS-16108. **Current Rating:** 5 nps. **Voltage Breakdown:** 8,000 VDC. apacity to ⅛″ panel: 3.8 pF. ¼″-32 nut d lock washer furnished. Terminal style terminal style C per MS-16108 available special order. Brass solder terminal is ld plated.

hnson No. 105-0200-200—Net. . . . **36c**

MIL Number	E. F. Johnson Number	Color
MS16108-1A	**105-0201-200**	White
MS16108-2A	**105-0202-200**	Red
MS16108-3A	**105-0203-200**	Black
MS16108-4A	**105-0208-200**	Brown
MS16108-5A	**105-0204-200**	Green
MS16108-6A	**105-0206-200**	Orange
MS16108-7A	**105-0210-200**	Blue
MS16108-8A	**105-0207-200**	Yellow
MS16108-9A	**105-0213-200**	Gray
MS16108-10A	**105-0212-200**	Violet

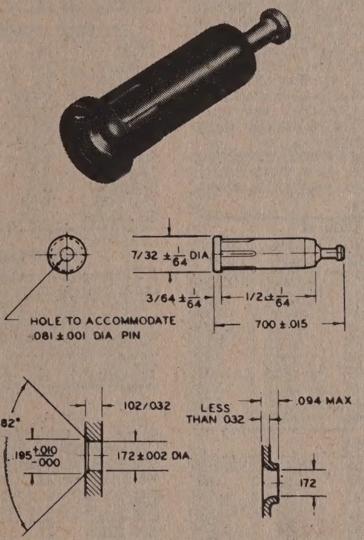
STANDARD TIP JACK



Molded body with recessed, cadmium-plated formed phosphor bronze contact. **Current Rating:** 10 amps. **Voltage Breakdown:** 9000 VDC. Capacity to ⅛″ panels: 2.0 pF. ¼″-32 nut furnished. See Color Chart* below.

Johnson No. 105-0800-001—Net. . . . **14c**

RIB-LOC® PRESS-IN TIP JACKS

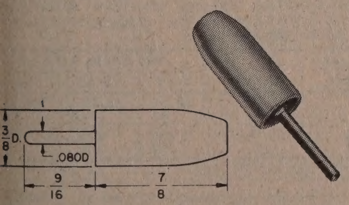


Johnson Rib-Loc design permits substantial production line savings as no mounting hardware to handle and assemble. Installation by only pressing into proper size chassis hole. Accept .080″ tip plug in recessed, closed-entry type contact that rejects plugs .085″ or larger to prevent accidental contact damage. Silver-plated beryllium copper contact spring. Brass solder terminal silver-plated and iridited for good solderability. Insulating body molded of low-loss polyamide. **Current Rating:** 10 amps. **Voltage Breakdown:** 5,000 VDC. Capacity to ⅛″ panel: 1.4 pF nominal. See Color Chart* below.

Johnson No. 105-1040-001—Net. . . . **20c**

TIP PLUGS

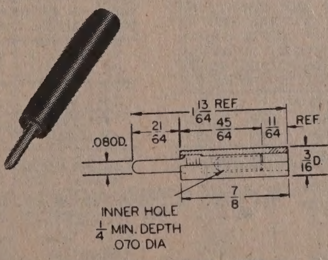
SOLDERLESS TIP PLUG



ompletely insulated, molded sleeve. Re- essed metal head prevents exposure of etal surfaces when engaged in any stand- rd tip jack. All metal parts are nickel- lated brass. Designed for solderless con- ection of up to 16 gauge stranded wire. its all standard tip jacks. **Current Rating:** 0 amps. See Color Chart*.

ohnson No. 105-0300-001—Net. . . . **20c**

SUB-MINIATURE TIP PLUG



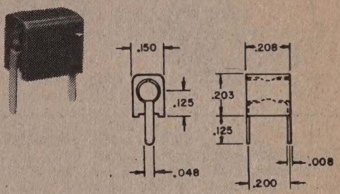
For use with miniature jack, .080″ dia. tip. Nickel-plated machined brass body, solder type lead connection. See Color Chart*.

Johnson No. 105-0770-001—Net. . . . **23c**

PRINTED CIRCUIT CONNECTORS

Sub-miniature tip jacks are rated at 5 amps max. current capacity. Operating voltage is 1500 volts rms at sea level and 350 volts rms at 50,000 feet. Contact resistance is less than 2 milliohms; capacitance between 2 adjacent jacks is less than one pF at 1 MHz. Body is of tough, low-loss polyamide per MIL-M-20693A; able to stand hard usage. Jacks equipped with beryllium copper contacts; contacts and terminals are silver-plated.

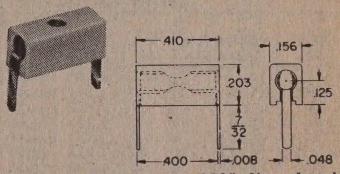
NEW HORIZONTAL JACK



New design accepts 0.080″ dia. tip plug in either end. Silver-plated and iridited beryllium-copper formed contact. Two terminals. Approx. one-half size of standard jack. See Color Chart* below.

Johnson No. 105-1100-001—Net Ea. . . **9c**

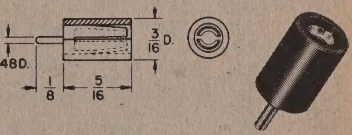
HORIZONTAL JACK



Unique design accepts .080″ dia. plug in either end, or from top or bottom. Silver-plated beryllium copper formed contact. Two terminals. See Color Chart* below. U.S. Patent No. 3,208,027. Without cross hole available on special order.

Johnson No. 105-0750-001—Net Ea. **10c**

VERTICAL JACK



Mounts through single .052″ hole, requires minimum mounting area. Silver-plated, machined beryllium copper contact. See Color Chart* below.

Johnson No. 105-0850-001—Net. . . . **15c**

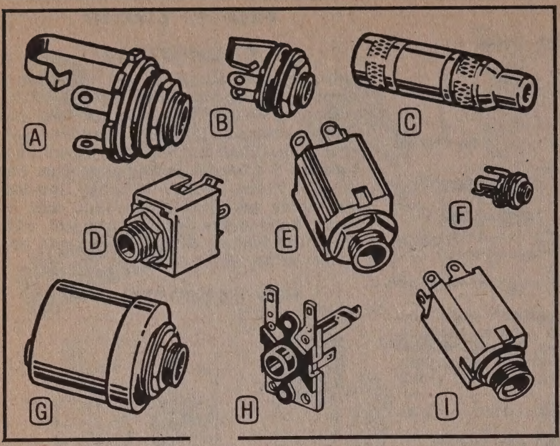
*COLOR CHART

Connectors, unless otherwise specified are available in 6 molded colors to Federal Standard 595. Other colors listed are available as specials. E. F. Johnson No. for color desired is determined by adding color numbers on chart below to **6th** and **7th** digits of E. F. Johnson No. listed for series. To order 105-1040-001 in violet color, add **12** to **6th** and **7th** digits of series number and order 105-1052-001.

Color	No.	Color	No.
White†	01	Yellow†	07
Red†	02	Brown	08
Black†	03	Blue†	10
Green†	04	Violet	12
Orange	06	Gray	13

†Indicates colors available from stock. Other colors listed are available on special order for some items.

SWITCHCRAFT® INC. Phone Jacks



"LITTEL-JAX" PHONE JACKS

(A) Economical phone jacks with notched insulating washers mechanically interlock springs and solder lugs. "V" bend in tip spring firmly "holds" mating plug. Minimum space requirements; mount in single ⅜″ hole, panels up to 5/32″ thick, except L-11 and L-12A in panels up to ¼″ thick. Nos. C-11 and C-12B have locating pins (non-turn devices). No. S-11 similar to No. 11 except .210″ I.D. sleeve. Typical Mating: All mate with standard ¼″ dia. plug except: C-11 (JJ-034) and C12A (JJ-089) mate with 440 (PJ-055B) plug; C-12B (JJ-033), S-12B and S-13B mate with 480 (JAN-PJ-068) or 484 (W.E. 309) plug.

No. 14B Stereo Littel-Jax switches-out speakers when connecting stereo headphones. Dual, NO switch contacts, open both stereo circuits independently when a three-conductor plug is inserted.

TWO-CONDUCTOR TYPES

Part No.	Schematic Number	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
11	I	$0.33	$0.303	$0.275	$0.22	$0.209	$0.198
C-11*	I	.48	.44	.40	.32	.304	.288
L-11	I	.39	.358	.325	.26	.247	.234
S-11	I	.36	.33	.30	.24	.228	.216
12A	III	.36	.33	.30	.24	.228	.216
C-12A*	III	.57	.523	.475	.38	.361	.342
L-12A	III	.42	.385	.35	.28	.266	.252
13	V	.69	.633	.575	.46	.437	.414
13A	VI	.63	.578	.525	.42	.399	.378
13E	IX	.69	.633	.575	.46	.437	.414

THREE-CONDUCTOR TYPES

Part No.	Schematic Number	1-24	25-49	50-99	100-249	250-499	500-999
12B	IV	$0.42	$0.385	$0.35	$0.28	$0.266	$0.252
C-12B*	IV	.57	.523	.475	.38	.361	.342
L-12B	IV	.54	.495	.45	.36	.342	.324
S-12B	IV	.54	.495	.45	.36	.342	.324
13B	VIII	.60	.55	.50	.40	.38	.36
S-13B	VIII	.75	.688	.625	.50	.475	.45
14B	XII	.78	.715	.65	.52	.494	.468

*Per JAN-J-641.

"TINI-JAX" MINIATURE PHONE JACKS

(B) Miniature 2-conductor jacks mate with 750 plug. Approximately ⅓ the size of "Littel-Jax"; otherwise similar in construction. Mount in ¼″ dia. hole; panel up to ⅛″ thick. No. 43A has a unique spring design that requires a pear shaped tip, such as Switchcraft "Tini-Plug" No. 750.

41	I	$0.33	$0.303	$0.275	$0.22	$0.209	$0.198
42A	III	.36	.33	.30	.24	.228	.216
43A	VI	.54	.495	.45	.36	.342	.324

"TINI-EXTENSION JAX"

(C) An extension or cable jack to mate with "Tini-Plugs". Two-conductor. Metal housing for ruggedness and electrical shielding. Solder lug terminals.

125	....	$0.90	$0.825	$0.75	$0.60	$0.57	$0.54

"TINI-D JAX" SUBMINIATURE PHONE JACK

(D) Small completely enclosed, molded phone jack mate with "Tini-Plug" No. 750. Phenolic housing protects the bifurcated beryllium copper springs from being bent during mounting. Two conductor. Threaded bushing for conventional mounting. Tip spring terminals that "snap-in" P.C. boards. Mount on ⅜″ ctrs., ¼″ dia. hole, panels to ⅛″ thk., depth behind panel, 7/16″.

Part No.	Schematic Number	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
142A	III	$0.39	$0.358	$0.325	$0.26	$0.247	$0.234

"HI-D JAX" PHONE JACKS

(E) Compact phone jacks mate with std. ¼″ phone plugs. Molde box body protects integral silver-plated, nickel silver springs Low contact resistance and electrical leakage with little capacity between the springs. Mount on ⅝″ centers in single ⅜″ dia. hole panels up to 5/32″ thick, depth behind panel, 1 3/32″. All part nos with "L" prefix mount in panels up to ¼″ thick; part nos. with "N" prefix feature a threaded nylon bushing to provide complete insulation of jack sleeve from mtg. panel; part nos. with "NL" prefix feature a ⅜″ lg. threaded nylon bushing (same as "N") and mount in panels up to ¼″ thick. **Stereo "HI-D Jax", Nos. 114B L-114B, N-114B, NL-114B:** Switches out speakers when connecting stereo headphones. Dual NO switch contacts open both stereo circuits independently when a 3-cond. plug is inserted.

TWO CONDUCTOR TYPES—MATE NO. 250 PLUG

Part No.	Schematic Number	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
111	I	$0.33	$0.303	$0.275	$0.22	$0.209	$0.19
L-111	I	.42	.385	.35	.28	.266	.25
N-111	I	.42	.385	.35	.28	.266	.25
NL-111	I	.45	.413	.375	.30	.285	.27
112A	III	.36	.33	.30	.24	.228	.21
L-112A	III	.45	.413	.375	.30	.285	.27
N-112A	III	.45	.413	.375	.30	.285	.27
NL-112A	III	.48	.44	.40	.32	.304	.28
113	V	.66	.605	.55	.44	.418	.39
113D	VI	.66	.605	.55	.44	.418	.39
113E	IX	.66	.605	.55	.44	.418	.39

THREE CONDUCTOR TYPES—MATE NO. 267 PLUG

Part No.	Schematic Number	1-24	25-49	50-99	100-249	250-499	500-999
112B	IV	$0.39	$0.358	$0.325	$0.26	$0.247	$0.23
L-112B	IV	.48	.44	.40	.32	.304	.28
N-112B	IV	.48	.44	.40	.32	.304	.28
113B	VIII	.51	.468	.425	.34	.323	.30
L-113B	VIII	.54	.495	.45	.36	.342	.32
N-113B	VIII	.54	.495	.45	.36	.342	.32
NL-113B	VIII	.57	.523	.475	.38	.361	.34
113F	VII	.51	.468	.425	.34	.323	.30
114B	XII	.57	.523	.475	.38	.361	.34
L-114B	XII	.63	.578	.525	.42	.399	.37
N-114B	XII	.63	.578	.525	.42	.399	.37
NL-114B	XII	.66	.605	.55	.44	.418	.39

"MICRO-JAX" SUBMINIATURE PHONE JACK

(F) Precision manufactured jack for miniaturized application Only 1/25th the size of standard phone jacks. Mates wit "Micro-Plug", Series 850, 880. Two-conductor, single closed ci cuit. Silver plating on special tempered nickel silver springs. In ternally keyed nylon insulation interlocks springs and solder lugs t eliminate shorts. Fits .190″ dia. hole in panels to 3/32″ thick.

TR-2A	III	$0.39	$0.358	$0.325	$0.26	$0.247	$0.23

"SHIELDED JAX"

(G) A unique modification of the "Littel-Jax". The shield assembled into and made part of the jack. Ideal for hig impedance circuits. CN-11 and CN-12A are 2-conductor type, ma with 250 Plug; CN-12B, 3-conductor and mates with 267 Plu

CN-11	I	$0.63	$0.578	$0.525	$0.42	$0.399	$0.37
CN-12A	III	.66	.605	.55	.44	.418	.39
CN-12B	IV	.75	.688	.625	.50	.475	.45

"R-JAX" ECONOMY PHONE JACKS

(H) Radically new jack design; simple mounting requires only tw 3/32″ dia. rivets to fasten securely to mounting panel. Accep standard ¼″ dia. phone plugs.

Part No.	Schem. No.	Cond.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
2A*	II	2	$0.33	$0.303	$0.275	$0.22	$0.209	$0.1
2B†	IV	3	.36	.33	.30	.24	.228	.2
3E*	IX	2	.54	.495	.45	.36	.342	.3
4B†	XII	3	.48	.44	.40	.32	.304	.2

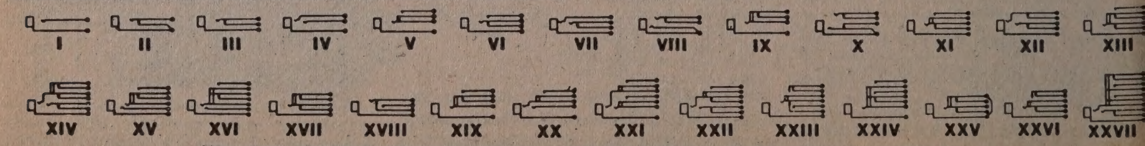
Typical mating plug: *250; †267.

"UNIJAX" PHONE JACKS

(I) Miniature 2- and 3-conductor phone jacks mate with standa .173″ dia. phone plugs. Molded "box" body protects integr silver plated beryllium copper tip and ring springs; extremely lo contact resistance and electrical leakage with low capacitan between springs. Mounts in 9/32″ hole on 15/32″ centers in panels to ⅛″ thick. Only ⅞″ depth behind panel.

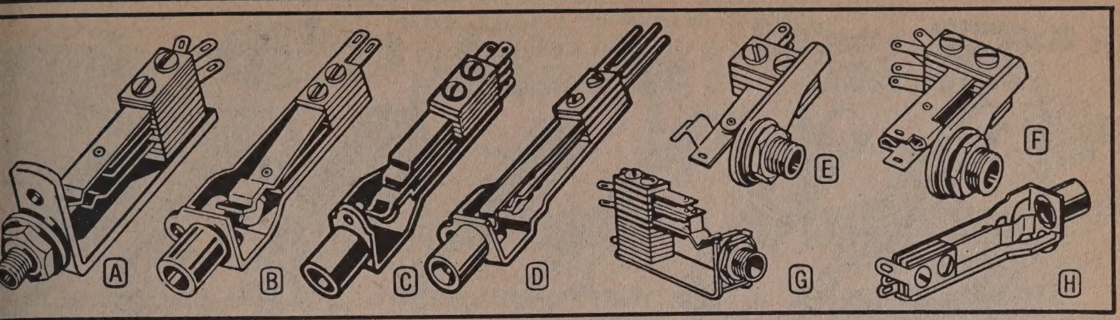
Part No.	Schematic Number	Cond.	Net Each, Lots of 1-24	25-49	50-9
UJ-1*	I	2	$0.36	$0.33	$0.30
UJ-2A*	III	2	.39	.358	.32
UJ-2B†	IV	3	.42	.385	.35
UJ-4B†	XII	3	.60	.55	.50

Typical mating plug: *TT-251; †TT-253.



The above electrical schematics do not necessarily indicate relative solder lug positions.

WITCHCRAFT® Phone Jacks



"M-JAX" MILITARY TYPE PHONE JACKS

Very heavy long frame jacks often referred to as the Navy Jack. For industrial and military equipment. Long, heavy y springs with fine silver contacts. Mount on single ⅜″ hole, panels up to ¼″ thick.

Part umber	Schematic Number*	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
-441	I	$1.05	$0.963	$0.875	$0.70	$0.665	$0.63
-443B	VIII	1.44	1.32	1.20	.96	.912	.864
-444*	XII	1.56	1.43	1.30	1.04	.988	.936
-444B	XII	1.50	1.38	1.25	1.00	.95	.90
-445	XIII	1.83	1.68	1.53	1.22	1.16	1.10
-446A	XVI	2.55	2.34	2.13	1.70	1.62	1.53

"MT-JAX" MILITARY TELEPHONE JACKS

Long frame, telephone switchboard jacks designed for high quality communication and military equipment. Springs are a special nickel silver alloy with welded cross bar palladium tacts. "A" frame design with side mounting ear. All jacks listed te with ¼″ diameter phone plugs, unless otherwise indicated.

"C" frame design with mounting ear centered at top of frame; to order, add prefix **"C"** to part number.

T-331	I	$0.78	$0.715	$0.65	$0.52	$0.494	$0.468
T-332A	III	.90	.825	.75	.60	.57	.54
T-332B	IV	.90	.825	.75	.60	.57	.54
T-332C	XVIII	1.05	.963	.875	.70	.665	.63
T-333	V	1.02	.935	.85	.68	.646	.612
T-333B	VIII	1.05	.963	.875	.70	.665	.63
T-333E	IX	1.05	.963	.875	.70	.665	.63
T-334A	XI	1.08	.99	.90	.72	.684	.648
T-334B	XII	1.08	.99	.90	.72	.684	.648
T-334C	XVII	1.08	.99	.90	.72	.684	.648
T-334E	XXV	1.08	.99	.90	.72	.684	.648
T-334F	XIX	1.08	.99	.90	.72	.684	.648
T-335A	XXVI	1.23	1.13	1.03	.82	.779	.738
T-336A	XIV	1.53	1.40	1.28	1.02	.969	.918
T-336B	XXI	1.53	1.40	1.28	1.02	.969	.918
T-336C	XXII	1.53	1.40	1.28	1.02	.969	.918
T-336E	XXIII	1.53	1.40	1.28	1.02	.969	.918
T-342B*	IV	1.05	.963	.875	.70	.665	.63
T-344B*	XII	1.23	1.13	1.03	.82	.779	.738

ushing. .2085″.

"T-JAX" TELEPHONE TYPE PHONE JACKS

Long frame, switchboard type, phone jacks. For high quality communication equipment. Springs of nickel silver alloy for ximum life and corrosion resistance. Fine silver contacts are ndard. "A" frame design with side mounting ear. All jacks ed mate with standard ¼″ diameter phone plugs.

"C" frame design with mounting ear centered at top of frame; to order, add prefix **"C"** to part number.

T-331*	I	$0.69	$0.633	$0.575	$0.46	$0.437	$0.414
T-332A*	III	.78	.715	.65	.52	.494	.468
T-332B†	IV	.78	.715	.65	.52	.494	.468
T-334B†	XII	.96	.88	.80	.64	.608	.576

wo-conductor, mates with 440 Plug. †Three-conductor, mates h 482 Plug.

"WMT-JAX" MILITARY TELEPHONE JACKS

Construction, materials, contacts and mounting identical to "MT-Jax" telephone jacks, except wire-wrapping terminals h special shoulder that provides a "stop" for the w/w tool.

MT-331	I	$0.84	$0.77	$0.70	$0.56	$0.532	$0.504
MT-332A	III	.99	.908	.825	.66	.627	.594
MT-332B	IV	.99	.908	.825	.66	.627	.594
MT-334B	XII	1.20	1.10	1.00	.80	.76	.72
MT-334E	XXV	1.20	1.10	1.00	.80	.76	.72
MT-335A	XXVI	1.35	1.24	1.13	.90	.855	.81
MT-336A	XIV	1.65	1.51	1.38	1.10	1.05	.99
MT-336C	XXII	1.65	1.51	1.38	1.10	1.05	.99
MT-342B	IV	1.17	1.07	.975	.78	.741	.702
MT-344B	XII	1.35	1.24	1.13	.90	.855	.81

"MT-JAX" JACKS WITH OFFSET GROUND LUGS

Similar to MT-Jax except ground lugs are offset. Prefix "X" specifies as "away" and "Y" as "toward".

Part No.	Schematic Number*	Adjusted for Plug	MIL Type	Net Each, Lots of 1-24	25-49	50-99
MT-332A	III	440	JJ-024	$0.93	$0.853	$0.775
MT-332B	IV	482*	JJ-022	.93	.853	.775
MT-334B	XII	482	JJ-042	.93	.853	.775
MT-332A	III	440	JJ-024	.93	.853	.775
MT-332B	IV	482*	JJ-022	.93	.853	.775
MT-334B	XII	482	JJ-042	.93	.853	.775

IIL Type PJ-051B.

"SF-JAX" SHORT FRAME PHONE JACKS

Ⓔ **Series 20**—High quality commercial jacks, solder lugs parallel to mounting surface. Mount in ⅜″ dia. holes, panels up to 3⁄16″ thick.

Ⓕ **Series 50**—Similar to Series 20, except solder lug location. Require more depth but less panel space; panels up to ¼″ thick.

Series C-20 and C-50—Similar to commercial Series 20 and 50, except have military insulation and finishes; both will mount in panels up to ¼″ thick. MIL designation: C-23 (JJ-099), C-23A (JJ-098), C-23E (JJ-102), C-51 (JJ-096), C-52A (JJ-097), C-52B (JJ-103), C-53A (JJ-092), C-54A (JJ-093), C-54B (JJ-101), C-55B (JJ-095).

All "SF-Jax" mate with standard ¼″ diameter plugs, except as noted.

SERIES 20 AND C-20

Part No.	Schematic Number*	Net Each, Lots of 1-24	25-49	50-99	100-249	240-499	500-999
21	I	$0.51	$0.468	$0.425	$0.34	$0.323	$0.306
22	II	.63	.578	.525	.42	.399	.378
22A	III	.63	.578	.525	.42	.399	.378
22B	IV	.63	.578	.525	.42	.399	.378
23	V	.75	.688	.625	.50	.475	.45
C-23*	V	1.02	.935	.85	.68	.646	.612
23A	VI	.75	.688	.625	.50	.475	.45
C-23A*	VI	1.02	.935	.85	.68	.646	.612
23B	VIII	.75	.688	.625	.50	.475	.45
23C	VIII	.75	.688	.625	.50	.475	.45
23E	IX	.75	.688	.625	.50	.475	.45
C-23E*	IX	1.02	.935	.85	.68	.646	.612
24	X	.78	.715	.65	.52	.494	.468
24A	XI	.84	.77	.70	.56	.532	.504
24B	XII	.84	.77	.70	.56	.532	.504
25	XIII	.99	.908	.825	.66	.627	.594
26	XIV	1.05	.963	.875	.70	.665	.63

SERIES 50 AND C-50

51	I	$0.51	$0.468	$0.425	$0.34	$0.323	$0.306
C-51*	I	.90	.825	.75	.60	.57	.54
52	II	.63	.578	.525	.42	.399	.378
52A	III	.63	.578	.525	.42	.399	.378
C-52A*	III	.99	.908	.825	.66	.627	.594
52B	IV	.63	.578	.525	.42	.399	.378
C-52B†	IV	.99	.908	.825	.66	.627	.594
53	V	.75	.688	.625	.50	.475	.45
53A	VI	.75	.688	.625	.50	.475	.45
C-53A*	VI	1.14	1.05	.95	.76	.722	.684
53B	VIII	.75	.688	.625	.50	.475	.45
53C	VIII	.75	.688	.625	.50	.475	.45
53E	IX	.75	.688	.625	.50	.475	.45
54	X	.84	.77	.70	.56	.532	.504
54A	XI	.84	.77	.70	.56	.532	.504
C-54A*	XI	1.17	1.07	.975	.78	.741	.702
54B	XII	.84	.77	.70	.56	.532	.504
C-54B†	XII	1.17	1.07	.975	.78	.741	.702
55	XIII	.99	.908	.825	.66	.627	.594
C-55B†	XV	1.38	1.27	1.15	.92	.874	.828
56	XIV	1.05	.963	.875	.70	.665	.63

*Mates with 440 Plug. †Mates with 482 Plug.

"LF-JAX" LONG FRAME JACKS

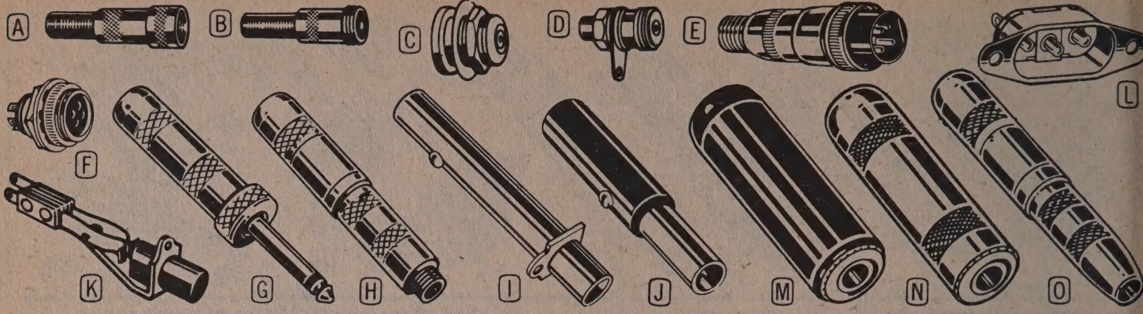
Ⓖ Quality long frame phone jacks with integral ground lug. Fine silver contacts rated 3 amps, 300 watts AC, non-inductive. Mount in single ⅜″ dia. hole, panels up to 5⁄16″ thick. Depth behind panel, 2 25⁄32″.

Frame also available with a non-turn device, add prefix **"R"** to part number, e.g., **R**31.

Part Number	Schematic Number*	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
31*	I	$0.57	$0.523	$0.475	$0.38	$0.361	$0.342
32*	II	.75	.688	.625	.50	.475	.45
32A*	III	.75	.688	.625	.50	.475	.45
32B†	IV	.75	.688	.625	.50	.475	.45
33*	V	.81	.743	.675	.54	.513	.486
33A*	VI	.81	.743	.675	.54	.513	.486
33B†	VIII	.81	.743	.675	.54	.513	.486
33C†	VIII	.81	.743	.675	.54	.513	.486
33E*	IX	.81	.743	.675	.54	.513	.486
34†	X	.90	.825	.75	.60	.57	.54
34A*	XI	.90	.825	.75	.60	.57	.54
34B†	XII	.90	.825	.75	.60	.57	.54
35*	XIII	1.08	.99	.90	.72	.684	.648
36†	XIV	1.23	1.13	1.03	.82	.779	.738

*2-conductor; mates with 250 Plug. †3-conductor; mates with 267 Plug.

★REFER TO PREVIOUS PAGE FOR ELECTRICAL SCHEMATICS.



"MINI-CON" MINIATURE CONNECTORS

Miniature microphone connectors for use with single conductor shielded cable up to ³⁄₁₆″ O.D. Only ½ the size of standard microphone connectors. Nickel-plated brass bodies. Ideal for miniaturized audio equipment, lapel microphones, musical instruments, etc. **5501F Female Cord Connector (Fig. A)**—With removable coupling ring for quick converting to male type. Cable-braid spring clamped to body by hollow point set screw. **5501M Male Cord Connector (Fig. B). 5501MF Male Panel Connector (Fig. C)**—Mounts by lock-nut front side of panel, in ⅜″ dia. hole. **5501MP Male Panel Connector (Fig. D)**—Mounts back side of panel in ³⁄₁₆″ dia. hole. **5501MPC Male Panel Connector**—Same as 5501MP except shorting type.

Part No.	Fig.	Connector Type	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
5501F	A	Female	$0.48	$0.44	$0.40	$0.32	$0.304	$0.288
5501M	B	Male	.39	.358	.325	.26	.247	.234
5501MF	C	Male panel	.36	.33	.30	.24	.228	.216
5501MP	D		.36	.33	.30	.24	.228	.216
5501MPC	D		.57	.523	.475	.38	.361	.342

"SLIM-LINE" I CONNECTORS

Small 4-contact connectors for audio and communication equipment. High-impact, thermo-plastic barrel insert assembly. No. **2504M** plug has coupling ring, polarized D-shaped barrel assembly and large cable clamp. No. **2504FP,** front panel mounting receptacle; ⁴⁹⁄₆₄″ dia., ¾″ depth behind panel. No. **2504FR,** same as 2504FP except rear panel mtg. All models bright nickel plated.

2504M	E	Male	$1.50	$1.38	$1.25	$1.00	$0.95	$0.90
2504FP	F	Female	1.50	1.38	1.25	1.00	.95	.90
2504FR	F	Female	1.50	1.38	1.25	1.00	.95	.90

"LOCK PLUG" AND "EXTENSION JAX"

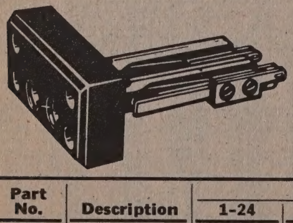
Standard size ¼″ 3-conductor phone plug and mating cable extension jack with built-in locking device; ideal for all PA and audio applications. Plug has coupling ring that can be threaded to bushing of "Littel-Jax" or to mating end of "Lock-Extension Jax". Size, "Lock-Plug" handle, 1⁵¹⁄₆₄″ long x ½″ dia.; "Lock Extension Jax", ½″ O.D. x 2½″ long. Solder lug terminals.

Part No.	Description	Fig.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
298	"Lock-Plug"	G	$1.29	$1.18	$1.08	$0.86	$0.817	$0.774
133	"Extension Jax"	H	1.65	1.51	1.38	1.10	1.05	.99

"CV-JAX" AND PLUGS

High quality coaxial video jacks and plugs designed for use in patching high frequency signals in microwave, telemetry and data-transmitting applications. **No. 3601 Jack (Fig. I)**—Accepts 70-ohm RG59/U cable; mounts in single ⁷⁄₁₆″ hole; depth behind panel, 2²⁹⁄₆₄″. **No. 3603B (Fig. I)**—Has crimp termination feature and accepts RG-59A/U (73 ohm video) or RG-59B/U (75 ohm) cable; crimp sleeve supplied. **No. 3604 (Fig. I)**—Same as 3603B except rear bushing and accepts larger cables. **No. 3621 (Fig. J)**—Has ±1% 75-ohm ½-watt resistor. **No. 3622 (Fig. J)**—Feed-through type. **No. 3623 (Fig. J)**—Same as 3621, but with tip-jack for in-circuit testing.

Part No.	Description	Net Each, Lots of 1-24	25-49	50-99
3601	Coaxial video jack	$6.30	$5.78	$5.25
3603B	Coaxial video jack	6.00	5.50	5.00
3604	Coaxial video jack	6.00	5.50	5.00
3621	Coaxial plug	3.00	2.75	2.50
3622	Coaxial plug	2.70	2.48	2.25
3623	Coaxial plug	3.63	3.33	3.03



"DUAL-JAX BLOCK"

For mounting MT-Jax and T-Jax on ⅝″ centers. Molded black phenolic blocks are 2¾″ w. x ⅝″ d. x 1¼″ h. Rack panel mounted singly or in multiples using four 8-32 flat head screws.

Part No.	Description	Net Each, Lots of 1-24	25-49	50-99	100-249
2300	Block only	$0.96	$0.88	$0.80	$0.64
2331	2 MT-331	2.52	2.31	2.10	1.68
2332A	2 MT-332A	2.76	2.53	2.30	1.84
2332B	2 MT-332B	2.76	2.53	2.30	1.84
2333	2 MT-333	3.09	2.83	2.58	2.06

"LAMP-JAX" SWITCHBOARD PANEL TYPE

(K) **LT-47**—Black nylon lamp housing completely insulates lam from frame. Interchangeable with W.E. Nos. 47A and 47 Accepts standard switchboard lamps and lamp caps, W.E. No 2 and 72, etc. **LT-48**—Specifically constructed for use in equi ment requiring ballast lamps. Rugged steel frame and bushin with sleeve tubing which also acts as a heat sink device. Accept standard lamp caps (W.E. #2 and #72 etc.) when standard lengt lamps are used and standard telephone slide base lamps. Solde lug terminals readily accessible. **LT-49**—Mounts directly in mount ing hole; requires no hardware. Straight solder lug terminals; us T-2 slide-base lamp; nickel silver springs; nickel plated brass fram **WLT-47, WLT-48**—Similar to LT-47 and LT-48, except wi wrapping terminals. All "Lamp-Jax" use Series 50 lens caps.

Part No.	Description	Net Each, Lots of 1-24	25-49	50-99
LT-47	Lamp Jax	$0.90	$0.825	$0.75
LT-48	Ballast Lamp Jax	1.35	1.24	1.13
LT-49	Lamp Jax	1.35	1.24	1.13
WLT-47	Wire Wrap Lamp Jax	.96	.88	.80
WLT-48	Wire Wrap Lamp Jax	1.41	1.29	1.18

AC RECEPTACLES (FIG. L)

Highly dependable 3-pin receptacles for use in all electrical electronic equipment. "Chassis hugging" recessed type mountin Brass contact pins are silver plated, chromate dipped. Nos. **AC** and **LAC3,** ungrounded; Nos. **AC3G** and **LAC3G,** grounded, i cludes self-aligning feature. Pins #1 and #3 move, #2 is stationar No. **LAC3GD,** same as No. LAC3G, except center pin is ⅛″ long to permit connection of ground circuit before power circu Nos. AC3 and AC3G have .122″ dia. pins and mate with custo AC line cords such as Belden PH-243. Nos. LAC3, LAC3G an LAC3GD have .124″ dia. pins and mate with standard AC li cords such as Belden 17258. All types are UL Approved; rate 115 V, 7 amps.

Part No.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-99
AC3	$0.48	$0.44	$0.40	$0.32	$0.304	$0.288
AC3G	.45	.413	.375	.30	.285	.27
LAC3	.48	.44	.40	.32	.304	.288
LAC3G	.45	.413	.375	.30	.285	.27
LAC3GD	.48	.44	.40	.32	.304	.288

"EXTENSION JAX" CABLE EXTENSION JACKS

(M)(N)(O) Standard ¼″ dia. 2- and 3-conductor extension phon jacks with solder lugs or screw type terminals. Blac handles, durable plastic; shielded handles are brass, bright nicke plated. Size, ¹¹⁄₁₆″ O.D., 2⁵⁄₃₂″ lg.; Nos. 121, 131, ½″ O.D., 2½″ l

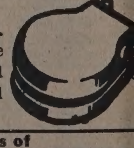
WITH BLACK PLASTIC HANDLE

Part No.	Fig.	Cond.	Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
80	M	2	Screw	$0.87	$0.798	$0.725	$0.58	$0.551	$0.52
88	M	2	Solder	.78	.715	.65	.52	.494	.46
830	M	3	Screw	1.14	1.05	.95	.76	.722	.68
S-830	M	3	Screw	1.50	1.38	1.25	1.00	.95	.90
838	M	3	Solder	1.05	.963	.875	.70	.665	.63

WITH SHIELDED HANDLE

Part No.	Fig.	Cond.	Term.	1-24	25-49	50-99	100-249	250-499	500-999
120	N	2	Screw	$1.14	$1.05	$0.95	$0.76	$0.722	$0.68
121	O	2	Solder	1.20	1.10	1.00	.80	.76	.72
126	N	2	Solder	1.26	1.16	1.05	.84	.798	.75
128	N	2	Solder	1.05	.963	.875	.70	.665	.63
S-128	N	2	Solder	1.11	1.02	.925	.74	.703	.66
131	O	3	Solder	1.50	1.38	1.25	1.00	.95	.90
1230	N	3	Screw	1.47	1.35	1.23	.98	.931	.88
S-1230	N	3	Screw	1.80	1.65	1.50	1.20	1.14	1.08
1238	N	3	Solder	1.35	1.24	1.13	.90	.855	.81

JACK COVERS



Handy, rugged, spring-load phone jack covers. Automatically covers jack openings when phone plug is removed. Protects against dust and moisture. Used with standard ⅜″-32 threaded bushing type phone jacks.

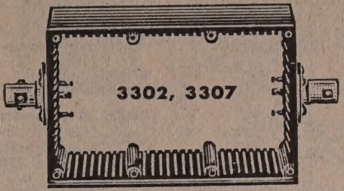
Part No.	Color	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-99
510	Olive drab	$0.81	$0.743	$0.675	$0.54	$0.513	$0.486
512	Bright nickel	.81	.743	.675	.54	.513	.486
515	Black	.81	.743	.675	.54	.513	.486
520	Navy gray	.81	.743	.675	.54	.513	.486

Pomona SHIELDED "BLACK BOXES" WITH CARD GUIDES AND MOUNTING FLANGES

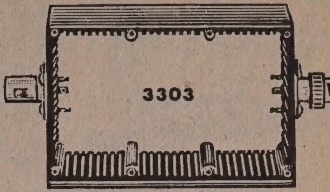
SHIELDED "BLACK BOXES" WITH CARD GUIDES

otted aluminum boxes accept 1/16" circuit ards and shielding dividers. Removable) and bottom covers; solder turret ternals. **Shielded Housing:** Extruded alunum alloy 6061-T6; blue, baked enamel ish, Fed. Std. 595 #25109 over phosphoric h per MIL-C-15328A. **Cover:** .080" alunum 6061-T6 with clear anodize finish, IL-A-8625A. **Operating Temp.:** −55° C +150° C. **Working Voltage:** 500 volts ak. **Noise Rejection:** Better than 70 dB. **able Inside Space:** 4" w. x 1½" d. x 2" h.

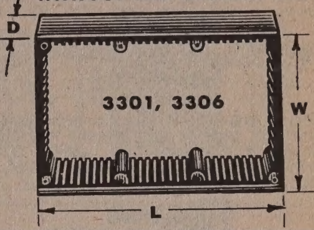
BNC JACK BOTH ENDS



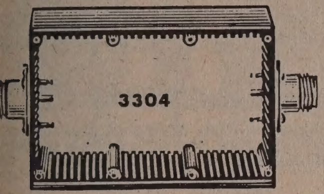
BNC JACK TO BNC PLUG



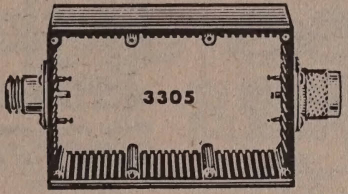
WITHOUT END CONNECTORS



TYPE "N" JACK BOTH ENDS



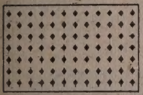
TYPE "N" JACK TO TYPE "N" PLUG



omona umber	1st End Connector	2nd End Connector	Size, In. L. x D. x W.	Net Each, Lots of 1-24	25-49	50-99	100-249
3301	None	None	4.13 x 1.66 x 2.68	$ 7.85	$ 7.07	$ 6.67	$ 5.50
3302	UG290A/U type BNC jack	UG290A/U type BNC jack	4.13 x 1.66 x 2.63	10.85	9.77	9.22	7.60
3303	UG290A/U type BNC jack	UG1104A/U type BNC plug	4.13 x 1.66 x 2.63	11.85	10.67	10.07	8.30
3304	UG58A/U type N jack	UG58A/U type N jack	4.13 x 1.66 x 2.63	13.85	12.47	11.77	9.70
3305	UG58A/U type N jack	Type N plug	4.13 x 1.66 x 2.63	14.85	13.37	12.62	10.40
3306*	None	None	4.13 x 1.66 x 2.68	7.85	7.07	6.67	5.50
3307	Isolated BNC jack	Isolated BNC jack	4.13 x 1.66 x 2.63	19.95	17.96	16.96	13.97

npainted.

CIRCUIT MOUNTING BOARDS

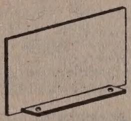


Pre-cut to proper size for rapid assembly of components. Boards slide easily into box card guides. Boards, 1/16" thick. **Patterns:** **A**, .062" dia. holes on .200" centers; **B**, .042" dia. holes on .100" centers. **Size:** 2.39" x 1.50".

omona umber	Pat-tern	No. of Holes	Material	Net Each, Lots of 1-24	25-49	50-99	100-149
3321	A	12 x 7	Paper-Epoxy	$0.50	$0.45	$0.43	$0.35
3322	.....	None	Paper-Epoxy	.35	.32	.30	.25
3323	A	12 x 7	Glass-Epoxy	.65	.59	.55	.46
3324	.....	None	Glass-Epoxy	.45	.41	.38	.32
3325	A	12 x 7	Glass-Epoxy*	.75	.68	.64	.53
3326	B	24 x 15	Glass-Epoxy	.85	.77	.72	.60

opper clad, one side.

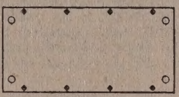
SHIELDING DIVIDERS



Aluminum divider is excellent for separating the box into shielded compartments. Made of .063" aluminum, clear anodized per MIL-A-8625A. **Size:** 2.39" x 1.50"; mounting flange, 1.81" long with two #4-40 holes spaced 1.500" apart. **Pomona No. 3327**—Net, Lots 1–24 . **$0.95;** 25–49 . **$0.86;** 50–99 . **$0.81;** 100–249 . **$0.67**

Pomona No. 3334—Same except 3.90" lg. Net, Lots 1–24 . . . **$1.25;** 25–49 . . . . **$1.13;** 50–99 . . . . **$1.06;** 100–249 . . . . **$0.88**

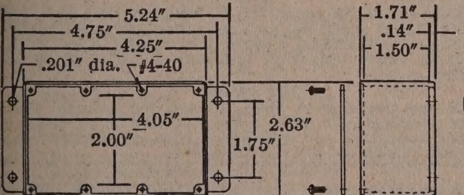
LARGER BOTTOM PLATE FOR MOUNTING



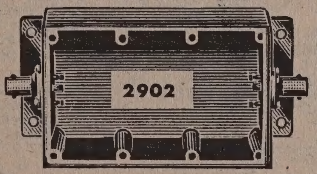
Larger plate, when attached to box, provides flanges for mounting. Made of .080" aluminum #6061-T6, clear anodized per MIL-A-8625A. **Size:** 5.25" x 2.50"; four mtg. holes, .201" dia., spaced 4.75" x 1.75". **Pomona No. 3328**—Net, Lots 1–24 . **$1.25;** 25–49 . **$1.13;** 50–99 . **$1.06;** 100–249 . **$0.88**

SHIELDED "BLACK BOXES" WITH MOUNTING FLANGES

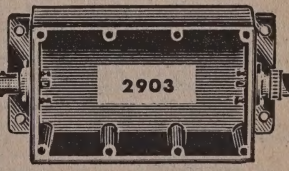
cellent for RF applications. Permit compact packaging of ltage dividers, isolation or impedance-matching networks, and rious other components. **Two flanges for rapid mounting.** lder turret terminals provide permanent, noise-free connection. ght #4-40 x ¼" screws secure cover for proper shielding. **Operat- Temperature:** −55° C to +150° C. **Working Voltage:** 500 V peak. **Noise Rejection:** Greater than 70 dB. **Shielded Housing:** Diecast aluminum; blue baked-enamel finish per Federal Standard 595 #25109 over phosphoric etch per MIL-C-15328A. **Cover:** .080" aluminum #6061-T6 with clear anodized finish per MIL-A-8625A.



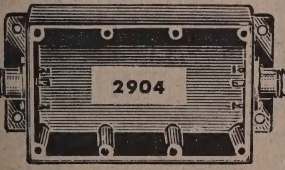
BNC JACK BOTH ENDS



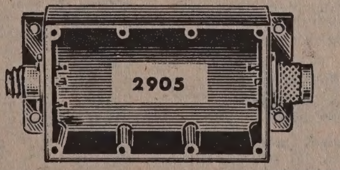
BNC JACK TO BNC PLUG



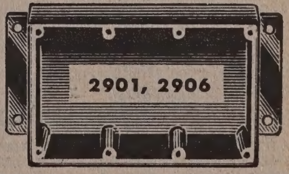
TYPE "N" JACK BOTH ENDS



TYPE "N" JACK TO TYPE "N" PLUG



WITHOUT END CONNECTORS



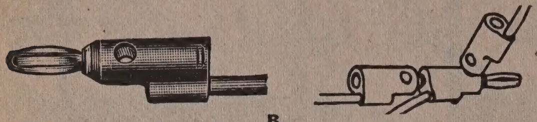
Pomona Number	1st End Connector	2nd End Connector	Net Each, Lots of 1-24	25-49	50-99	100-249
2901	None	None	$ 5.85	$ 5.27	$ 4.97	$4.10
2902	UG290A/U type BNC jack	UG290A/U type BNC jack	9.85	8.87	8.37	6.90
2903	UG290A/U type BNC jack	UG1104A/U type BNC plug	10.85	9.77	9.22	7.60
2904	UG58A/U type N jack	UG58A/U type N jack	10.85	9.77	9.22	7.60
2905	UG58A/U type N jack	Type N plug	14.85	13.37	12.62	10.40
2906*	None	None	5.85	5.27	4.97	4.10

Jnpainted.

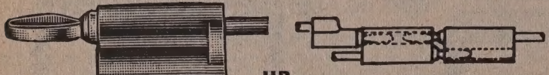
Pomona Patch Cords

PATCH CORDS AND STACK-UP CONNECTING LEADS

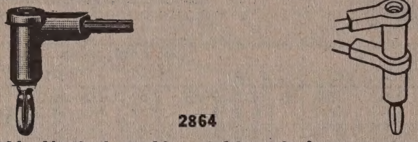
Extra flexible polyvinyl insulation on all wires. Insulating jacket molds the plug, solder connection and wire insulation into a long lasting single piece. Banana plugs are one piece heat treated beryllium copper spring. Contact resistance less than 0.001 ohm per plug in standard .166″ dia. banana jacks. Model B, HB, 1440, 1743 and 1987 rated 15 amps continuous and 30 amps intermitten Wire is 18 gauge, stranding 65 x 36 T.C. with .144″ O.D. polyviny insulation; 10,000 WVDC. Reliable solder bonded connection withstand pull test in excess of 50 lbs. **See listings and/or pric table for colors and lengths.**


B

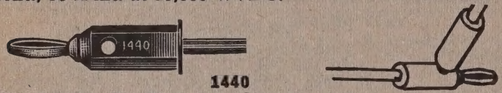
Model B—Vertical and horizontal stacking banana plug patch cord. Greatly simplifies circuit connections and changes. Preserves compactness even with the most complex stacking.


HB

Model HB—Dual purpose extension-stacking patch cord. Dual purpose. Shields all hot leads when used as extension cord. Endless extension couplings possible with any banana plug patch cord. Permits vertical stacking from any jack. Countless 2-in-1 applications.

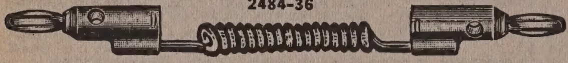

2864

Model 2864—Vertical stacking right-angle banana plug patch cord. Vertical stacking feature allows endless circuit connections and right-angle design keeps wires close to chassis. Rated 15 A cont., 30 A int. at 10,000 WVDC.

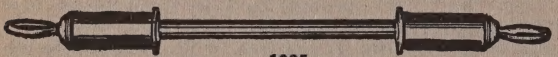


1440

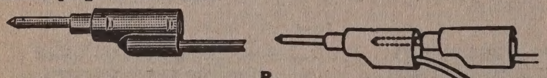
Model 1440—Horizontal stacking banana plug patch cord. Similar to Model B, but without jacks; horizontal stacking only.

2484-36


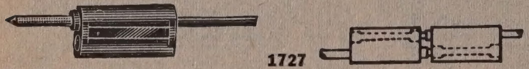
Model 2484-36—Retractile patch cord with stack-up banana plugs. Cord is 12″ retracted, 36″ extended, permitting its use in place of cords of many lengths. Tough thermoplastic molded to plug body and wire. Wire 20 ga., 41 x 36 T.C. stranded with rubber insulation .145″ O.D. Rated 4 A cont., 10 A int. at 5000 WVDC. **Colors:** Red, black.


1985

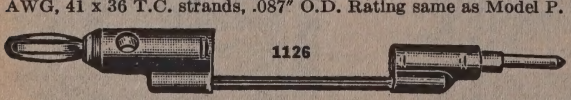
Model 1985—Banana plug patch cord. Ideal for general lab work. Banana plugs at both ends.


P

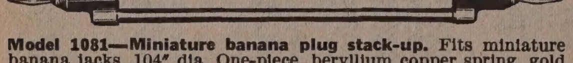
Model P—Pin tip vertical stacking patch cord. Ideal for most circuit designs where space is at a premium. Fits instruments with .080″ jacks. Beryllium copper contact for vertical stacking; gold flash finish. Tip .080″ dia. x ½″ extended type. Wire 20 ga., 41 x 36 T.C. stranded with polyvinyl insulation .087″ O.D. Rated 5 A continuous and 10 A intermittent; 5000 WVDC.


1727

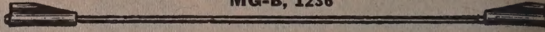
Model 1727—Extension or stack-up patch cord. Dual purpose, .080″ dia. tip. Insulates exposed leads when used as extension cord. Many couplings possible. Vertical stacking from .080″ jack. Beryllium copper, heat-treated receptacle, gold flashed. Wire 20 AWG, 41 x 36 T.C. strands, .087″ O.D. Rating same as Model P.


1126

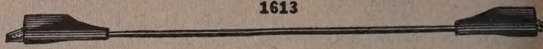
Model 1126—Banana plug to pin stack-up patch cord. Combination of Model B and P: Stack-up banana plug on one end; stack-up pin tip other end. Wire 20 ga., 41 x 36 T.C. stranded with polyvinyl insulation .087″ O.D. Rating same as Model P.


1081

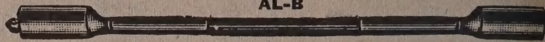
Model 1081—Miniature banana plug stack-up. Fits miniature banana jacks .104″ dia. One-piece, beryllium copper spring, gold flashed. Wire 20 ga., 41 x 36 T.C. stranded with polyvinyl insuation .087″ O.D. Rating same as Model P.

MG-B, 1236


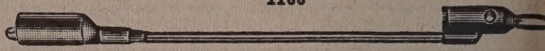
Model MG-B—Insulated minigator clips. Insulated, cadmium plated steel, miniature clips on each end. Wire 18 ga., 65 x 3 T.C. stranded, polyvinyl insulation .144″ O.D. **Colors:** Red, black **Model 1236—Insulated minigator clips.** Same as Model MG- above, but wire 20 ga., 41 x 36 T.C. stranded; polyvinyl insula tion, .087″ O.D. **Colors:** Red or black.

1613


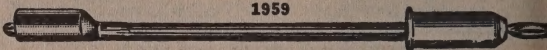
Model 1613—Insulated microgator clips. Insulated microgato clips on each end of 20 ga., 41 x 36 T.C. stranded wire with flexibl polyvinyl insulation, .087″ O.D. Clips are solid copper. **Color** Red or black.

AL-B


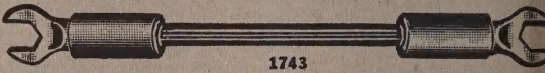
Model AL-B—Insulated alligator clips. Insulated alligator clip on each end of 18 ga. 65 x 36 stranded wire with flexible polyvin insulation .144″ O.D. Cadmium-plated steel clips. **Colors:** Re or black.

1166


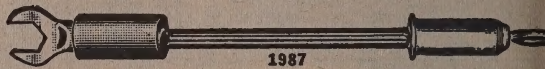
Model 1166—Alligator/stacking banana plug test leads. Adapt to equipment using standard banana jacks. Insulated, cadmium plated steel alligator clip on one end; banana plug molded to othe end. Wire 18 ga., 65 x 36 T.C. stranded. Extra flexible polyvin insulation .144″ O.D. **Colors:** Red, black.

1959


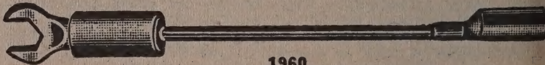
Model 1959—Alligator/banana plug test leads. Insulated, cad mium-plated steel alligator clip on one end; banana plug molde to other end. Wire 18 ga., 65 x 36 T.C. stranded. Extra flexibl polyvinyl insulation .144″ O.D. **Colors:** Red, black.


1743

Model 1743—Insulated spade lug jumper. Heavy-duty, machine 1-piece, nickel-plated brass spade lugs molded to 18 AWG, 65 x 3 T.C. stranded wire. Flexible polyvinyl insulation .144″ O. **Colors:** Black, red, green, white.


1987

Model 1987—Insulated spade lug to banana plug jumper. Sam as 1743 except heavy-duty machined, nickel-plated brass spad lug on one end; nickel-plated banana plug other end. **Color** Red or black.


1960

Model 1960—Insulated spade lug to alligator clip. Machine nickel-plated brass spade lug on one end; cadmium-plated ste alligator clip vinyl insulated other end. Insulated 18 ga., 65 x 3 T.C. stranded wire. Polyvinyl insulation, .144″ O.D. **Color** Red or black.

PRICE TABLE

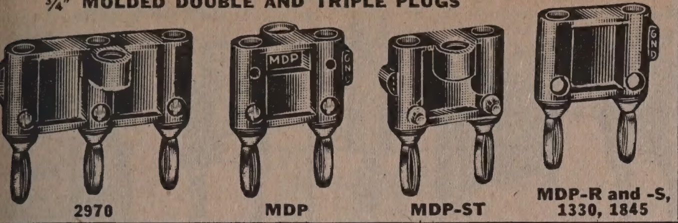
Specify Color: Available in black, brown, red, orange, yello green, blue, violet, gray or white unless otherwise noted. Insulato on alligator, minigator and microgator clips supplied red on a red wire units; black on other colors of wire.

Pomona Models*	Net Each, Lots of			
	1-24	25-49	50-99	100-24
AL-B-4, -8, -12, -24, -36†	$1.10	$0.99	$0.94	$0.77
B-4, -8, -12, -18, -24, -36	1.60	1.44	1.38	1.12
HB-4, -8, -12, -18, -24, -36	1.85	1.67	1.57	1.30
MG-B-4, -8, -12, -24, -36†	.95	.86	.81	.67
P-4, -8, -12, -18, -24, -36	1.75	1.58	1.49	1.23
1081-4, -8, -12, -18, -24, -36	1.60	1.44	1.38	1.12
1126-4, -8, -12, -18, -24, -36†	1.75	1.58	1.49	1.23
1166-4, -8, -12, -24, -36†	1.25	1.13	1.06	.88
1236-4, -8, -12, -24, -36†	.95	.86	.81	.67
1440-4, -8, -12, -18, -24, -36	1.25	1.13	1.06	.88
1613-4, -8, -12, -24, -36†	.95	.86	.81	.67
1727-4, -8, -12, -18, -24, -36	1.85	1.67	1.57	1.30
1743-12, -24, -36‡	1.40	1.26	1.19	.98
1959-4, -8, -12, -24, -36†	1.25	1.13	1.06	.88
1960-12, -24, -36†	1.40	1.26	1.19	.98
1985-4, -8, -12, -18, -24, -36	1.25	1.13	1.06	.88
1987-12, -24, -36†	1.40	1.26	1.19	.98
2484-36†§	2.95	2.66	2.51	2.07
2864-4, -8, -12, -18, -24, -36	1.60	1.44	1.38	1.12

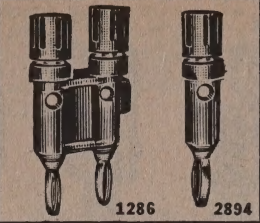
*Suffix indicates length: -4, 4″; -8, 8″; -12, 12″, etc. All mode available in 48″ length; use suffix -48; add $0.05 to prices show All models also available in 60″ length; use suffix -60; add $0. to prices shown. †Specify red or black. ‡Specify black, red, gree or white. §Retractile type, 36″ extended, 12″ retracted only.

Pomona Plugs and Adapters

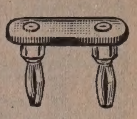
¾″ MOLDED DOUBLE AND TRIPLE PLUGS



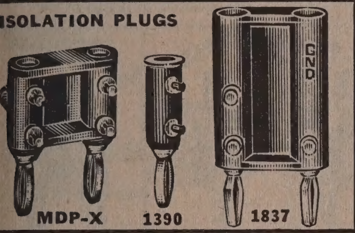
BINDING POST ADAPTERS



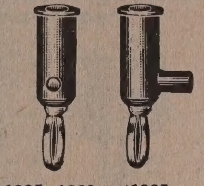
METAL SHORTING BAR



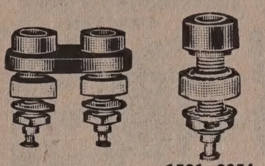
ISOLATION PLUGS



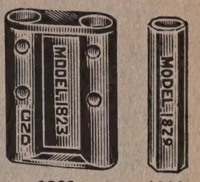
SOLDERLESS PLUGS



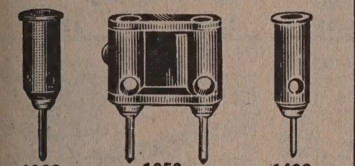
BANANA JACKS



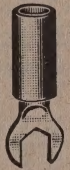
SPLICES



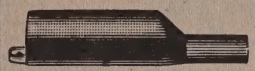
PIN TIP PLUGS



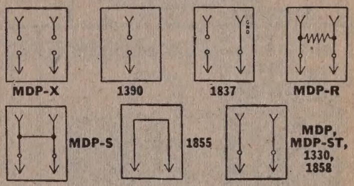
LUG



ALLIGATOR CLIPS



CIRCUIT DIAGRAMS



odel 2970 ¾″ Triple Banana Plug—eal for balanced line 2-conductor shielded ole assemblies. Banana jacks permit top ck-up for multiple connections. Set ews for leads. **Colors:** Red or black.

odel MDP ¾″ Double Banana Plug—nilar to 2970 but double plug on ¾″ s. Top stack-up type with set screws. **lors:** Black, brown, red, orange, yellow, een, blue, violet, gray, white.

odel MDP-ST—Similar to MDP but der turret terminals. **Color:** Black.

odel MDP-S ¾″ Double Banana Plug th Insulated Shorting Bar—Banana gs internally solder-bonded with 14 ga. re. Jacks for top stack-up; body cross les for side stack-up. Resistance under milliohms installed. **Colors:** Natural, , black.

odel MDP-R ¾″ Double Banana Plug th Precision Resistor—For uses requir- rapid interchange of resistances. De- sited carbon, ½-watt, 1% resistor olded internally. **Specify** 50, 75, 120, 130, 0, 200, 250, 500, 600, 900, 1K, 5K, 10K, K, 50K, 100K, 200K, 250K or 500K ms; 1, 2, 5 or 10 megohms (value mped on plug top). **Color:** Red.

odel 1845 Tip Jacks to ¾″ Double nana Plug Adapter—Permits .080″ tip gs to be used with equipment having ″ banana jacks. Body cross holes for e stack-up. **Color:** Black.

odel 3600 Cable Plug—For use with RG 8A/U and Belden 9272. Length, 1.50″, ., .50″.

odel 1330 Component-Mounting ¾″ uble Banana Plug—Features recess for ounting small components, set screws for ds, and banana jacks for top stack-up of ltiple connections. **Colors:** Red or black.

odel 1330-ST—Similar to 1330 but solder rret terminals. **Colors:** Red or black.

Model 1286 Binding Posts to ¾″ Double Banana Plug Adapter—Has insulated binding posts on ¾″ ctrs. for rapid mounting and interchangeability of components and top stack-up. Thru-holes in plug body provide side stack-up. **Color:** Black body; red and black posts.

Model 2894 Binding Post to Single Banana Plug Adapter—Features insulated binding post for top stack-up and .166″ cross hole in body for side stack-up. Single banana plug is for use with standard .166″ banana jack. **Colors:** Red or black.

Model 1855 Metal Shorting Bar to ¾″ Double Banana Plugs—Low profile, nickel-plated brass shorting bar. Double plugs on ¾″ ctrs. swaged to ³⁄₃₂″ thick bar. Resistance under 1.5 milliohms installed.

Model MDP-X ¾″ Double Banana Plug with Four Terminal Isolation—Top stack-up receptacles isolated from plugs. Ideal for inserting matching networks in lab VTVM's, signal generators, etc. Gold-flashed solder turret terminals. **Color:** Red.

Model 1390 Single Banana Plug with Two Terminal Isolation—Top stack-up receptacle (.166″ jack) isolated from lower plug to permit addition of series resistors, diodes, etc. Gold-flashed solder turret terminals. **Colors:** Red or black.

Model 1837 ¾″ Double Banana Plug with Three Terminal Isolation—Excellent for L and Pi-networks. Gold-flashed solder turret terminals. Straight feed-thru ground; hot side isolated. Receptacles, .166″ jacks on ¾″ ctrs. **Color:** Blue.

Model 1325 Stack-Up Solderless Banana Plug—Upper .166″ banana jack to single banana plug. Set screw for wire. **Colors:** Black, brown, red, orange, yellow, green, blue, violet, gray, white.

Model 1825—Same as 1325 but with integral safety collar to cover exposed wire leads. **Colors:** Black, brown, red, orange, yellow, green, blue, violet, gray, white.

Model 1809 Tip Jack to Banana Plug Adapter—Permits .080″ pin tip patch cords to be used with banana jack equipment. .166″ cross hole in body for side stack-up. **Colors:** Red or black.

Model 2269 Insulated ¾″ Double Banana Jack Assembly—Solder turret terminals. Ceramic insulators. Two ⅜″ holes on ¾″ ctrs. Mounts in panels .035″ to .275″ thick. With washers, nuts. One red, one black jack. **Plate Colors:** Black, **2269;** or red, **2269-2.**

Model 1581 Insulated Banana Jack Assembly—Single banana jack version of 2269 with ceramic insulator, solder turret, etc. Insulator head molded to body. Rated 2500 WVDC. **Colors:** Black, brown, red, orange, yellow, green, blue, violet, gray, white.

Model 2854 Gold-Plated Insulated Banana Jack Assembly—Similar to Model 1581.

Model 1823 ¾″ Double Banana Plug Splice—Offers rapid method for splicing cables. Thermoplastic body; .166″ jacks on each end on ¾″ ctrs. **Colors:** Red or black.

Model 1829 Single Banana Plug Splice—Single splice version of 1823. One jack on each end. **Colors:** Red or black.

Model 1922 Stack-Up Solderless Pin Tip Plug—Internal set screw for wire. Gold-flashed tip jack accepts .080″ pin. **Colors:** Black or red.

Model 1858 ¾″ Banana Jacks to Double Pin Tip Adapter—Permits use of single or double banana plugs with tip jack equipment. .080″ pin tips on ¾″ ctrs. Internal set screws. **Color:** Black.

Model 1432 Banana Jack to Pin Tip Adapter—.166″ jack to .080″ pin tip with .166″ cross hole in body for side stack-up. **Colors:** Red or black.

Model 1614 Insulated Spade Lug Adapter—.166″ banana jack to lug with .26″ opening. Fits ¼″ stud. **Colors:** Red, black.

Model 2240 Insulated Alligator Clip to Banana Jack—Vinyl-insulated, cadmium plated clip to banana jack. **Colors:** Red or black. Unassembled.

Model 3289 Gold-Plated Insulated Alligator Clip to Banana Jack—Similar to No. 2240.

Model 1437 Insulated Alligator Clip to Pin Tip Jack—Vinyl-insulated clip to gold-flashed, beryllium-copper tip jack. **Colors:** Red or black. Unassembled.

PRICE TABLE

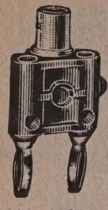
hen item is available in choice of colors, please specify color desired.

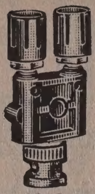
omona Model	Net Each, Lots of			
	1-24	25-49	50-99	100-249
DP	$0.85	$0.77	$0.72	$0.60
DP-R	2.95	2.66	2.51	2.07
DP-S	1.25	1.13	1.06	.88
DP-ST	.95	.86	.81	.67
DP-X	3.25	2.93	2.76	2.28
286	2.75	2.48	2.34	1.93
325	.50	.45	.43	.35
330	.85	.77	.72	.60
330-ST	.95	.86	.81	.67
390	1.50	1.35	1.28	1.05
432	.25	.23	.21	.18
437	.65	.59	.55	.46
581	.25	.23	.21	.18
614	.35	.32	.30	.25
809	.75	.68	.64	.53
823	.50	.45	.43	.35

Pomona Model	Net Each, Lots of			
	1-24	25-49	50-99	100-249
1825	$0.50	$0.45	$0.43	$0.35
1829	.25	.23	.21	.18
1837	2.75	2.48	2.34	1.93
1845	.95	.86	.81	.67
1855	.95	.86	.81	.67
1858	.75	.68	.64	.53
1922	.95	.86	.81	.67
2240	.20	.18	.17	.14
2269-0	.75	.68	.64	.53
2269-2	.75	.68	.64	.53
2854	.35	.32	.30	.25
2894	1.50	1.35	1.28	1.05
2970	1.25	1.13	1.06	.88
3289	.65	.59	.55	.46
3600	7.50	6.75	6.38	5.25

Pomona Test Adapters

BNC ADAPTERS


1269, 1868, 1656-1, 1468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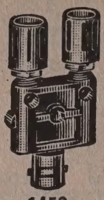
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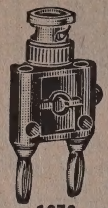
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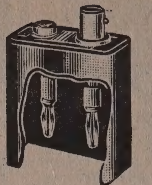
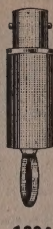
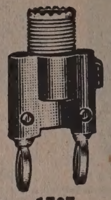

1645


1894

UHF ADAPTERS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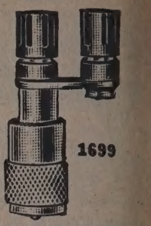
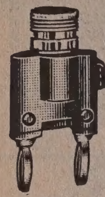

1699

TYPE N ADAPTERS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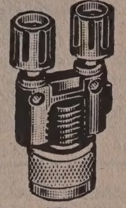
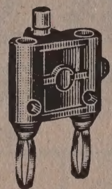
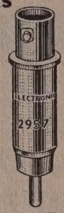
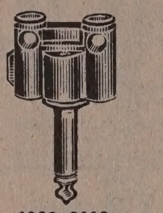

1796

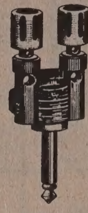
PHONO PLUG ADAPTERS


1442


2957

PHONE PLUG ADAPTERS


1980, 2112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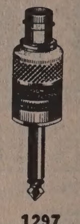
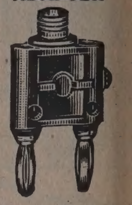
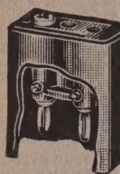
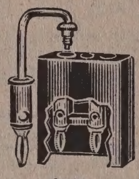

1297

MICRODOT ADAPTER

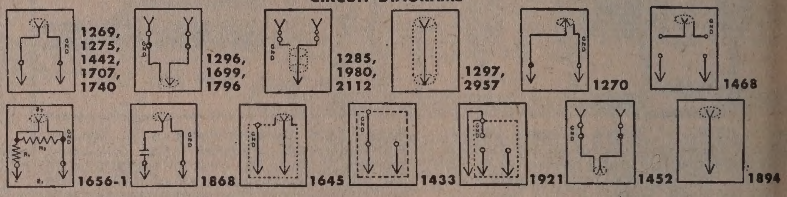

1275

SHIELDED CAN ADAPTERS


1433


1921

CIRCUIT DIAGRAMS



Model 1269 BNC Receptacle to ¾″ Double Banana Plug—Permits BNC plug to be used with banana jack equipment. Body cross holes for side stack-up. **Color:** Black.

Model 1868 BNC Receptacle to ¾″ Double Banana Plug Signal Isolation Adapter—Same as 1269, but molded-in ceramic capacitor rated .01 µF at 200 WVDC, ±20%. Isolates DC signals from VTVM or signal generator. **Color:** Blue.

Model 1656-1 BNC Matching Pad—Same as 1269, but with built-in deposited carbon ¼-watt, 1% resistor.

Model	Color	Range, Ohms
1656-1	Yellow	600 to 50
1656-2	Red	600 to 75
1656-3	White	600 to 93
1656-4	Blue	300 to 50

Model 1468 BNC Receptacle to ¾″ Double Banana Plug with Four Terminal Isolation—Similar to 1269, but isolation on all connections. Ideal for matching pad networks. Gold-flashed solder turret terminals. **Color:** Black.

Model 1296 Binding Posts to BNC Plug Adapter—Adapts BNC receptacle to ¾″ spaced banana plugs. Insulated binding posts. Excellent for lab 'scopes. Body cross holes for side stack-up. **Color:** Black body; red and black posts.

Model 1452 Binding Posts to BNC Receptacle Adapter—Similar to 1296 adapter, but adapts BNC plug to ¾″ spaced banana plugs. **Color:** Black body; red, black posts.

Model 1270 BNC Plug to ¾″ Double Banana Plug—Permits BNC receptacle to be used with banana jack equipment. Minimizes number of coaxial connections for maximum efficiency. Body cross holes for side stack-up connections. **Color:** Black.

Model 1645 BNC Receptacle to Shielded ¾″ Double Banana Plug—Adapts BNC plug to ¾″ spaced binding posts. Anodized aluminum shield reduces noise pickup more than 70 dB. Recommended for low level inputs to 'scopes, wave analyzers and similar test instruments. **Color:** Black.

Model 1894 BNC Receptacle (UG1094/U) to Single Banana Plug Adapter—Permits BNC plug to be used with banana jack equipment. Inner conductor connected only. Adapts lab VTVM, 'scope and generator inputs to readily available coaxial cables. **Color:** Black.

Model 1707 UHF Receptacle to ¾″ Double Banana Plug—Adapts ¾″ spaced banana jacks to UHF plug. Body cross holes for side stack-up. **Color:** Black.

Model 1699 Binding Posts to UHF Plug Adapter—Adapts UHF receptacle to ¾″ spaced banana plugs. **Color:** Red center conductor post; black ground.

Model 1740 N Receptacle to ¾″ Double Banana Plug—Adapts ¾″ spaced jacks to N plug, as for connecting RF equipment to conventional test equipment. Body cross holes. **Color:** Black.

Model 1796 Binding Posts to N Plug Adapter—Adapts N jack to ¾″ spaced banana plugs. Body cross holes. **Color:** Black body; red and black posts.

Model 1442 Phono Jack to ¾″ Double Banana Plug—Permits phono plug to be used with equipment having banana jacks or binding posts. Body cross holes. **Color:** Black.

Model 2957 BNC Receptacle (UG1094/U) to Phono Plug Adapter—Readily adapts phono jack equipment to available BNC coaxial cables. All metal construction reduces pickup more than 70 dB. **Color:** Natural.

Model 1980 ¾″ Double Banana Jack to Standard Phone Plug Adapter—Adapts phone jack to ¾″ banana plugs. Cross holes. Phone plug ¼″ dia. x 1 3/16″ lg. **Color:** Black.

Model 2112 ¾″ Double Banana Jack to PJ-051 Phone Plug Adapter—Permits single or double banana plugs to be used with equipment having 3-circuit phone jacks for ¼″ dia. phone plugs. Tip connected to adapter hot side, ring to ground side. Sleeve, no connection. PJ-051 plug is interchangeable with WE310. **Color:** Black.

Model 1285 Binding Posts to Standa Phone Plug Adapter—Adapts phone ja to ¾″ spaced banana plugs. Insulat binding posts. Body cross holes. Pho plug ¼″ dia. x 1 3/16″ lg. **Color:** Black bod red and black posts.

Model 1297 BNC Receptacle (UG1094/ to Standard Plug Adapter—Permits BN plug to be used with phone jack equi ment. Adapts equipment to available BN coaxial cables. Phone plug ¼″ dia. x 1 lg. All metal. **Color:** Natural.

Model 1275 Microdot Receptacle to Double Banana Plug—Adapts ¾″ spac jacks to miniature, screw-on coaxial plu Body cross holes for side stack-up. R ceptacle has 10-32 thread. Impedance, ohms. **Color:** Green.

Model 1433 Shielded ¾″ Double Bana Plug with In-Line Cable Entry—Anodiz aluminum shell; 7/32″ dia. cable openi Gold-flashed solder turret terminals. No pickup down 70 dB. One-piece, nick plated beryllium copper springs. Grou clearly molded in shell. Rated 15 am cont. at 1,200 WVDC; capacity, 2.5 pF 1 MHz. Size, 1 11/16″ w. x 1″ d. x 1 31/32″ **Color:** Black.

Model 1921 Balanced Line, Shielded Double Banana Plug—Unique 3-termi design allows connection to shielded tw conductor cable while maintaining b anced conditions. Anodized aluminu shell. Gold-flashed solder turrets. L noise and minimum ground loop err Rated 15 amps cont. at 1,000 WVDC pe line to shield and at 2,000 WVDC pe line to line. Capacity at 1 MHz, 2.0 line to line and 3.0 pF lines to shie **Color:** Black.

PRICE TABLE

Pomona Model	Net Each, Lots of 1-24	25-49	50-99	100-249	Pomona Model	Net Each, Lots of 1-24	25-49	50-99	100-2
1269	$3.25	$2.93	$2.76	$2.28	1656*	$10.85	$9.77	$9.22	$7.6
1270	3.95	3.56	3.36	2.77	1699	5.85	5.27	4.97	4.1
1275	7.85	7.07	6.67	5.50	1707	4.85	4.37	4.12	3.4
1285	4.85	4.37	4.12	3.40	1740	6.85	6.17	5.82	4.8
1296	4.95	4.46	4.21	3.47	1796	7.85	7.07	6.67	5.5
1297	5.85	5.27	4.97	4.10	1868	7.85	7.07	6.67	5.5
1433	2.75	2.48	2.34	1.93	1894	2.50	2.25	2.13	1.7
1442	3.85	3.47	3.27	2.70	1921	5.85	5.27	4.97	4.1
1452	4.95	4.46	4.21	3.47	1980	3.25	2.93	2.76	2.2
1468	9.85	8.87	8.37	6.90	2112	7.85	7.07	6.67	5.5
1645	3.75	3.38	3.19	2.63	2957	3.50	3.15	2.98	2.4

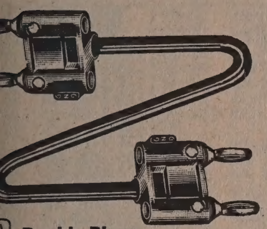
*Specify color.

Pomona Components

¾″ DOUBLE-PLUG STACK-UP PATCH CORD AND TEST LEADS

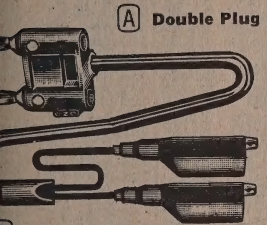
lded plastic plug body fully insulated. Permits parallel multiple stacking. Ground connection clearly marked. Shielded double plugs
e black-anodized aluminum case. One piece beryllium copper spring. Solder bonded noise-free connection. Fits standard banana
ks .166″ dia. **Cable Used: 2BA, 1368, 2184 Series**—Two cond. twisted pair, 18 AWG, stranded 65 x 36 T.C. Vinyl insul.; gray vinyl
ket .250″ O.D. Nom. cap., 30 pF/ft. **2BB Series**—Shielded microphone cable, polyethylene insulation; gray vinyl jacket .205″ O.D.
m. cap., 25 pF/ft. **2BC Series 1569-C-48**—RG-58C/U shielded coaxial cable; polyethylene insulation; black vinyl jacket .195″ O.D.
m. cap., 30 pF/ft. (1569-C-48, 28.5 pF/ft.). Types with two single plugs or clips on one end color coded; one red, one black.

WITH STANDARD AND SHIELDED DOUBLE PLUGS


Double Plugs

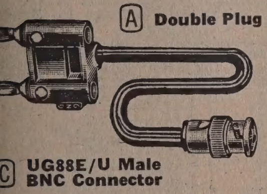
BOTH ENDS FIG. A

Cable Lgth.		Model No.	Net Each
18″	A	2BA-18	1-9 $4.95 10-24 $4.46 25-49 $4.21 50-99 $3.47
24″		2BA-24	
30″		2BA-30	
36″		2BA-36	
48″		2BA-48	
60″		2BA-60	
18″	B	2BB-18	
24″		2BB-24	
30″		2BB-30	
36″		2BB-36	
48″		2BB-48	
60″		2BB-60	
18″	C	2BC-18	
24″		2BC-24	
30″		2BC-30	
36″		2BC-36	
48″		2BC-48	
60″		2BC-60	


A Double Plug
B Aligator Clips

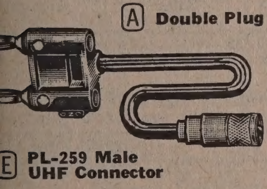
END FIGS. A AND B

18″	A	2BA-AL-18	1-9 $5.95 10-24 $5.36 25-49 $5.06 50-99 $4.17
24″		2BA-AL-24	
30″		2BA-AL-30	
36″		3BA-AL-36	
48″		2BA-AL-48	
60″		2BA-AL-60	
18″	B	2BB-AL-18	
24″		2BB-AL-24	
30″		2BB-AL-30	
36″		2BB-AL-36	
48″		2BB-AL-48	
60″		2BB-AL-60	
18″	C	2BC-AL-18	
24″		2BC-AL-24	
30″		2BC-AL-30	
36″		2BC-AL-36	
48″		2BC-AL-48	
60″		2BC-AL-60	


A Double Plug
C UG88E/U Male BNC Connector

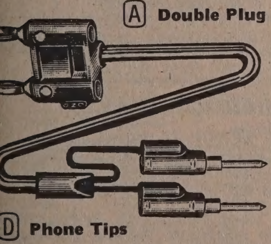
END FIGS. A AND C

Cable Lgth.		Model No.	Net Each
18″	B	2BB-BNC-18	1-9 $5.95 10-24 $5.36 25-49 $5.06 50-99 $4.17
24″		2BB-BNC-24	
30″		2BB-BNC-30	
36″		2BB-BNC-36	
48″		2BB-BNC-48	
60″		2BB-BNC-60	
18″	C	2BC-BNC-18	
24″		2BC-BNC-24	
30″		2BC-BNC-30	
36″		2BC-BNC-36	
48″		2BC-BNC-48	
60″		2BC-BNC-60	


A Double Plug
E PL-259 Male UHF Connector

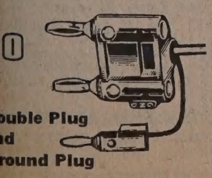
END FIGS. A AND E

Cable Lgth.		Model No.	Net Each
18″	C	2BC-UHF-18	1-9 $5.95 10-24 $5.36 25-49 $5.06 50-99 $4.17
24″		2BC-UHF-24	
36″		2BC-UHF-36	
48″		2BC-UHF-48	
60″		2BC-UHF-60	


A Double Plug
D Phone Tips

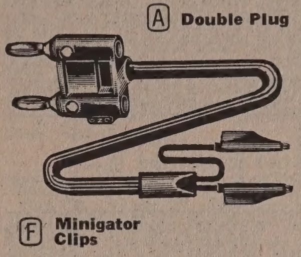
END FIGS. A AND D

Cable Lgth.		Model No.	Net Each
18″	C	2BC-PP-18	1-9 $7.50 10-24 $6.75 25-49 $6.38 50-99 $5.25
24″		2BC-PP-24	
36″		2BC-PP-36	
48″		2BC-PP-48	
60″		2BC-PP-60	


I
ouble Plug
nd
round Plug

BOTH ENDS FIG. I

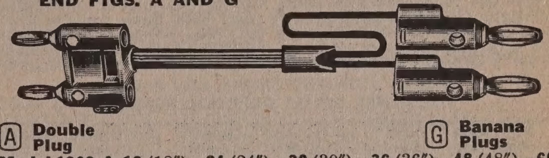
Model 1167-18 (18″), **-24** (24″), **-30** (30″), **-36** (36″), **-48** (48″), **-60** (60″)—Shielded 2-conductor mike cable, polyethylene insulation; vinyl jacket .231″ O.D. Nom. cap. between cond., 18 pF/ft.; between one cond. and remaining cond. connected to shield, 32 pF/ft. Gray cable and double plug with green single ground plug. Net Each, 1–9, **$8.95**; 10–24, **$8.06**; 25–49, **$7.61**; 50–99, **$6.27**


A Double Plug
F Minigator Clips

END FIGS. A AND F

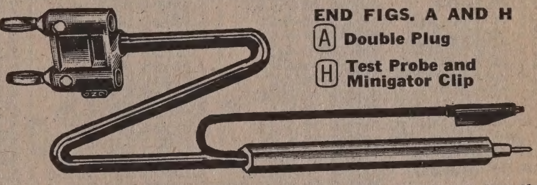
Cable Lgth.		Model No.	Net Each
18″	A	2BA-MG-18	1-9 $5.95 10-24 $5.36 25-49 $5.06 50-99 $4.17
24″		2BA-MG-24	
30″		2BA-MG-30	
36″		2BA-MG-36	
48″		2BA-MG-48	
60″		2BA-MG-60	
18″	B	2BB-MG-18	
24″		2BB-MG-24	
30″		2BB-MG-30	
36″		2BB-MG-36	
48″		2BB-MG-48	
60″		2BB-MG-60	
18″	C	2BC-MG-18	
24″		2BC-MG-24	
30″		2BC-MG-30	
36″		2BC-MG-36	
48″		2BC-MG-48	
60″		2BC-MG-60	

END FIGS. A AND G


A Double Plug
G Banana Plugs

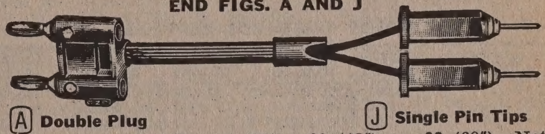
Model 1368-A-18 (18″), **-24** (24″), **-30** (30″), **-36** (36″), **-48** (48″), **-60** (60″)—Net 1–9, **$5.95**; 10–24, **$5.36**; 25–49, **$5.06**; 50–99, **$4.17**

END FIGS. A AND H

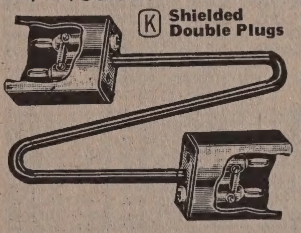

A Double Plug
H Test Probe and Minigator Clip

Model 1569-C-48 (48″)—Thermo-plastic, red, insulated handle molded to probe tip and cable. Net Each, 1–9, **$6.85**; 10–24, **$6.17**; 25–49, **$5.82**; 50–99, **$4.80**

END FIGS. A AND J

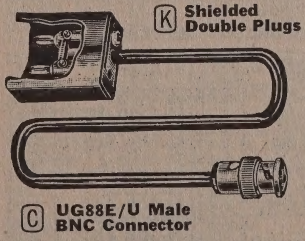

A Double Plug
J Single Pin Tips

Model 2184-A-24 (24″), **-36** (36″), **-48** (48″) or **-60** (60″)—Net Ea., 1-9, **$5.95**; 10-24, **$5.36**: 25-49, **$5.06**; 50-99, **$4.17**


K Shielded Double Plugs

BOTH ENDS FIG. K

Cable Lgth.		Model No.	Net Each
18″	C	1550-C-18	1-9 $7.50 10-24 $6.75 25-49 $6.38 50-99 $5.25
24″		1550-C-24	
30″		1550-C-30	
36″		1550-C-36	
48″		1550-C-48	
60″		1550-C-60	


K Shielded Double Plugs
C UG88E/U Male BNC Connector

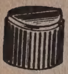
END FIGS K AND C

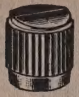
Cable Lgth.		Model No.	Net Each
18″	C	1555-C-18	1 $7.95 10-24 $7.16 25-49 $6.76 50-99 $5.57
24″		1555-C-24	
30″		1555-C-30	
36″		1555-C-36	
48″		1555-C-48	
60″		1555-C-60	

NOTE: Cable color: 2BA and 2BB Series, std. color gray, matching molded plugs. Also available in 36″ length as std. color black, brown, red, orange, yellow, green, blue, violet, gray and white, molded plugs to match. Lengths other than 36″ available with colored cable. Minimum order for other lengths 25 pieces per color, per model, per length at no extra cost. 2BC Series black only, molded double plug to match.

Raytheon Control Knobs

MS91528 (STANDARD) AND DESIGNER SERIES CONTROL KNOBS


-1-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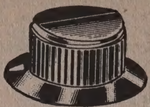
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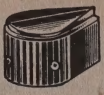
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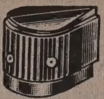
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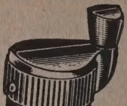
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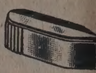

-7-

Approved types per MS91528, Rev. C; cross reference (MIL No. to Raytheon No.) available on request. Eight standard knob types in six basic sizes to meet your every requirement. **Order by complete Catalog Number:** E.g., G 70-3BL-2G indicates **Gray** color knob; approx. diameter of knob in hundredths of inches is **70** (.70″); description of knob is **-3** (see table below); knob is back lighted (**BL**); shaft size is **-2** (see table below); finish is **G** (matte).

Prefix (Color)		1st Number (Size)		2nd Number (Description)	3rd Number (Shaft Size)		Suffix (Finish)
No prefix	Black	50	½″	*	-1	⅛″	†
DS	Alum. cap	70	7/10″	*	-2	¼″	†
G‡	Gray	90	9/10″	*	-3	5/16″	
R‡	Red	125	1¼″	*	-4	.267″	
		175	1¾″	*			
		225	2¼″	*			

***Description:** **-1,** round no skirt; **-2,** round plain skirt; **-3,** round dial skirt; **-4,** pointer no skirt; **-5,** pointer plain skirt; **-6,** crank (spinner); **-7,** bar pointer, no skirt; **-8,** bar pointer, dial skirt with pointer mark. **BD,** black dot; **BL,** back lighted dial skirt; **CB,** concentric base for outer shaft has no cap, shaft hole drilled through; **LK,** knob lock pointer used with knob lock; **NP,** no pointer; **WD,** 3/32″ white dot on cap; **WL,** white line. †**Finish:** No suffix, mirror finish; suffix G, matte (dull) finish. ‡Not applicable to all types listed, write for complete information on colored knobs.

DESIGNER SERIES CONTROL KNOBS

Raytheon Cat. No.	List• Each	Raytheon Cat. No.	List• Each	Raytheon Cat. No.	List• Each
DS 70-1-1*	$0.82	DS 70-2BD-2G	$1.19	DS 90-2BD-2	$1.19
DS 70-1-1G*	.85	DS 70-3-1†	1.10	DS 90-2BD-2G	1.30
DS 70-1BD-1	.99	DS 70-3-1G†	1.12	DS 90-3-2†	1.13
DS 70-1BD-1G	1.00	DS 70-3-2†	1.00	DS 90-3-2G†	1.16
DS 70-1BD-2	.93	DS 70-3-2G†	1.03	DS 90-4-2	1.11
DS 70-1BD-2G	.95	DS 70-4-2	.92	DS 90-4-2G	1.13
DS 70-1-2	.84	DS 70-4-2G	.95	DS 90-5-2	1.21
DS 70-1-2G	.86	DS 70-5-2	1.11	DS 90-5-2G	1.24
DS 70-1-3*	.95	DS 70-5-2G	1.07	DS 125-1-2	1.17
DS 70-1-3G*	.97	DS 90-1-2	.95	DS 125-1-2G	1.19
DS 70-2-1	1.11	DS 90-1-2G	.97	DS 125-2-2	1.27
DS 70-2-1G	1.13	DS 90-1-3*	1.17	DS 125-2-2G	1.31
DS 70-2BD-1	1.20	DS 90-1BD-1G	1.25	DS 125-3-2†	1.35
DS 70-2BD-1G	1.23	DS 90-1BD-2	1.10	DS 125-3-2G†	1.39
DS 70-2-2	.98	DS 90-1BD-2G	1.15	DS 125-6-2	2.27
DS 70-2-2G	1.03	DS 90-2-2	1.17	DS 175-6-2G	2.70
DS 70-2BD-2	1.17	DS 90-2-2G	1.19		

COLOR KNOBS PER MS91528

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
G50-1-1*	$0.70	G70-3NP-2G	$1.09	G90-3CB-2G	$1.31
G50-1-1G*	.77	G70-4-2	.86	G90-3NP-2G	1.13
G50-2-1	.80	G70-4-2G	.93	G90-4-2G	1.03
G50-2-1G	.86	G70-5-2	.96	G90-5-2	1.06
G50-3-1G†	.95	G70-5-2G	1.03	G90-5-2G	1.12
G50-4-1	.70	G70-7WL-2G	1.11	G90-7WL-2G	1.11
G50-4-1G	.77	G70-8WL-2G	1.33	G90-8WL-2G	1.39
G50-5-1G	.86	R70-1WD-1	1.09	G125-1-2	.96
R50-1WD-1	.88	R70-1WD-1G	1.16	G125-1-2G	1.03
R50-1WD-1G	.94	R70-2-2	.96	G125-2-2G	1.12
G70-1-1*	.93	R70-2-2G	1.03	G125-3-2†	1.25
G70-1-1G*	.99	R70-3-2	1.18	G125-3-2G†	1.26
G70-1-2	.86	R70-3-2G	1.12	G125-6-2	2.58
G70-1-2G	.93	G90-1-1G	1.06	G125-6-2G	2.66
G70-2-2	.96	G90-1-2G	.97	G175-1-2	1.36
G70-2-2G	1.03	G90-1CB-2G	.97	G175-1-2G	1.41
G70-2CB-2G	1.13	G90-2-2	1.00	G175-3-2†	1.58
G70-3-2†	1.06	G90-2-2G	1.07	G175-3-2G†	1.68
G70-3-2G†	1.12	G90-3-2	1.10	G175-6-2	2.87
G70-3CB-2G	1.12	G90-3-2G	1.17	G225-6-2G	2.95

SPECIAL BLACK KNOBS PER MS91528

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each
50-1WD-1	$0.77	70-2WD-1	$1.08	90-1WD-2	$0.96
50-1WD-1G	.83	70-2WD-1G	1.14	90-1WD-2G	1.03
50-2WD-1	.86	70-2WD-2	1.03	90-2CB-2§	1.00
50-2WD-1G	.93	70-2WD-2G	1.10	90-2CB-2G§	1.06
70-1-3*	.93	70-3CB-2	1.05	90-2WD-2	1.06
70-1-3G*	.99	70-3CB-2G	1.03	90-2WD-2G	1.23
70-1CB-2G	.82	70B-3CB-2‡	.95	90-3CB-2§	.99
70B-1CB-2‡	.76	70B-3CB-2G‡	1.02	90-3CB-2G§	1.06
70B-1CB-2G‡	.82	90-1-3*	1.00	90-3CB-4§	1.10
70-1LK-2	1.02	90-1-3G*	1.04	90-3CB-4G§	1.17
70-1LK-2G	1.09	90-1CB-2§	.80	125-1LK-2	1.20
70-1WD-1	.98	90-1CB-2G§	.86	125-1LK-2G	1.34
70-1WD-1G	1.05	90-1CB-4§	.91	125-1WD-2G	1.08
70-1-WD-2	1.00	90-1CB-4G§	.97	125-3CB-2§	1.07
70-1-WD-2G	1.08	90-1LK-2	1.11	125-3CB-2G§	1.12
70-2CB-2G	.99	90-1LK-2G	1.13		
70B-2CB-2G‡	1.00	90-1WD-1G	1.09		

STANDARD BLACK KNOBS PER MS91528

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	Lis Eac
50-1-1*	$0.60	70-3NP-2	$0.92	90-8WL-2G	$1.
50-1-1G*	.67	70-3NP-2G	.98	125-1-2	.
50-2-1	.70	70-4-1	.82	125-1-2G	.
50-2-1G	.77	70-4-1G	.89	125-2-2	.
50-3-1†	.79	70-4-2	.77	125-2-2G	1.
50-3-1G†	.81	70-4-2G	.83	125-3-2†	1.
50-3BL-1G	2.49	70-5-1	.92	125-3-2G†	1.
50-3NP-1	.75	70-5-1G	.98	125-3BL-2G	3.
50-3NP-1G	.81	70-5-2	.86	125-3NP-2	1.
50-4-1	.62	70-5-2G	.93	125-3NP-2G	1.
50-4-1G	.67	70-7WL-2	.92	125-6-2	2.
50-5-1	.70	70-7WL-2G	.99	125-6-2G	2.
50-5-1G	.77	70-8WL-2	1.15	125-7-2	1.
70-1-1*	.82	70-8WL-2G	1.22	125-7-2G	1.
70-1-1G*	.89	90-1-1G*	.98	175-1-2	1.
70-1-2	.83	90-1-2	.81	175-1-2G	1.
70-1-2G	.90	90-1-2G	.88	175-2-2	1.
70B-1-2‡	.83	90-2-1G	1.03	175-2-2G	1.
70B-1-2G‡	.90	90-2-2	.91	175-3-2†	1.
70-2-1	.92	90-2-2G	.97	175-3-2G†	1.
70-2-1G	.98	90-3-1G†	1.21	175-3BL-2G	4.
70-2-2	.86	90-3-2†	1.00	175-3NP-2	1.
70-2-2G	.93	90-3-2G†	1.07	175-3NP-2G	1.
70B-2-2‡	.94	90-3BL-2G	3.54	175-6-2	2.
70B-2-2G‡	1.00	90-3NP-2	.96	175-6-2G	2.
70-3-1†	1.02	90-3NP-2G	1.03	225-1-2	1.
70-3-1G†	1.08	90-4-1G	1.00	225-1-2G	1.
70B-3-1‡	1.11	90-4-2	.87	225-2-2	1.
70B-3-1G‡	1.12	90-4-2G	.93	225-2-2G	1.
70-3-2†	1.04	90-5-2	.97	225-3-2†	1.
70-3-2G†	1.03	90-5-2G	1.03	225-3-2G†	1.
70B-3-2‡	1.13	90-7WL-2	.97	225-3NP-2G	1.
70B-3-2G‡	1.13	90-7WL-2G	.99	225-6-2	2.
70-3BL-2G	2.97	90-8WL-2	1.22	225-6-2G	2.

TACTILE SHAPE KNOBS PER MS91528

Final figure in number indicates tactile symbol and color ca 1—Intensity, Blue; 2—Tune, Orange; 3—Dimmer, White; 4- Gain, Red: 5—Focus, Violet; 6—Range, Yellow; 7—Bearin Green; 8—Marker, Gray.

Raytheon Cat. No.	List* Each	Raytheon Cat. No.	List* Each	Raytheon Cat. No.	Lis Eac
70-1-2G-1	$1.25	70-3-2G-1	$1.44	90-2-2G-4	$1.
70-1-2G-3	1.25	70-3-2G-2	1.44	90-2-2G-5	1.
70-1-2G-4	1.25	70-3-2G-3	1.44	90-2-2G-6	1.
70-1-2G-5	1.25	70-3-2G-4	1.44	90-4-2G-6	1.
70-1-2G-6	1.25	70-5-2G-6	1.46	90-5-2G-6	1.
70-2-2G-1	1.46	90-1-2G-1	1.44	125-6-2G-7	3.
70-2-2G-2	1.46	90-1-2G-2	1.44	125-6-2G-8	3.
70-2-2G-3	1.46	90-1-2G-3	1.44	175-6-2G-7	3.
70-2-2G-4	1.46	90-1-2G-4	1.44	175-6-2G-8	3.
70-2-2G-5	1.46	90-2-2G-1	1.61		
70-2-2G-6	1.46	90-2-2G-3	1.61		

*Standard or concentric, inner shaft. †With pointer. ‡Round ba §Used also with Designer Series as concentric base.

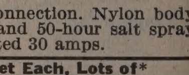
• ★OEM DISCOUNT SCHEDULES

Discounts are applied per item—NOT total units per orde

Quantity	Deduct from List		Quantity	Deduct from List	
	•Designer	*Others		•Designer	*Other
1–99	None	None	200–499	13%	20%
100–199	8%	15%	500–999	24%	30%

KNOBS AND ACCESSORIES CONTINUED ON NEXT PAGE

FIVE-WAY BINDING POSTS



Available in two models: Accepting standard banana plug; or, standard .080 test prod. Four other connections include: Wire through center hole; prod through center hole; wire coiled around post and clamped; turret terminal for solder connection. Nylon body with tin-plated metal parts to withstand 50-hour salt spray test; 250-hour 95% humidity test. Rated 30 amps.

Raytheon Cat. No.	Color	Type	Net Each, Lots of*			
			1-99	100-199	200-499	500-999
BP-100B	Black	Prod	$0.65	$0.55	$0.52	$0.49
BP-101R	Red	Prod	.65	.55	.52	.49
BP-105B	Black	Banana	.59	.51	.48	.44
BP-106R	Red	Banana	.59	.51	.48	.44

*Colors per style may be mixed for max. discount; minimum order 10 per style.

RAYTHEON Raytheon Knobs, Hardware

KNOB CROSS REFERENCE TO MS91528

MS- 1528B	Raytheon Cat. No.	MS- 91528B	Raytheon Cat. No.	MS- 91528B	Raytheon Cat. No.
C1B	50-1WD-1G	-1N2B	70-1-2G	-2P1B	90-4-1G
D1B	50-2-1G	-1N2BC	70-1CB-2G	-2P2B	90-4-2G
D1G	G50-2-1G	-1N2G	G70-1-2G	-2P2G	G90-4-2G
E1B	50-2WD-1G	-1N2GC	G70-1CB	-3C2B	125-1WD
F1B	50-3-1G		-2G		-2G
F1G	G50-3-1G	-1O1B	70-3BL-1G	-3D2B	125-2-2G
G1B	50-3NP-1G	-1O2B	70-3BL-2G	-3D2BC	125-2CB-2G
G1G	G50-3NP	-1P1B	70-4-1G	-3D2G	G125-2-2G
	-1G	-1P2B	70-4-2G	-3F2B	125-3-2G
K1B	50-5-1G	-1P2G	G70-4-2G	-3F2BC	125-3CB-2G
K1G	G50-5-1G	-2C1B	90-1WD-1G	-3F2G	G125-3-2G
N1B	50-1-1G	-2C2B	90-1WD-2G	-3G2B	125-3NP-2G
N1G	G50-1-1G	-2D1B	90-2-1G	-3G2G	G125-3NP
O1B	50-3BL-1G	-2D2B	90-2-2G		-2G
P1B	50-4-1G	-2D2BC	90-2CB-2G	-3N2B	125-1-2G
P1G	G50-4-1G	-2D2G	G90-2-2G	-3N2BC	125-1CB-2G
A2B	70-7WL-2G	-2D2GC	G90-1CB	-3N2G	G125-1-2G
A2G	G70-7WL		-2G	-3O2B	125-3BL-2G
	-2G	-2E1B	90-2WD-1G	-3R2B	125-7-2G
B2B	70-8WL-2G	-2E2B	90-2WD-2G	-3R2G	G125-7-2G
B2G	G70-8WL	-2F1B	90-3-1G	-3S2B	125-6-2G
	-2G	-2F2B	90-3-2G	-3S2G	G125-6-2G
C1B	70-1WD-1G	-2F2BC	90-3CD-2G	-4D2B	175-2-2G
C2B	70-1WD-2G	-2F2G	G90-3-2G	-4D2G	G175-2-2G
D1B	70-2-1G	-2F2GC	G90-3CD	-4F2B	175-3-2G
D2B	70-2-2G		-2G	-4F2G	G175-3-2G
D2BC	70-2CB-2G	-2G2B	90-3NP-2G	-4G2B	175-3NP
D2G	G70-2-2G	-2G2G	G90-3NP		-2G
D2GC	G70-2CB		-2G	-4G2G	G175-3NP
	-2G	-2K1B	90-5-1G		-2G
E1B	70-2WD-1G	-2K2B	90-5-2G	-4N2B	175-1-2G
E2B	70-2WD-2G	-2K2G	G90-5-2G	-4N2G	G175-1-2G
F1B	70-3-1G	-2L2B	90-7WL-2G	-4O2B	175-3BL-2G
F2B	70-3-2G	-2L2G	G90-7WL	-4S2B	175-6-2G
F2BC	70-3CB-2G		-2G	-4S2G	G175-6-2G
F2G	G70-3-2G	-2M2B	90-8WL-2G	-5D2B	225-2-2G
F2GC	G70-3CB	-2M2G	G90-8WL	-5D2G	G225-2-2G
	-2G		-2G	-5F2B	225-3-2G
G2B	70-3NP-2G	-2N1B	90-1-1G	-5F2G	G225-3-2G
G2G	G70-3NP	-2N1G	G90-1-1G	-5G2B	225-3NP-2G
	-2G	-2N2B	90-1-2G	-5G2G	G225-3NP
K1B	70-5-1G	-2N2BC	90-1CB-2G		-2G
K2B	70-5-2G	-2N2G	G90-1-2G	-5N2B	225-1-2G
K2G	G70-5-2G	-2N2GC	G90-1CB	-5N2G	G225-1-2G
N1B	70-1-1G		-2G	-5S2B	225-6-2G
N1G	G70-1-1G	-2O2B	90-3BL-2G	-5S2G	G225-6-2G

SELF-LOCKING PUSH-TO-TURN KNOBS

PUSH TO TURN

-2-

PUSH TO TURN

-3-

Designed for maintaining control settings under shock and vibration. Knobs have zero backlash allowing for infinite resolution. Sturdy polycarbonate plastic construction conforms with MS91528C and MIL-K-3926B. Custom variations available, complete information on equest. **Model Number Description: PT**, push-to-turn; **G**, gray mit for black) color; **70**, ¾″ dia.; **2**, skirted round or **3**, dial irted round; **1**, ⅛″ shaft hole, **2**, ¼″ shaft hole; **G**, matte finish mit for mirror finish).

Black Finish				Gray Finish			
aytheon No. PT-	Net Each, Lots of			Raytheon No. PT-	Net Each, Lots of		
	1-24	25-49	50-249		1-24	25-49	50-249
70-2-1	$13.07	$11.77	$10.48	G70-2-1	$13.18	$11.88	$10.53
70-2-1G	12.96	11.66	10.37	G70-2-1G	13.07	11.77	10.48
70-2-2	13.18	11.88	10.53	G70-2-2	13.28	11.99	10.64
70-2-2G	13.07	11.77	10.48	G70-2-2G	13.18	11.88	10.53
70-3-1	13.23	11.88	10.58	G70-3-2	13.39	12.04	10.75
70-3-1G	13.12	11.83	10.48	G70-3-2G	13.34	11.99	10.69
70-3-2	13.34	11.99	10.69				
70-3-2G	13.23	11.88	10.58				

KNOB LOCKS

se with standard control knobs for a dependable eans of holding precise or critical control settings under shock or vibration conditions. Very ttle larger than the knob itself. An eighth-turn cks the knob firmly. Mounts directly on readed bushing of the control.

aytheon Cat. No.	For Knob Series	Finish	O.D.	Thread	List Each*
L701	70	Mirror	1″	⅜″-32	$0.95
L701G	70	Matte	1″	⅜″-32	1.02
L702†	70	Mirror	1″	¼″-32	1.04
L702G†	70	Matte	1″	¼″-32	1.12
L703*	70	Mirror	1″	⅜″-32	1.87
L703G*	70	Matte	1″	⅜″-32	1.94
L901	90	Mirror	1 5/16″	⅜″-32	1.09
L901G	90	Matte	1 5/16″	⅜″-32	1.15
L902*	90	Mirror	1 5/16″	⅜″-32	1.98
L902G*	90	Matte	1 5/16″	⅜″-32	2.00
L1251	125	Mirror	1⅝″	⅜″-32	1.12
L1251G	125	Matte	1⅝″	⅜″-32	1.19

Splash proof. †⅛″ shaft.

★OEM DISCOUNT SCHEDULE FOR KNOBS & ACCESSORIES

iscounts are applied on units per item—NOT total units per order. **uantity:** 1-99, none; 100-199, –15%; 200-499, –20%; 500-999, –30%.

400 AND PANELRAMA SERIES CONTROL KNOBS

-R-
(Panelrama)

-D-

Modern styling for commercial or industrial use. Series 400 available in three colors. Durable construction of high impact acrylonitrite-butadiene-styrene (ABS) with lusterless finish. Metal bushing with two set screws. **Size:** Prefix indicates size: **407**, .725″ dia.; **409**, .875″ dia.; **412**, 1.255″ dia.; **PS6**, .625″ dia.; **PS7**, .725″ dia.; **PS12**, 1.255″ dia. **Style:** Following letter denotes style: **R**, round; **D**, round, dial skirt; **P**, bar pointer; **PD**, bar pointer, dial skirt. **Shaft Size:** Following number indicates shaft size: **1**, ⅛″ shaft; **2**, ¼″ shaft. **Color:** Last number indicates color: **1**, black; **3**, beige; **7**, blue-gray.

400 SERIES CONTROL KNOBS

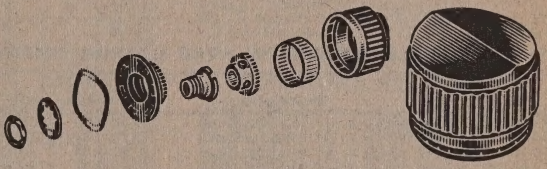
Raytheon Cat. No.	List Each*	Raytheon Cat. No.	List Each*	Raytheon Cat. No.	List Each*
407D1K1	$0.56	407PD2K1	$0.57	412D2K1	$0.57
407D2K1	.52	409D2K1	.55	412D2K3	.57
407D2K3	.52	409D2K3	.55	412P2K1	.58
407D2K7	.52	409R2K1	.48	412PD2K1	.69
407R1K1	.45	409R2K3	.48	412R2K1	.46
407R2K1	.42	409P2K1	.52	412R2K3	.46
407R2K3	.42	409PD2K1	.63		
407R2K7	.42	409PD2K3	.63		

PANELRAMA SERIES CONTROL KNOBS

Black body with aluminum disk.

PS6D2K1R	$0.55	PS7D2K1R	$0.54	PS12D2K1R	$0.63
PS7R2K1R	.44	PS7PD2K1R	.59		

MICROVERNIER® CONTROLS



Unique control utilizes principle of harmonic drive to provide high-resolution tuning or precise zero setting. Offers high 40:1 tuning ratio, and instantaneous 1:1 ratio for fast sluing by pushing in on control. Entire mechanism contained in front panel knob. Eliminates need for expensive gear assemblies. Tested to 500,000 cycles minimum rotational life. Temperature range, –55° C to +85° C. Available in three sizes and manufactured to meet requirements of MIL-K-3926 and MS91528. Glossy or matte finish. **Size:** Prefix **MV** indicates Microvernier; **125**, 1¼″ dia.; **175**, 1¾″ dia.; **225**, 2¼″ dia. **Dial Skirt:** Following number indicates: **2**, without dial skirt; **3**, with dial skirt. (Dial skirt not available with MV125 controls.) **Type:** Following letter indicates: **A**, through-the-panel mounting type; **B**, potentiometer mounting type. **Color:** Standard color is black lustre finish, last letter **G**, indicates black matte finish.

Glossy Finish				Matte Finish			
Raytheon Cat. No.	Net Each, Lots of			Raytheon Cat. No.	Net Each, Lots of		
	1-49	50-99	100-199		1-49	50-99	100-199
MV125-2A-2	$9.80	$8.35	$7.85	MV125-2A-2G	$9.70	$8.25	$7.75
MV125-2B-2	9.80	8.35	7.85	MV125-2B-2G	9.70	8.25	7.75
MV175-2A-2	10.10	8.60	8.10	MV175-2A-2G	10.00	8.50	8.00
MV175-2B-2	10.10	8.60	8.10	MV175-2B-2G	10.00	8.50	8.00
MV175-3A-2	10.65	9.00	8.50	MV175-3A-2G	10.55	8.95	8.45
MV175-3B-2	10.65	9.00	8.50	MV175-3B-2G	10.55	8.95	8.45
MV225-2A-2	10.55	8.95	8.45	MV225-2A-2G	10.45	8.90	8.35
MV225-2B-2	10.55	8.95	8.45	MV225-2B-2G	10.45	8.90	8.35
MV225-3A-2	11.35	9.65	9.10	MV225-3A-2G	11.25	9.55	9.00
MV225-3B-2	11.35	9.65	9.10	MV225-3B-2G	11.25	9.55	9.00

KNOB REDUCING BUSHINGS

Converts knobs to fit smaller shafts by reducing knob hole size.

Raytheon Cat. No.	Description	Net Each
RB100	Converts ¼″ shaft to ⅛″	$0.13
RB200	Converts ¼″ shaft to 3/16″	.13

SHAFT LOCKS

Raytheon Cat. No.	Color	For Shaft	Net Each, Lots of			
			1-99	100-199	200-499	500-999
SL-100B	Black	¼″	$0.36	$0.30	$0.28	$0.26
SL-101R	Red	¼″	.38	.32	.30	.28
SL-110B*	Black	¼″	.24	.21	.19	.17
SL-105B	Black	⅛″	.27	.24	.22	.19

*Short style for use under knobs.

Electronic Hardware

STEEL NICKEL-PLATED

ROUND HEAD MACHINE SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
7130-C	$0.69	2-56 x 1/4" machine screw	7130-M	$ 5.50
7131-C	.75	2-56 x 1/2" machine screw	7131-M	6.00
7132-C	.96	2-56 x 3/4" machine screw	7132-M	7.68
6005-C	.75	4-36 x 1/4" machine screw	6005-M	6.00
6006-C	.70	4-36 x 1/2" machine screw	6006-M	5.60
6005-AC	.79	4-40 x 1/4" machine screw	6005-AM	6.32
6005-BC	.70	4-40 x 1/2" machine screw	6005-BM	5.60
6005-CC	.83	4-40 x 3/4" machine screw	6005-CM	6.57
6008-C	.68	6-32 x 1/4" machine screw	6008-M	5.46
6009-C	.79	6-32 x 1/2" machine screw	6009-M	6.30
6010-C	.92	6-32 x 3/4" machine screw	6010-M	7.41
6011-C	1.07	6-32 x 1" machine screw	6011-M	8.54
7141-C	1.30	6-32 x 1 1/4" machine screw	7141-M	10.35
7148-C	1.93	6-32 x 2" machine screw	7148-M	15.39
6013-C	.91	8-32 x 1/4" machine screw	6013-M	7.28
6014-C	1.00	8-32 x 3/8" machine screw	6014-M	7.98
6015-C	1.07	8-32 x 1/2" machine screw	6015-M	8.54
6016-C	1.19	8-32 x 3/4" machine screw	6016-M	9.51
6017-C	1.37	8-32 x 1" machine screw	6017-M	10.92
7142-C	1.58	8-32 x 1 1/4" machine screw	7142-M	12.60
6020-C	1.21	10-32 x 1/2" machine screw	6020-M	9.66
6021-C	1.46	10-32 x 3/4" machine screw	6021-M	11.61
6022-C	1.60	10-32 x 1" machine screw	6022-M	12.74
7143-C	2.12	10-32 x 1 1/2" machine screw	7143-M	16.94

STEEL BINDING HEAD MACHINE SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
7151-C	$0.71	6-32 x 3/16" binding head	7151-M	$5.73
7152-C	.68	6-32 x 1/4" binding head	7152-M	5.46
7153-C	.74	6-32 x 3/8" binding head	7153-M	5.88
7158-C	1.00	8-32 x 5/16" binding head	7158-M	7.98

NICKEL-PLATED BRASS BINDING HEAD MACHINE SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
7170-1C	$1.57	4-40 x 1/4" binding head	7170-1M	$12.56
7171-1C	1.45	4-40 x 1/2" binding head	7171-1M	11.61
7152-1C	1.70	6-32 x 1/4" binding head	7152-1M	13.60
7153-1C	1.55	6-32 x 3/8" binding head	7153-1M	12.38
7118-1C	1.74	6-32 x 1/2" binding head	7118-1M	13.92
7173-1C	2.03	6-32 x 3/4" binding head	7173-1M	16.23
7119-1C	2.30	8-32 x 3/8" binding head	7119-1M	18.47
7120-1C	2.47	8-32 x 1/2" binding head	7120-1M	19.73
7175-1C	3.03	8-32 x 3/4" binding head	7175-1M	24.21
7176-1C	3.39	10-32 x 1/2" binding head	7176-1M	27.15
7177-1C	4.59	10-32 x 3/4" binding head	7177-1M	36.67

OVAL HEAD RACK AND CABINET SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
6540-C	$0.79	6-32 x 1/2" rack screw	6540-M	$ 6.30
5693-C	1.56	10-32 x 5/8" rack screw	5693-M	12.51
6543-C	1.42	10-32 x 3/4" rack screw	6543-M	11.34

MOUNTING SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
6081-C	$3.62	6-32 x 9/32" with No. 6 hole	6081-M	$28.97
6082-C	3.95	6-32 x 13/32" with No. 6 hole	6082-M	31.62
6084-C	8.80	8-32 x 7/16" with No. 8 hole	6084-M	70.36

SELF-TAPPING SHEET METAL SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
6090-C	$1.07	No. 4 x 1/2" metal screw	6090-M	$ 8.54
6091-C	1.12	No. 6 x 1/4" metal screw	6091-M	8.96
6092-C	1.14	No. 6 x 3/8" metal screw	6092-M	9.09
6093-C	1.21	No. 6 x 1/2" metal screw	6093-M	9.66
6094-C	1.30	No. 6 x 3/4" metal screw	6094-M	10.35
8102-C	1.30	No. 8 x 1/4" metal screw	8102-M	10.35
6095-C	1.34	No. 8 x 3/8" metal screw	6095-M	10.77
6096-C	1.39	No. 8 x 1/2" metal screw	6096-M	11.06
6097-C	1.77	No. 8 x 1" metal screw	6097-M	14.13
6099-C	1.65	No. 10 x 1/2" metal screw	6099-M	13.16
6100-C	1.80	No. 10 x 3/4" metal screw	6100-M	14.41

MISCELLANEOUS SET AND MOUNTING SCREWS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
7202-C	$6.27	8-32 x 3/16" Allen hex set screw	7202-M	$50.1
6005-C	.75	4-36 x 1/4" cartridge screw	6005-M	6.0
6005-AC	.79	4-40 x 1/4" cartridge screw	6005-AM	6.3

MISCELLANEOUS NICKEL-PLATED NUTS

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
7225-C	$0.87	2-56 x 3/16" wide hex nut	7225-M	$ 6.9
7226-C	.87	3-48 x 3/16" wide hex nut	7226-M	6.9
6041-C	.87	4-36 x 1/4" wide hex nut	6041-M	6.9
6041-AC	.87	4-40 x 1/4" wide hex nut	6041-AM	6.9
6042-C	.87	6-32 x 1/4" wide hex nut	6042-M	6.9
7230-C	.95	6-32 x 5/16" wide hex nut	7230-M	7.5
6043-C	.87	8-32 x 1/4" wide hex nut	6043-M	6.9
7233-C	.92	8-32 x 11/32" wide hex nut	7233-M	7.4
7235-C	1.55	1/4-20 x 7/16" wide hex nut	7235-M	12.4
6050-AC	1.87	3/8-32 vol. control mtg. nut	6050-AM	14.9
6050-BC	2.29	15/32-32 toggle switch nut	6050-BM	18.3
6050-CC	4.41	15/32-32 round ring nut	6050-CM	35.2
6052-C	1.00	No. 6 Tinnerman speed nut	6052-M	7.9
6053-C	1.00	No. 8 Tinnerman speed nut	6053-M	7.9
6031-C	3.52	6-32 acorn nut	6031-M	28.1
6032-C	3.73	8-32 acorn nut	6032-M	29.8
6033-C	4.76	10-32 acorn nut	6033-M	38.0
6655-C	2.89	6-32 knurled thumb nut	6655-M	23.0
6656-C	2.89	8-32 knurled thumb nut	6656-M	23.0
6657-C	6.33	10-32 knurled thumb nut	6657-M	50.6
6658-C	3.38	6-32 wing nut	6658-M	27.0

WASHERS FOR EVERY PURPOSE

C-PAK			M-PAK	
G-C No.	Net*	Description	G-C No.	Net*
7322-C	$0.91	No. 2 internal lock washer	7322-M	$ 7.2
7324-C	.58	No. 4 internal lock washer	7324-M	4.6
7326-C	.56	No. 6 internal lock washer	7326-M	4.4
7328-C	.61	No. 8 internal lock washer	7328-M	4.8
7330-C	.61	No. 10 internal lock washer	7330-M	4.8
7335-C	1.60	No. 3/8" internal lock washer	7335-M	12.7
7354-C	.56	No. 4 external lock washer	7354-M	4.4
7356-C	.56	No. 6 external lock washer	7356-M	4.4
7358-C	.61	No. 8 external lock washer	7358-M	4.8
6503-C	.74	No. 4 split type lock washer	6503-M	5.8
6504-C	.60	No. 6 split type lock washer	6504-M	4.7
6505-C	.97	No. 8 split type lock washer	6505-M	9.0
7385-C	2.49	5/32" ID x 5/16" OD spring wshr.	7385-M	19.8
7386-C	2.10	3/16" ID x 3/8" OD spring wshr.	7386-M	16.7
6162-C	.63	No. 8 cup washer	6162-M	5.0
6163-C	.71	No. 10 cup washer	6163-M	5.7
6513-C	.63	No. 6 flat fiber washer	6513-M	5.0
6514-C	.63	No. 8 flat fiber washer	6514-M	5.0
6515-C	.63	No. 10 flat fiber washer	6515-M	5.0
6516-C	.68	No. 1/4" flat fiber washer	6516-M	5.4
6517-C	.99	No. 3/8" flat fiber washer	6517-M	7.8
6525-C	1.12	No. 6 extruded fiber washer	6525-M	8.9
6526-C	1.12	No. 8 extruded fiber washer	6526-M	8.9
6527-C	1.21	No. 10 extruded fiber washer	6527-M	9.6
6528-C	1.21	No. 1/4" extruded fiber washer	6528-M	9.6
6529-C	1.26	No. 3/8" extruded fiber washer	6529-M	10.0
6154-C	.58	No. 4 metal washer	6154-M	4.6
6155-C	.58	No. 6 metal washer	6155-M	4.6
6156-C	.63	No. 8 metal washer	6156-M	5.0
7306-C	.60	No. 10 metal wshr., 3/8" O.D.	7306-M	4.7
6157-C	.63	No. 10 metal wshr., 1/2" O.D.	6157-M	5.0
6158-C	.87	No. 1/4" metal washer	6158-M	6.9

BRASS EYELETS

C-PAK		Dimensions, In.			M-PAK	
G-C No.	Net*	Shank Dia.	Lgth.	Head Dia.	G-C No.	Net*
7251-C	$0.37	.087	1/8	.145	7251-M	$2.94
7252-C	.49	.087	5/32	.145	7252-M	3.92
7253-C	.61	.087	7/32	.145	7253-M	4.89

NICKEL PLATED RIVETS

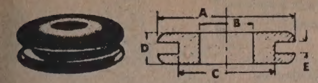
C-PAK		Dimensions, In.		M-PAK	
G-C No.	Net*	Shank Dia.	Length	G-C No.	Net*
7286-C	$0.98	.121	1/8	7286-M	$7.83
7288-C	.77	.121	3/16	7288-M	6.75

QUANTITY DISCOUNT SCHEDULE

*Net each package (100 pieces per package), in lots of 1–49 pack
ages. For 50–99 packages, deduct 20% from prices shown. *Ne
per package (1000 pieces) in lots of 1–5 packages. For 5–9 package
deduct 20% from prices shown. **Note:** When C-PAK and M-PA
quantities are assorted, quantities of 4999–9999 pieces (not pack
ages), 20% discount also applies.

H. H. Smith GROMMETS, BUMPERS AND LACING CORDS

RUBBER GROMMETS

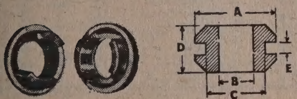


.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
1114	11⁄32	1⁄8	1⁄4	3⁄16	1⁄16	$ 2.50
1118	7⁄16	3⁄16	5⁄16	7⁄32	1⁄16	2.50
1103	9⁄16	3⁄16	15⁄32	3⁄8	1⁄8	3.30
1122	1⁄2	1⁄4	11⁄32	5⁄32	1⁄32	3.10
1102	5⁄8	9⁄32	13⁄32	3⁄8	5⁄32	3.50
1117	19⁄32	5⁄16	7⁄16	3⁄8	1⁄8	3.50
1116	3⁄4	5⁄16	1⁄2	3⁄8	1⁄8	5.00
1106	5⁄8	5⁄16	1⁄2	1⁄2	3⁄16	7.20
1119	9⁄16	1⁄4	13⁄32	1⁄4	1⁄16	2.70
1123	11⁄16	9⁄32	1⁄2	7⁄16	1⁄4	5.50
1120	5⁄8	19⁄64	7⁄16	1⁄4	1⁄16	3.10
1113	5⁄8	21⁄64	13⁄32	1⁄4	1⁄16	3.10
1107	5⁄8	3⁄8	7⁄16	5⁄16	3⁄32	5.00
1121	21⁄32	3⁄8	1⁄2	1⁄4	1⁄16	3.00
1100	13⁄16	3⁄8	1⁄2	13⁄32	9⁄64	8.00
1124	3⁄4	7⁄16	9⁄16	1⁄4	1⁄16	3.50
1111	7⁄8–1	3⁄8	11⁄16	13⁄32	9⁄64	9.00
1109	1 1⁄16	3⁄8	7⁄8	3⁄8	1⁄4	15.00
1112	1 5⁄8	49⁄64	1 3⁄32	5⁄16	1⁄16	12.00

RUBBER GROMMETS

.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
2185	5⁄16	1⁄8	3⁄16	3⁄16	1⁄16	$2.40
2172	7⁄16	3⁄16	5⁄16	3⁄16	1⁄16	2.20
2170	5⁄8	1⁄4	3⁄8	1⁄4	1⁄16	2.50
2174	5⁄8	5⁄16	7⁄16	1⁄4	1⁄16	2.40
2175	21⁄32	3⁄8	1⁄2	1⁄4	1⁄16	2.50
2177	3⁄4	7⁄16	9⁄16	1⁄4	1⁄16	2.50
2186	1 1⁄16	1⁄2	3⁄4	5⁄16	1⁄16	5.30
2188	1 1⁄16	9⁄16	1 3⁄16	5⁄16	1⁄16	5.30
2187	1 1⁄8	5⁄8	7⁄8	5⁄16	1⁄16	5.40
2189	1	3⁄4	7⁄8	5⁄32	1⁄32	5.20

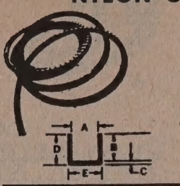
SNAP-LOCK PLASTIC GROMMETS



wo identical halves snap tight, lock in lace. Provides a rigid bearing surface, reater dielectric, extreme chemical and ear resistance. Identical halves form comlete grommet. Black color.

.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
2178	7⁄16	3⁄16	5⁄16	1⁄4	1⁄16	$3.30
2179	1⁄2	1⁄4	3⁄8	1⁄4	1⁄16	3.50
2180	5⁄8	3⁄8	1⁄2	1⁄4	1⁄16	3.65

EXTRUDED "CATERPILLAR" NYLON GROMMETS



Shape your own grommets to fit any size or shape opening. Made of non-conductive black nylon, Type 6/6, fungus resistant to conform to MIL-M-20693a, Type 1. For panel thickness from .052″ to .125″. 25-foot rolls.

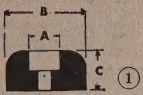
H.H.S. No.	Dimensions, Inches A	B	C	D	E	Net/ Roll
2692	.052	.150	.040	.190	.125	$10.00
2693	.085	.155	.045	.200	.162	11.50
2694	.125	.175	.045	.220	.206	12.00

VINYL GROMMETS

Exceptional aging qualities, high dielectric properties. Oil resistant. Durameter hardness, 45 to 85.

H.H.S. No.	Dimensions, Inches O.D. A	I.D. B	P.H. C	W. D	P.T. E	Net per C
2145	11⁄32	1⁄8	1⁄4	3⁄16	1⁄16	$1.10
2146	7⁄16	3⁄16	5⁄16	7⁄32	1⁄16	1.35
2147	9⁄16	1⁄4	3⁄8	1⁄4	1⁄16	1.65
2148	5⁄8	3⁄8	1⁄2	1⁄4	1⁄16	1.75
2149	13⁄16	1⁄2	5⁄8	9⁄32	1⁄16	2.65

RECESS RUBBER BUMPERS



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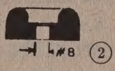
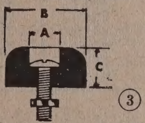


②

H.H.S. No.	Fig.	Dimensions, In. A	B	C	Net per C
2192	1	7⁄32	17⁄32	1⁄4	$1.70
2193	1	1⁄4	5⁄8	5⁄16	2.20
2194	1	9⁄32	3⁄4	3⁄8	3.30
2184	1	9⁄32	5⁄8	9⁄32	3.30
2135*	2	3⁄8	31⁄32	3⁄8	5.00

*With molded-in metal washer.

BUMPERS WITH SCREW



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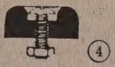


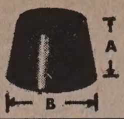
④

Supplied complete with ½″ mounting screw and hex nut for panels up to ¼″ thick. Specify longer screw for thicker panels.

H.H.S. No.	Fig.	Dim., Inches A	B	C	Screw	Net per C
2196	3	7⁄32	17⁄32	1⁄4	6-32	$ 6.70
2197	3	1⁄4	5⁄8	5⁄16	6-32	7.20
2198	3	9⁄32	3⁄4	3⁄8	6-32	8.30
2199	3	1⁄4	5⁄8	9⁄32	6-32	8.30
2195*	4	3⁄8	31⁄32	3⁄8	8-32	10.00

*With molded-in metal washer.

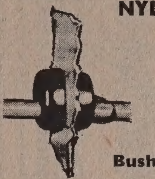
VINYL CABINET BUMPERS



All molded cabinet bumpers with brass insert to absorb screw load. Molded of ethylene vinyl. Black.

H.H.S. No.	For Screw	Dimensions A	B	Net per C
2181	No. 4	3⁄8″	9⁄16″	$5.50
2182	No. 6	7⁄16″	3⁄4″	6.50
2183	No. 8	7⁄8″	15⁄16″	7.50

NYLON STRAIN RELIEFS



Bushing

Pliers

STRAIGHT THRU

One-piece construction, absorbs pull and twist. Wire full anchored and insulated at chassis entrance. Available as straight thru or right angle. Standard package of 100.

H.H.S. No.	Wire Size	Dim., Inches* A	B	C	Net per C
937	1⁄8″–3⁄16″	.375	.410	.060	$4.00
938	.12″ x .22″	.437	.410	.062	4.00
939	.250″–.290″	.500	.438	.100	4.50
822	.12″–.30″	.500	.406	.062	6.00
823	.365″–.360″	.625	.580	.062	9.50
RIGHT ANGLE					
824	.12″–.30″	.500	.687	.100	$ 8.50
825	.250″–.290″	.500	.687	.100	8.50
826	.360″–.430″	.750	1.085	.125	19.00

*A, chassis hole; B, length; C, maximum chassis thickness.

H. H. Smith No. 940 Setting Pliers—For above. Net Each **$25.00**

BLIND HOLE MOUNTING ACCESSORIES

Grommet

Strap

Molded of polyethylene. Just snaps into hole; requires no mounting hardware or special tools. Temperature rating, 100° to 205° F. Gray color.

GROMMETS

Maximum panel thickness, .095″.

H.H.S. No.	Mtg. Hole	Cable Dia.	Net per C
8974	1⁄4″	1⁄8″	$2.00
8975	3⁄8″	1⁄4″	2.25
8976	1⁄2″	3⁄8″	2.50
8977	5⁄8″	1⁄2″	3.50
8978	3⁄4″	5⁄8″	4.00

CABLE STRAPS

Width, 5⁄16″. For panel thickness, 1⁄16″.

H.H.S. No.	Mtg. Hole	Cable Dia.	Net per C
8971	1⁄4″	1⁄4″	$2.00
8972	1⁄4″	7⁄16″	2.50
8973	1⁄4″	5⁄8″	3.00

NYLON LACING CORD

Meets MIL-T-713D, Type P, classes 3, 2 and 1. Supplied in 1-lb. tubes, in natural or black color.

H.H.S. No.	Color	Class	Test	Yardage	Net Each
734	Natural	1	70 lb.	600	$ 9.90
735	Natural	2	48 lb.	800	10.30
736	Natural	3	32 lb.	1140	10.60
791	Black	1	70 lb.	600	11.90
792	Black	2	48 lb.	800	12.20
793	Black	3	32 lb.	1140	12.50

NYLON LACING TAPE

raided; MGD finish. Size #18 meets MIL-T-43435, Size 3, Finish . In 500-yard spools; black or natural color.

H.H.S. No.	Color	Size	Width	Thickness	Test	Net Each
766	Natural	18	.090″	.0125″	50 lb.	$11.60
767	Natural	21	.0625″	.009″	25 lb.	8.80
769	Black	18	.090″	.0125″	50 lb.	12.10
770	Black	21	.0625″	.009″	25 lb.	9.45

. H. Smith No. 743 Commercial Lacing Tape—Same applications as above, but at much lower cost. 1-lb. tube (620 yards); atural color. Width, 1⁄8″. Net Each **$6.30**

LINEN LACING CORD

Mildew proofed. Meets MIL-T-713-A, Type N.

H.H.S. No.	Color	Tube Size	Ply	Class	Yardage	Net Each
727	Natural	1 lb.	4	. . . .	850	$6.60
730	Natural	1 lb.	6	3	600	6.60
739	Natural	1 lb.	8	2	470	6.60
733	Natural	1 lb.	9	. . . .	400	6.60
742	Natural	1 lb.	12	1	300	6.60
794	Black	1 lb.	4	. . . .	850	7.30
795	Black	1 lb.	6	3	600	7.30
796	Black	1 lb.	8	2	470	7.30
797	Black	1 lb.	9	. . . .	400	7.30
798	Black	1 lb.	12	1	300	7.30

DACRON* LACING CORD

Conforms to physical requirements of MIL-T-713A. Offers greater tensile strength with minimal stretch than nylon. Fungus, acid and abrasion resistant. Natural color. Supplied in 1-lb. tubes.

*Reg. DuPont trademark.

H.H.S. No.	Class	Test	Yardage	Net Each
722	1	78 lb.	750	$11.60
723	2	57 lb.	1000	12.10
724	3	37 lb.	1500	12.70

CABLE CLIPS (FIG. A)

Tough, lightweight, durable cable holders withstand hard use, moisture, corrosion, shock and vibration for a long life. **Ethyl cellulose** types for temperatures −60° to +175° F; .060" thick, ½" w. with .204" mtg. hole. **Molded nylon** clamps withstand temperatures from −60° to +250° F; .060" thick, ½" w. with .204" dia. mtg. hole for units 3/16" to 1¼" dia.; all others, .040" thick, ⅜" w. with .167" dia mtg. hole.

I.D., Inches (Cable Size)	Cellulose H.H.S. No.	Cellulose Mtg. Center*	Cellulose Net Per C	Nylon H.H.S. No.	Nylon Mtg. Center*	Nylon Net Per C
⅛	831	.360"	$2.34	771	.310"	$ 3.60
3/16	832	.423"	2.40	772	.373"	3.90
¼	833	.457"	2.58	773	.407"	4.20
5/16	834	.498"	2.85	774	.448"	4.65
⅜	835	.529"	3.00	775	.479"	4.80
7/16	836	.560"	3.30	776	.510"	5.10
½	837	.592"	3.60	777	.542"	5.40
9/16	838	.623"	4.20	778	.623"	6.60
⅝	839	.654"	4.50	779	.654"	7.20
11/16	840	.752"	4.80	780	.752"	7.50
¾	841	.783"	5.10	781	.783"	8.10
⅞	842	.845"	5.40	782	.845"	8.70
1	843	.908"	5.70	783	.908"	10.20
1⅛	844	.970"	6.00	784	1.002"	12.00
1¼	845	1.062"	6.30	785	1.062"	13.80

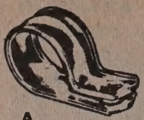
*From center of cable to center of mounting hole.

BRASS AND INSULATED EXTENDERS (FIG. B)

Extra long extenders in either brass or insulated material. Suitable for use on amplifiers, television receivers, radio receivers or wherever a ¼" shaft extender is required.

H. H. Smith No.	Type	Material	Shaft Length	Overall Length	Net Per C
150	¼"-¼"	Brass*	1¼"	1¾"	$44.00
130	¼"-¼"	Insulated	1¼"	1¾"	44.00
132	⅜"-¼"	Brass*	1¼"	1¾"	44.00
134	⅜"-¼"	Insulated	1¼"	1¾"	44.00

*Nickel-plated.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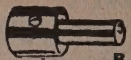
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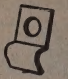
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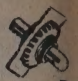
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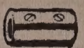
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CABLE CLAMPS (FIG. C)

Cadmium plated steel with #8 mtg. hole.

H.H.S. No.	Length	Width	Cable O.D.	Net Per 100
1471	⅝"	⅜"	⅛"	$0.90
1470	¾"	⅜"	¼"	.81
1472	1"	⅜"	½"	1.00

INSULATED GROMMET BUSHINGS (FIG. D)

Black phenolic in matte finish.

H. H.S. No.	Bushing Size, Inches I.D.	Bushing Size, Inches O.D.*	Bushing Size, Inches Threaded	Bushing Size, Inches Length	Collar, In. O.D. x W.	Net Each
931	⅛	⅜	¼-32	.3750	½ x ⅛	40c
932	3/16	7/16	5/16-32	.4250	⅝ x ⅛	40c
933	¼	½	⅜-27	.4375	11/16 x ⅛	40c
934	5/16	9/16	15/32-32	.4500	⅞ x ⅛	40c
935	⅜	¾	⅝-27	.4500	1 x ⅛	40c

*Head diameter.

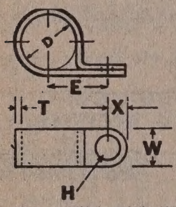
BRASS AND INSULATED COUPLERS (FIG. E)

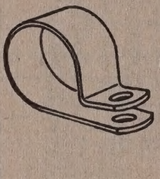
Available in both brass and insulated material. Overall length ¾". Set screws are provided in coupler for tightening to shaft.

Type	Brass Couplers H.H.S. No.	Brass Couplers Net Each	Insulated Couplers H.H.S. No.	Insulated Couplers Net Each
¼"-¼"	120*	33c	140*	33c
⅜"-¼"	131	33c	141	33c
⅜"-⅜"	133	33c	142	33c

*7/16" O.D.; all others, ½" O.D.

PLASTIC CABLE CLAMPS





Dimension "X" is 7/32"; "H" is 13/64" for all.

NYLON

H.H.S. No.	Hole (D)	Dimensions E	Dimensions T	Dimensions W	Net per C
8940	⅛"	.360"	.060"	½"	$2.30
8941	3/16"	.423"	.060"	½"	2.40
8942	¼"	.457"	.060"	½"	2.50
8943	5/16"	.498"	.060"	½"	2.60
8944	⅜"	.529"	.060"	½"	2.70
8945	7/16"	.560"	.060"	½"	2.80
8946	½"	.592"	.060"	½"	2.90
8947	9/16"	.623"	.060"	½"	3.00
8948	⅝"	.654"	.060"	½"	3.20
8949	11/16"	.752"	.060"	½"	3.30
8950	¾"	.783"	.060"	½"	3.50
8951	⅞"	.845"	.060"	½"	3.70
8952	1"	.908"	.060"	½"	3.90
8955	⅛"	.325"	.050"	⅜"	1.90
8956	3/16"	.378"	.050"	⅜"	2.00
8957	¼"	.409"	.050"	⅜"	2.10
8958	5/16"	.441"	.050"	⅜"	2.20
8959	⅜"	.471"	.050"	⅜"	2.30
8960	7/16"	.519"	.050"	⅜"	2.40
8961	½"	.550"	.050"	⅜"	2.50

ALL-MOLDED POLYPROPYLENE

H.H.S. No.	Hole (D)	Dimensions E	Dimensions T	Dimensions W	Net per C
8910	⅛"	.460"	.060"	½"	$1.60
8911	3/16"	.423"	.060"	½"	1.80
8912	¼"	.457"	.060"	½"	1.90
8913	5/16"	.498"	.060"	½"	2.00
8914	⅜"	.529"	.060"	½"	2.10
8915	7/16"	.560"	.060"	½"	2.20
8916	½"	.592"	.060"	½"	2.30
8917	9/16"	.623"	.060"	½"	2.40
8918	⅝"	.654"	.060"	½"	2.50
8919	11/16"	.752"	.060"	½"	2.60
8920	¾"	.783"	.060"	½"	2.70
8921	⅞"	.845"	.060"	½"	2.90
8922	1"	.908"	.060"	½"	3.00

CELLULOSE

H.H.S. No.	Hole (D)	Dimensions E	Dimensions T	Dimensions W	Net per C
8925	⅛"	.360"	.060"	½"	$2.10
8926	3/16"	.423"	.060"	½"	2.20
8927	¼"	.457"	.060"	½"	2.30
8928	5/16"	.498"	.060"	½"	2.40
8929	⅜"	.529"	.060"	½"	2.50
8930	7/16"	.560"	.060"	½"	2.60
8931	½"	.592"	.060"	½"	2.70
8932	9/16"	.623"	.060"	½"	2.90
8933	⅝"	.654"	.060"	½"	3.00
8934	11/16"	.752"	.060"	½"	3.30
8935	¾"	.783"	.060"	½"	3.50
8936	⅞"	.845"	.060"	½"	3.70
8937	1"	.908"	.060"	½"	3.90

HEAT SINKS FOR SEMICONDUCTOR CIRCUITRY

THERMOVANES

Manufactured of pre-painted aluminum .060" thick. Designed for thru-board mounting, except No. 6281 provided with mounting lugs.

H.H.S. No.	Case Style	Thermal* Resis., °C/W	Overall Size, In.	Wt., Gms.	Std. Pkg.	Net per C
6275	TO-3	9.5	1.0 x 1.1 x 1.5	9.8	100	$18.00
6276	TO-66, MD-17	9.5	1.0 x 1.1 x 1.5	9.8	100	18.00
6277	TO-3	5.6	1.0 x 1.16 x 3.12	23.4	50	34.00
6278	IC, -V21-675, Case 675	9.5	1.0 x 1.0 x 1.31	9.8	100	18.00
6279	TO-66, MD-17	5.6	1.0 x 1.16 x 3.12	23.4	50	34.00
6280	TO-36, Stud mtg. type ¼" max.	10.0	1.0 x 1.0 x 1.50	10.8	100	18.00
6281	Flat packs, plastic or tabs	15.1	2.0 x 1.38	7.0	50	37.00

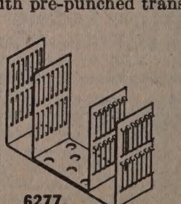
THERMOFLAGS

Manufactured of silver bearing copper, except No. 6282 pre-painted aluminum .018" thick. Designed for self support, except No. 6283 provided with mounting lug.

6282	TO-5, 0.325" case dia.	46	1.25 x .325 dia.	1.0	100	$10.50
6283	152, Tab mtd. flat packs	40–43	1.99 x .70	1.6	100	12.00
6284	TO-92, TO-98, "D" shape styles	72	.750 x .500	1.0	100	9.00

*Measured in free air; in case of thermovanes, lower when chassis mounted.

Designed with pre-punched transistor hole patterns of pre-painted aluminum with louver design for more heat transfer, and of silver bearing copper, also louvered for constant retention under severe shock and vibration environments. Ideal for PC boards and metal surfaces. All sinks furnished with pre-punched transistor hole patterns.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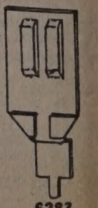
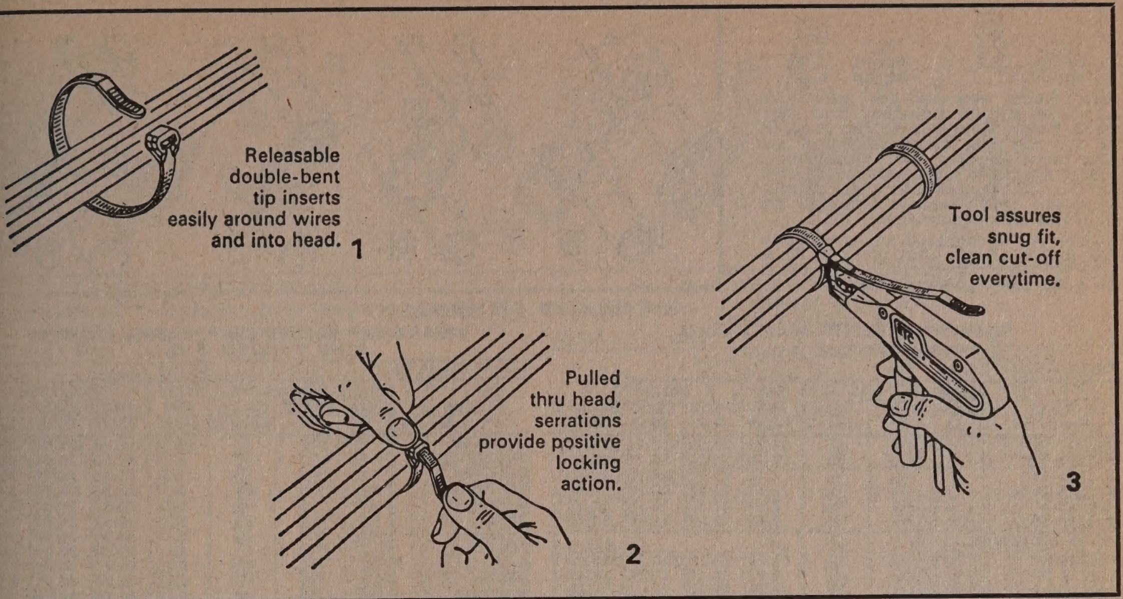

6283

ETC® Self-Locking Nylon Cable Ties


Releasable double-bent tip inserts easily around wires and into head.
1
Pulled thru head, serrations provide positive locking action.
2
Tool assures snug fit, clean cut-off everytime.
3

SELF-LOCKING NYLON CABLE TIES

STANDARD SELF-LOCKING TYPE

Compact, one-piece designed nylon cable ties come with self-ocking head. Self-locking head makes easy application by tool or y hand. Self-locking head assures tight connection. Rugged nylon vith no metal parts, ties are designed to exceed MIL-S-23190C. nstallation tool cuts off excess ties automatically, for low-profile configuration with no protruding edges. Double-bend tip locates around wires. Guides operator's hand for easy 90° insertion, even in confined areas. Second bend prevents snagging. Tip can be inserted in head and later released. Makes for easier positioning of ties on bundle. Color: Translucent white.

ETC Type	Military Numbers	Width inches	Bundle Dia., In.	Length, Inches	Minimum Loop Tensile Strength	Net per 100 Bag Pack 100-400	Net per 100 Bag Pack 500-900	Net per 1000 Bulk Pack 1000-9900	Net per 1000 Bulk Pack 10000-24900	Net per 1000 Bulk Pack 25000-49900	Net per 1000 Bulk Pack 50000-99900
N4D Miniature	MS-3367-4 MS-17821-4 MS-18034-4	.100	0–15⁄16	41⁄16	18 lbs.	$ 2.55	$ 2.05	$13.60	$12.85	$12.15	$11.55
N5C Intermediate	MS-3367-5 MS-18034-5	.145	0–1¼	5⅜	30 lbs.	3.50	2.80	18.55	17.50	16.55	15.75
N7B Standard	MS-3367-1 MS-17821-1 MS-18034-1	.187	0–1¾	7	50 lbs.	3.95	3.15	21.05	19.85	18.75	17.85
N11C Intermediate	MS-18034-7	.145	0–3	1015⁄16	30 lbs.	7.25	5.75	43.35	40.80	38.60	36.75
N13A* Large	MS-3367-3 MS-17821-3 MS-18034-3	.300	0–3½	13	120 lbs.	13.90	11.05	74.30	69.95	66.15	63.00
N14B Standard	MS-3367-2 MS-17821-2 MS-18034-2	.187	0–4	141⁄16	50 lbs.	9.25	7.35	49.55	46.65	44.10	42.00

*Bag pack: 50; bulk pack: 500.

SELF-LOCKING MOUNTING CLAMPS TYPE

Self-locking nylon cable ties with mounting clamps. Includes wide oundle-gripping serrations that hug wires tightly without piercing vire insulation as is the case with strings or narrower ties. All nvironment tough 100% nylon (MIL-M-20693) is resistant to temperature extremes, diluted acids, solvents, grease, alkalies and fungus growth. Comes with single unit mounting head. Mounting clamp is the integral part of tie head for quick attachment to panel or chassis with screw, rivet or bolt. Color: Translucent white.

ETC Type	Screw Type	Width, Inches	Bundle Dia., In.	Length, Inches	Minimum Loop Tensile Strength	Net per 100 Bag Pack 100-400	Net per 100 Bag Pack 500-900	Net per 1000 Bulk Pack 1000-9900	Net per 1000 Bulk Pack 10000-24900	Net per 1000 Bulk Pack 25000-49900	Net per 1000 Bulk Pack 50000-99900
N4MD Miniature	No. 4.	.100	0–15⁄16	4⅜	18 lbs.	$ 4.20	$ 3.35	$ 22.40	$ 21.10	$19.95	$19.00
N5MC Intermediate	No. 8	.145	0–1¼	5¾	30 lbs.	5.20	4.15	27.70	26.10	24.70	23.50
N7MB Standard	No. 10	.187	0–1¾	77⁄16	50 lbs.	5.55	4.45	35.40	33.30	31.50	30.00
N11MC Intermediate	No. 8	.145	0–3	115⁄16	30 lbs.	11.95	9.20	61.95	58.30	55.15	52.50
N13MA* Large	¼″	.300	0–3½	13⅝	120 lbs.	19.25	15.25	111.50	104.90	99.25	94.50
N14MB Standard	No. 10	.187	0–4	1417⁄32	50 lbs.	14.80	11.80	79.25	74.60	70.60	67.20

*Bag Pack: 50; Bulk Pack: 500.

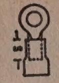
TENSION-CONTROL APPLICATION TOOL

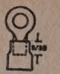
Cuts flush. Leaves no projections. Retains scrap tail until trigger is released. Easy-to-read tension gauge immediately identifies proper setting. Rugged, die cast aluminum provides long service ife. Tension adjustment is easy to use. Holds at each setting with detent locking action. Can be locked for quality control.

ETC Model CT-100—For Miniature, Intermediate and Standard Ties. Net Each.................................... **$30.00**

ETC Model CT-200—Standard and Large Ties. Net Ea.. **45.00**

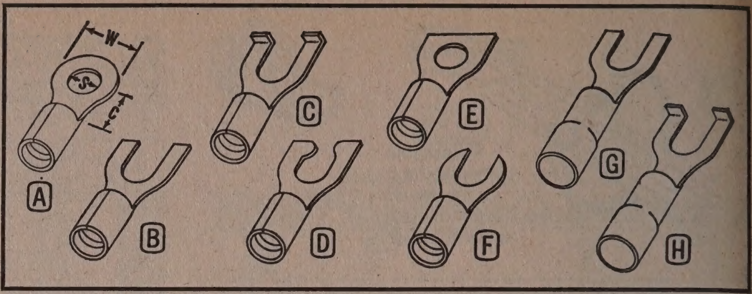
ETC® Solderless Terminals


¼″ barrel length


5/32″ barrel length

ETC copper terminals and splices are electroplated with tin, made from .032″ stock, feature V-notch serrations in barrel for best wire grip. Insulated terminals are color-coded for easy wire identification. Where applicable, terminals are covered by UL, CSA and Military specification approvals. Quick connect terminals are tin-plated brass construction.

NOTE: #22-14 terminals are available in two lengths. Parts with prefix **A** or **B** have ¼″ barrel length. Parts with prefix **AA** or **BB** have 5/32″ barrel length.



UNINSULATED TERMINALS

KRIMPTITE® BUTTED SEAM BARREL RING TONGUE (FIG. A)

#26-24 AWG wire.

ETC Part No.	Stud Size S	Dimen., In.		Net/100	Net/1000		
		Width W	Clearance C	1-999	1000-2499	2500-4999	5000-9999
M-1122-02*	2	9/64	⅛	$2.79	$21.22	$16.76	$13.40
M-1113-04*	4	13/64	7/32	2.79	21.22	16.76	13.40
M-1113-06*	6	13/64	7/32	2.79	21.22	16.76	13.40
M-1118-06*	6	¼	19/64	2.79	21.22	16.76	13.40
M-1118-08*	8	¼	19/64	2.79	21.22	16.76	13.40
M-1118-10*	10	¼	19/64	2.79	21.22	16.76	13.40

#22-18 AWG wire.

AA-120-04	4	7/32	5/32	$2.79	$21.22	$16.76	$13.40
AA-132-04	4	¼	¼	2.79	21.22	16.76	13.40
AA-120-06	6	7/32	5/32	2.79	21.22	16.76	13.40
AA-132-06	6	¼	¼	2.79	21.22	16.76	13.40
AA-132-08	8	¼	¼	2.79	21.22	16.76	13.40
AA-121-08	8	5/16	5/16	2.79	21.22	16.76	13.40
AA-121-10	10	5/16	5/16	2.79	21.22	16.76	13.40

#16-14 AWG wire.

BB-123-06	6	¼	7/32	$2.92	$22.15	$17.49	$13.99
BB-139-08	8	11/32	5/16	2.92	22.15	17.49	13.99
BB-137-10	10	5/16	9/32	2.92	22.15	17.49	13.99
BB-139-10	10	11/32	5/16	2.92	22.15	17.49	13.99
BB-125-14	¼″	15/32	13/32	3.88	29.49	23.28	18.62
BB-125-56	5/16″	15/32	13/32	3.88	29.49	23.28	18.62

#12-10 AWG wire.

C-128-10	10	⅜	5/16	$4.13	$31.39	$24.78	$19.82
C-130-14†	¼″	17/32	13/32	5.36	40.70	32.13	25.70
C-130-56†	5/16″	17/32	13/32	5.36	40.70	32.13	25.70
C-140-38*	⅜″	19/32	31/64	5.88	44.67	35.27	28.21

SPADE TONGUE (FIG. B)

#26-24 AWG wire.

M-1123-00*	0	9/64	⅛	$2.79	$21.22	$16.76	$13.40
M-1116-02*	2	3/16	7/32	2.79	21.22	16.76	13.40
M-1121-04*	4	13/64	7/32	2.79	21.22	16.76	13.40

FLANGED SPADE TONGUE (FIG. C)

#22-18 AWG wire.

AA-115-06	6	19/64	7/32	$2.79	$21.22	$16.76	$13.40
AA-115-08	8	19/64	7/32	2.79	21.22	16.76	13.40

SNAP SPADE TONGUE (FIG. D)

#22-18 AWG wire.

AA-1190-06	6	¼	¼	$2.79	$21.22	$16.76	$13.40
AA-1191-08	8	9/32	¼	2.79	21.22	16.76	13.40
AA-1192-10	10	21/64	¼	2.79	21.22	16.76	13.40

#16-14 AWG wire.

BB-1193-06	6	¼	¼	$2.92	$22.15	$17.49	$13.99
BB-1194-08	8	9/32	¼	2.92	22.15	17.49	13.99
BB-1195-10	10	21/64	¼	2.92	22.15	17.49	13.99

RECTANGULAR TONGUE (FIG. E)

#22-18 AWG wire.

AA-114-06	6	19/64	7/32	$2.79	$21.22	$16.76	$13.40
AA-114-08	8	19/64	7/32	2.79	21.22	16.76	13.40

#16-14 AWG wire.

BB-113-06	6	19/64	15/32	$2.92	$22.15	$17.49	$13.99
BB-113-08	8	19/64	15/32	2.92	22.15	17.49	13.99
BB-188-10	10	21/64	¼	2.75	20.90	16.50	13.20

SLOTTED RING TONGUE (FIG. F)

#26-24 AWG wire.

M-1120-06*	6	¼	19/64	$2.79	$21.22	$16.76	$13.40

VERSAKRIMP™ BRAZED SEAM BARREL RING TONGUE (FIG. A)

#22-18 AWG wire.

A-320-04	4	7/32	5/32	$4.34	$32.98	$26.04	$20.83
AA-320-04	4	7/32	5/32	4.34	32.98	26.04	20.83
A-332-04	4	¼	¼	4.34	32.98	26.04	20.83
AA-332-04	4	¼	¼	4.34	32.98	26.04	20.83
A-320-06	6	7/32	5/32	4.34	32.98	26.04	20.83
AA-320-06	6	7/32	5/32	4.34	32.98	26.04	20.83
A-332-06	6	¼	¼	4.34	32.98	26.04	20.83
AA-332-06	6	¼	¼	4.34	32.98	26.04	20.83
A-332-08	8	¼	¼	4.34	32.98	26.04	20 83
AA-332-08	8	¼	¼	4.34	32.98	26.04	20.83
A-321-08	8	5/16	5/16	4.34	32.98	26.04	20.83
AA-321-08	8	5/16	5/16	4.34	32.98	26.04	20.83
A-321-10	10	5/16	5/16	4.34	32.98	26.04	20.83
AA-321-10	10	5/16	5/16	4.34	32.98	26.04	20.83
A-322-14	¼″	15/32	13/32	5.89	44.76	35.34	28.27
A-322-56	5/16″	15/32	13/32	5.89	44.76	35.34	28.27

VERSAKRIMP BRAZED SEAM BARREL (CONT'D) RING TONGUE (FIG. A)

#16-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In.		Net/100	Net/1000		
		Width W	Clearance C	1-999	1000-2499	2500-4999	5000-9999
B-323-06	6	¼	7/32	$4.34	$32.98	$26.04	$20.83
BB-323-06	6	¼	7/32	4.34	32.98	26.04	20.83
B-337-08	8	5/16	9/32	4.34	32.98	26.04	20.83
BB-339-08	8	11/32	5/16	4.34	32.98	26.04	20.83
B-337-10	10	5/16	9/32	4.34	32.98	26.04	20.83
BB-337-10	10	5/16	9/32	4.34	32.98	26.04	20.83
B-339-10	10	11/32	5/16	4.34	32.98	26.04	20.83
BB-339-10	10	11/32	5/16	4.34	32.98	26.04	20.83
B-325-14	¼″	15/32	13/32	5.89	44.76	35.34	28.27
BB-325-14	¼″	15/32	13/32	5.89	44.76	35.34	28.27
B-325-56	5/16″	15/32	13/32	5.89	44.76	35.34	28.27
BB-325-56	5/16″	15/32	13/32	5.89	44.76	35.34	28.27

#12-10 AWG wire.

C-328-10	10	⅜	5/16	$6.24	$47.44	$37.46	$29.96
C-330-14†	¼″	17/32	13/32	7.18	54.57	43.08	34.46
C-330-56	5/16″	17/32	13/32	7.18	54.57	43.08	34.46
C-340-38*	⅜″	19/32	31/64	8.70	66.10	52.19	41.75

#8 AWG wire.

D-350-10*	10	15/32	11/32	$9.83	$82.78	$72.44	$62.09
D-350-14*	¼″	15/32	11/32	9.83	82.78	72.44	62.09

SPADE TONGUE (FIG. B)

#22-18 AWG wire.

AA-3109-02	2	3/16	13/64	$4.34	$32.98	$26.04	$20.83
AA-338-04	4	¼	7/32	4.34	32.98	26.04	20.83
A-338-06	6	¼	7/32	4.34	32.98	26.04	20.83
AA-338-06	6	¼	7/32	4.34	32.98	26.04	20.83
A-334-06	6	19/64	7/32	4.34	32.98	26.04	20.83
AA-334-06	6	19/64	7/32	4.34	32.98	26.04	20.83
A-335-06	6	5/16	5/16	4.34	32.98	26.04	20.83
AA-334-08	8	19/64	7/32	4.34	32.98	26.04	20.83
A-335-08	8	5/16	5/16	4.34	32.98	26.04	20.83
A-335-10	10	5/16	5/16	4.34	32.98	26.04	20.83

#16-14 AWG wire.

B-324-06	6	19/64	7/32	$4.34	$32.98	$26.04	$20.83
BB-324-06	6	19/64	7/32	4.34	32.98	26.04	20.83
B-324-08	8	19/64	7/32	4.34	32.98	26.04	20.83
BB-324-08	8	19/64	7/32	4.34	32.98	26.04	20.83
B-327-10	10	23/64	9/32	4.34	32.98	26.04	20.83
BB-327-10	10	23/64	9/32	4.34	32.98	26.04	20.83

#12-10 AWG wire.

C-341-08	8	⅜	5/16	$6.49	$49.32	$38.94	$31.15
C-341-10	10	⅜	5/16	6.49	49.32	38.94	31.15

FLANGED SPADE TONGUE (FIG. C)

#22-18 AWG wire.

A-315-06	6	19/64	7/32	$4.34	$32.98	$26.04	$20.83
AA-315-06	6	19/64	7/32	4.34	32.98	26.04	20.83
A-315-08	8	19/64	7/32	4.34	32.98	26.04	20.83
AA-315-08	8	19/64	7/32	4.34	32.98	26.04	20.83

#16-14 AWG wire.

B-316-06	6	19/64	7/32	$4.34	$32.98	$26.04	$20.83
B-316-08	8	19/64	7/32	4.34	32.98	26.04	20.83
B-383-10	10	⅜	¼	4.34	32.98	26.04	20.83

RECTANGULAR TONGUE (FIG. E)

#22-18 AWG wire.

A-314-06	6	19/64	7/32	$4.34	$32.98	$26.04	$20.83
A-314-08	8	19/64	7/32	4.34	32.98	26.04	20.83

VIBRAKRIMP® INSULATION SUPPORT TIN-PLATED BRASS SLEEVE SPADE TONGUE (FIG. G)

#22-18 AWG wire.

AA-434-06	6	19/64	7/32	$6.58	$50.03	$39.50	$31.60
AA-434-08	8	19/64	7/32	6.58	50.03	39.50	31.60

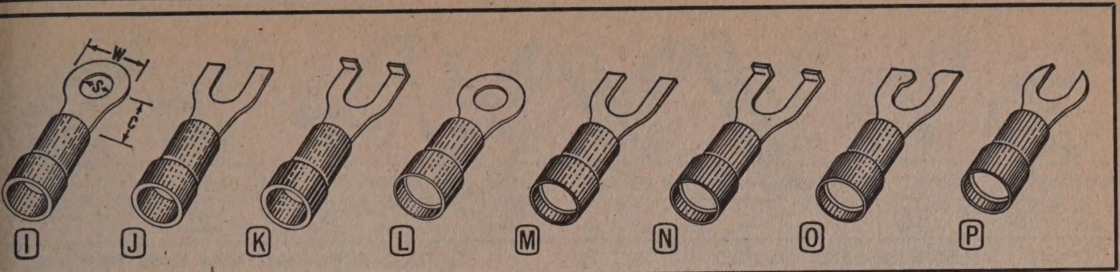
FLANGED SPADE TONGUE (FIG. H)

#16-14 AWG wire.

BB-416-06	6	19/64	7/32	$6.58	$50.03	$39.50	$31.60
BB-416-08	8	19/64	7/32	6.58	50.03	39.50	31.60
BB-483-10	10	⅜	¼	6.58	50.03	39.50	31.60

*Parts not available on tape. †500 terminals per reel. For full details, see taping information and pricing on another page.

ETC® Solderless Terminals



INSULATED TERMINALS
INSULKRIMP® PVC INSULATION SUPPORT SLEEVE
RING TONGUE (FIG. I)

-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
220-04X	4	7/32	5/32	$6.80	$51.64	$40.77	$32.62
-220-04X	4	7/32	5/32	6.80	51.64	40.77	32.62
232-04X	4	1/4	1/4	6.80	51.64	40.77	32.62
-232-04X	4	1/4	1/4	6.80	51.64	40.77	32.62
220-06X	6	7/32	5/32	6.80	51.64	40.77	32.62
-220-06X	6	7/32	5/32	6.80	51.64	40.77	32.62
232-06X	6	1/4	1/4	6.80	51.64	40.77	32.62
-232-06X	6	1/4	1/4	6.80	51.64	40.77	32.62
232-08X	8	1/4	1/4	6.80	51.64	40.77	32.62
-232-08X	8	1/4	1/4	6.80	51.64	40.77	32.62
221-08X	8	5/16	5/16	6.80	51.64	40.77	32.62
-221-08X	8	5/16	5/16	6.80	51.64	40.77	32.62
221-10X	10	5/16	5/16	6.80	51.64	40.77	32.62
-221-10X	10	5/16	5/16	6.80	51.64	40.77	32.62
222-14X	1/4″	15/32	13/32	8.36	63.54	50.16	40.13
222-56X	5/16″	15/32	13/32	8.36	63.54	50.16	40.13

-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
223-06X	6	1/4	7/32	$6.80	$51.64	$40.77	$32.62
-223-06X	6	1/4	7/32	6.80	51.64	40.77	32.62
237-08X	8	5/16	9/32	6.80	51.64	40.77	32.62
-239-08X	8	11/32	5/16	6.80	51.64	40.77	32.62
228-08HDX†	8	3/8	5/16	9.81	74.54	58.85	47.08
237-10X	10	5/16	9/32	6.80	51.64	40.77	32.62
-237-10X	10	5/16	9/32	6.80	51.64	40.77	32.62
239-10X	10	11/32	5/16	6.80	51.64	40.77	32.62
-239-10X	10	11/32	5/16	6.80	51.64	40.77	32.62
228-10HDX†	10	3/8	5/16	9.81	74.54	58.85	47.08
225-14X	1/4″	15/32	13/32	8.36	63.54	50.16	40.13
-225-14X	1/4	15/32	13/32	8.36	63.54	50.16	40.13
225-56X	5/16″	15/32	13/32	8.36	63.54	50.16	40.13
-225-56X	5/16″	15/32	13/32	8.36	63.54	50.16	40.13

2-10 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
228-10X	10	3/8	5/16	$ 8.65	$65.80	$51.95	$41.56
230-14X‡	1/4″	17/32	13/32	9.20	69.88	55.17	44.14
230-56X‡	5/16″	17/32	13/32	9.20	69.88	55.17	44.14
240-38X*	3/8″	19/32	31/64	10.21	77.58	61.25	49.00

AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
650-10*	10	15/32	11/32	$14.70	123.71	108.25	$92.78
656-10*	10	3/8	11/32	14.70	123.71	108.25	92.78
650-14*	1/4″	15/32	11/32	14.70	123.71	108.25	92.78
656-14*	1/4″	3/8	11/32	14.70	123.71	108.25	92.78

SPADE TONGUE (FIG. J)

6-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
224-06X	6	19/64	7/32	$6.80	$51.64	$40.77	$32.62
224-08X	8	19/64	7/32	6.80	51.64	40.77	32.62
227-10X	10	23/64	9/32	6.80	51.64	40.77	32.62

FLANGED SPADE (FIG. K)

2-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
A-215-06X	6	19/64	7/32	$6.80	$51.64	$40.77	$32.62
A-215-08X	8	19/64	7/32	6.80	51.64	40.77	32.62

6-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
-216-06X	6	19/64	7/32	$6.80	$51.64	$40.77	$32.62
-216-08X	8	19/64	7/32	6.80	51.64	40.77	32.62
-283-10X	10	3/8	1/4	6.80	51.64	40.77	32.62

AVIKRIMP® NYLON INSULATED VIBRATION SUPPORT
RING TONGUE (FIG. L)

6-24 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
-8122-02	2	9/64	1/8	$9.79	$74.39	$58.73	$46.98
-8113-04	4	13/64	7/32	9.79	74.39	58.73	46.98
-8113-06	6	13/64	7/32	9.79	74.39	58.73	46.98
-8118-06	6	1/4	19/64	9.79	74.39	58.73	46.98
-8118-08	8	1/4	19/64	9.79	74.39	58.73	46.98
-8118-10	10	1/4	19/64	9.79	74.39	58.73	46.98

22-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
-520-04	4	7/32	5/32	$9.79	$74.39	$58.73	$46.98
A-820-04§	4	7/32	5/32	9.79	74.39	58.73	46.98
-532-04	4	1/4	1/4	9.79	74.39	58.73	46.98
A-832-04§	4	1/4	1/4	9.79	74.39	58.73	46.98
-520-06	6	7/32	5/32	9.79	74.39	58.73	46.98
A-820-06§	6	7/32	5/32	9.79	74.39	58.73	46.98
-532-08	8	1/4	1/4	9.79	74.39	58.73	46.98
A-832-08§	8	1/4	1/4	9.79	74.39	58.73	46.98
-521-08	8	5/16	5/16	9.79	74.39	58.73	46.98
A-821-08§	8	5/16	5/16	9.79	74.39	58.73	46.98

AVIKRIMP NYLON INSULATED VIBRATION SUPPORT (CONT'D)
RING TONGUE (FIG. L)

#22-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
A-521-10	10	5/16	5/16	$ 9.79	$74.39	$58.73	$46.98
AA-821-10§	10	5/16	5/16	9.79	74.39	58.73	46.98
A-522-14	1/4″	15/32	13/32	11.47	87.19	68.84	55.07
A-522-56	5/16″	15/32	13/32	11.47	87.19	68.84	55.07

#16-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
B-523-06	6	1/4	7/32	$ 9.79	$74.39	$58.73	$46.98
BB-823-06§	6	1/4	7/32	9.79	74.39	58.73	46.98
B-537-08	8	5/16	9/32	9.79	74.39	58.73	46.98
BB-839-08§	8	11/32	5/16	9.79	74.39	58.73	46.98
B-537-10	10	5/16	9/32	9.79	74.39	58.73	46.98
BB-837-10§	10	5/16	9/32	9.79	74.39	58.73	46.98
B-539-10	10	11/32	5/16	9.79	74.39	58.73	46.98
BB-839-10§	10	11/32	5/16	9.79	74.39	58.73	46.98
B-525-14	1/4″	15/32	13/32	11.47	87.19	68.84	55.07
BB-825-14§	1/4″	15/32	13/32	11.47	87.19	68.84	55.07
B-525-56	5/16″	15/32	13/32	11.47	87.19	68.84	55.07
BB-825-56§	5/16″	15/32	13/32	11.47	87.19	68.84	55.07

#12-10 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
C-828-10	10	3/8	5/16	$12.09	$91.88	$72.54	$58.03
C-830-14‡	1/4″	17/32	13/32	12.33	93.73	74.00	59.20
C-830-56‡	5/16″	17/32	13/32	12.33	93.73	74.00	59.20
C-840-38*	3/8″	19/32	31/64	13.39	101.76	80.34	64.27

SPADE TONGUE (FIG. M)

#26-24 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
M-8123-00	0	9/64	1/8	$9.79	$74.39	$58.73	$46.98
M-8116-02	2	3/16	7/32	9.79	74.39	58.73	46.98
M-8121-04	4	13/64	7/32	9.79	74.39	58.73	46.98

#22-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
AA-8109-02§	2	3/16	13/64	$9.79	$74.39	$58.73	$46.98
AA-838-04§	4	1/4	7/32	9.79	74.39	58.73	46.98
A-538-06	6	1/4	7/32	9.79	74.39	58.73	46.98
AA-838-06§	6	1/4	7/32	9.79	74.39	58.73	46.98
A-534-06	6	19/64	7/32	9.79	74.39	58.73	46.98
AA-834-06§	6	19/64	7/32	9.79	74.39	58.73	46.98
A-535-06	6	5/16	5/16	9.79	74.39	58.73	46.98
A-535-08	8	5/16	5/16	9.79	74.39	58.73	46.98
A-535-10	10	5/16	5/16	9.79	74.39	58.73	46.98

#16-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
B-524-06	6	19/64	7/32	$9.79	$74.39	$58.73	$46.98
BB-824-06§	6	19/64	7/32	9.79	74.39	58.73	46.98
B-524-08	8	19/64	7/32	9.79	74.39	58.73	46.98
BB-824-08§	8	19/64	7/32	9.79	74.39	58.73	46.98
B-527-10	10	23/64	9/32	9.79	74.39	58.73	46.98
BB-827-10§	10	23/64	9/32	9.79	74.39	58.73	46.98

#12-10 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
C-841-08	8	3/8	5/16	$12.09	$91.88	$72.54	$58.03
C-841-10	10	3/8	5/16	12.09	91.88	72.54	58.03

FLANGED SPADE (FIG. N)

#22-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
A-515-06	6	19/64	7/32	$9.79	$74.39	$58.73	$46.98
AA-815-06§	6	19/64	7/32	9.79	74.39	58.73	46.98
A-515-08	8	19/64	7/32	9.79	74.39	58.73	46.98
AA-815-08§	8	19/64	7/32	9.79	74.39	58.73	46.98

#16-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
B-516-06	6	19/64	7/32	$9.79	$74.39	$58.73	$46.98
BB-816-06§	6	19/64	7/32	9.79	74.39	58.73	46.98
B-516-08	8	19/64	7/32	9.79	74.39	58.73	46.98
BB-816-08§	8	19/64	7/32	9.79	74.39	58.73	46.98
B-583-10	10	3/8	1/4	9.79	74.39	58.73	46.98
BB-883-10§	10	3/8	1/4	9.79	74.39	58.73	46.98

SNAP SPADE (FIG. O)

#22-18 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
AA-5190-06	6	1/4	1/4	$9.79	$74.39	$58.73	$46.98
AA-5191-08	8	9/32	1/4	9.79	74.39	58.73	46.98
AA-5192-10	10	21/64	1/4	9.79	74.39	58.73	46.98

#16-14 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
BB-5193-06	6	1/4	1/4	$9.79	$74.39	$58.73	$46.98
BB-5194-08	8	9/32	1/4	9.79	74.39	58.73	46.98
BB-5195-10	10	21/64	1/4	9.79	74.39	58.73	46.98

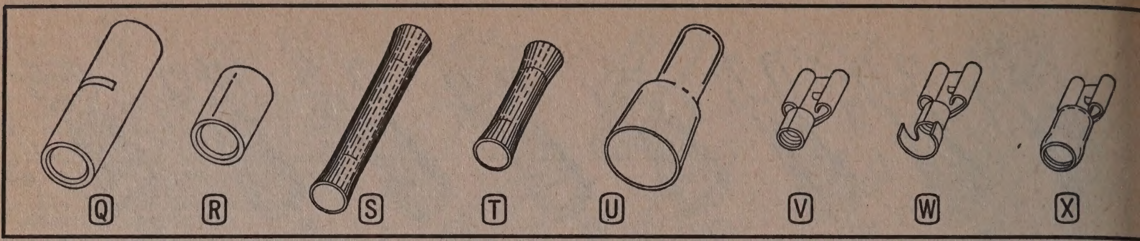
SLOTTED RING (FIG. P)

#26-24 AWG wire.

ETC Part No.	Stud Size S	Dimen., In. Width W	Dimen., In. Clearance C	Net/100 1-999	Net/1000 1000-2499	Net/1000 2500-4999	Net/1000 5000-9999
M-8120-06	6	1/4	19/64	$9.79	$74.39	$58.73	$46.98

*Parts not available on tape. †Heavy duty parts have .050″ copper stock in #16-14 wire range and should be crimped by 12-10 tooling. ‡500 terminals per reel. For full details, see taping information and pricing on following page. §Taped parts available with funnel ferrule; prices on request.

ETC® Splices, Quick-Connects, Tool



UNINSULATED SPLICES

VERSAKRIMP™ SEAMLESS BUTT SPLICE (FIG. Q)

ETC Number	Wire Range	Length Inch	Net per 100	Net per 1000		
			1-999	1000-2499	2500-4999	5000-9999
AS-345*	22-18	21/32	$5.17	$39.27	$31.01	$24.80
BS-331*	16-14	21/32	5.17	39.27	31.01	24.80
CS-346*	12-10	13/16	7.52	57.13	45.11	36.08

PARALLEL SPLICE (FIG. R)

AS-302*	22-18	5/16	$4.01	$30.50	$24.08	$19.26
BS-304*	16-14	5/16	4.01	30.50	24.08	19.26
CS-303*	12-10	5/16	4.97	37.79	29.84	23.87

INSULATED SPLICES

INSULKRIMP® PVC INSULATED BUTT SPLICE (FIG. S)

ETC Number	Wire Range	Lgth. Inch	Max. Wire Insul. Dia. In.	Net per 100	Net per 1000		
				1-999	1000-2499	2500-4999	5000-9999
A-245X†	22-18	15/16	.145	$7.23	$54.93	$43.37	$34.69
B-231X†	16-14	15/16	.200	7.23	54.93	43.37	34.69
C-246X†	12-10	1 1/16	.255	9.80	74.50	58.82	47.05

PARALLEL SPLICE (FIG. T)

A-202X*	22-18	11/16	.145	$6.55	$49.78	$39.30	$31.44
B-204X*	16-14	11/16	.175	6.55	49.78	39.30	31.44
C-203X*	12-10	25/32	.255	8.79	66.80	52.74	42.19

NYLAKRIMP™ NYLON INSULATED BUTT SPLICE (FIG. S)

AS-N-345†	22-18	1 3/64	.120	$ 8.73	$66.33	$52.37	$41.89
BS-N-331†	16-14	1 3/64	.150	8.36	63.54	50.16	40.13
CS-N-346†	12-10	1 5/16	.210	11.34	86.17	68.03	54.42

PARALLEL SPLICE (FIG. T)

AS-N-302*	22-18	5/8	.120	$6.55	$49.78	$39.30	$31.44
BS-N-304*	16-14	5/8	.150	6.55	49.78	39.30	31.44
CS-N-303*	12-10	5/8	.210	8.79	66.80	52.74	42.19

NYLON CLOSED END CONNECTORS (FIG. U)

ETC Number	Wire Range	Circular Mil Area	Net per 100	Net per 1000		
			1-999	1000-2499	2500-4999	5000-9999
NC-2214*	22-14	600–5180	$4.40	$33.46	$26.42	$21.13
NC-1610*	16-10	2400–13,100	6.61	50.26	39.68	31.74

QUICK-CONNECTS

KRIMPTITE® UNINSULATED BUTTED SEAM BARREL (FIG. V)

ETC Number	Wire Range	Fits Tab Size, Inch	Net per 100	Net per 1000		
			1-999	1000-2499	2500-4999	5000-9999
AA-1140	22-18	.250 x .032	$3.92	$29.75	$23.49	$18.79
BB-1141	16-14	.250 x .032	3.92	29.75	23.49	18.79
P-1142	14-12	.250 x .032	4.00	30.38	23.99	19.19
AA-1137	22-18	.187 x .020	3.52	26.81	21.17	16.93
BB-1138	16-14	.187 x .020	3.52	26.81	21.17	16.93

VIBRAKRIMP® VIBRATION SUPPORT BARREL (FIG. W)

AA-4176	22-18	.250 x .032	$4.27	$32.43	$25.61	$20.48
BB-4177	16-14	.250 x .032	4.27	32.43	25.61	20.48
P-4178	14-12	.250 x .032	4.36	33.09	26.13	20.90
AA-4173	22-18	.187 x .020	3.85	29.24	23.09	18.47
BB-4174	16-14	.187 x .020	3.85	29.24	23.09	18.47

AVIKRIMP® NYLON INSULATED AND VIBRATION SUPPORT (FIG. X)

AA-8140	22-18	.250 x .032	$11.31	$85.94	$67.85	$54.28
BB-8141	16-14	.250 x .032	11.31	85.94	67.85	54.28
P-8142	14-12	.250 x .032	11.78	89.49	70.65	56.52
AA-8137	22-18	.187 x .020	10.70	81.30	64.19	51.35
BB-8138	16-14	.187 x .020	10.70	81.30	64.19	51.35

*Parts not available on tape. †500 terminals per reel. For full details, see taping information and pricing above right.

ETC OFFERS RATCHET HAND TOOLS FOR PRODUCTION CRIMPING. WRITE FOR FULL INFORMATION AND PRICES

TAPING INFORMATION AND PRICING

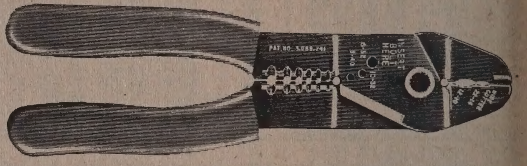
Most loose-piece parts are available on tape for high-speed auto mated crimping with ETC air or electric crimping presses. T order tape-fed terminals, add **T** to part number (e.g., AA-332-06-T) Parts must be ordered in multiples of full reels, 1M terminal per reel.

TAPING PRICES

Add following prices to standard prices for loose-piece terminal or splices.

ETC Part	Net per 1000		
	1000-2499	2500-4999	5000-9999
Terminals	$5.15	$4.60	$4.05
Splices	5.75	5.25	4.75

MULTI-PURPOSE ABC-550 HAND TOOL



Quality tool does the job of five tools. Crimp #22 thru #10 insulate and non-insulated terminals and splices. Cuts, strips wire. Cut bolts. Cushion grip handles for "no-fatigue" crimping.
ETC Model ABC-550 Hand Tool—Net Each, Lots of 1–24 . **$4.45**

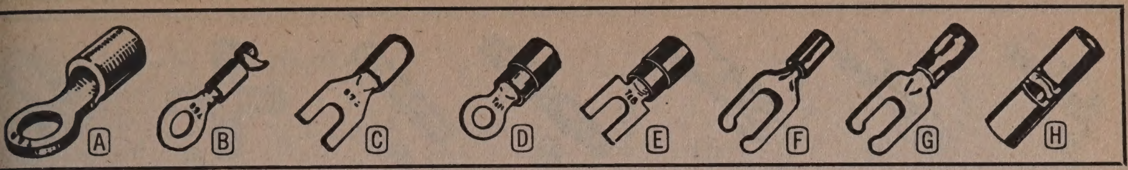
ETC-MILITARY CROSS REFERENCE

MIL-T-7928

MS Number	ETC Number	MS Number	ETC Number
25036-101 ASG	A-520-06	25036-125 ASG	F-766-38
25036-101 ASG	AA-520-06	25036-126 ASG	G-775-14
25036-101 ASG	AA-820-06	25036-127 ASG	G-775-38
25036-102 ASG	A-532-06	25036-128 ASG	G-774-12
25036-102 ASG	AA-532-06	25036-128 ASG	G-776-12
25036-102 ASG	AA-832-06	25036-129 ASG	H-781-14*
25036-103 ASG	A-521-10	25036-130 ASG	H-781-38*
25036-103 ASG	AA-521-10	25036-131 ASG	H-780-12*
25036-103 ASG	AA-821-10	25036-132 ASG	H-781-14
25036-104 ASG	A-522-56	25036-133 ASG	H-781-38
25036-104 ASG	AA-522-56	25036-134 ASG	H-780-12
25036-104 ASG	AA-822-56	25036-135 ASG	J-785-56
25036-105 ASG	A-526-38	25036-136 ASG	J-785-38
25036-105 ASG	AA-526-38	25036-137 ASG	J-785-12
25036-105 ASG	AA-826-38	25036-138 ASG	K-790-38
25036-106 ASG	B-523-06	25036-139 ASG	K-790-12
25036-106 ASG	BB-523-06	25036-140 ASG	L-795-38
25036-106 ASG	BB-823-06	25036-141 ASG	L-795-12
25036-107 ASG	B-537-06	25036-143 ASG	M-8114-02
25036-107 ASG	B-539-06	25036-143 ASG	M-8122-02
25036-107 ASG	BB-537-06	25036-144 ASG	M-8113-04
25036-107 ASG	BB-539-06	25036-145 ASG	M-8118-06
25036-107 ASG	BB-837-06	25036-146 ASG	M-8118-08
25036-107 ASG	BB-839-06	25036-147 ASG	M-8118-10
25036-108 ASG	B-537-10	25036-148 ASG	A-520-04
25036-108 ASG	B-539-10	25036-148 ASG	AA-520-04
25036-108 ASG	BB-537-10	25036-148 ASG	AA-820-04
25036-108 ASG	BB-539-10	25036-149 ASG	A-521-08
25036-108 ASG	BB-837-10	25036-149 ASG	AA-521-08
25036-108 ASG	BB-839-10	25036-149 ASG	AA-821-08
25036-109 ASG	B-525-56	25036-150 ASG	A-522-14
25036-109 ASG	BB-525-56	25036-150 ASG	AA-522-14
25036-109 ASG	BB-825-56	25036-150 ASG	AA-822-14
25036-110 ASG	B-518-38	25036-152 ASG	B-523-04
25036-110 ASG	BB-518-38	25036-152 ASG	BB-523-04
25036-110 ASG	BB-818-38	25036-152 ASG	BB-823-04
25036-111 ASG	C-528-06	25036-153 ASG	B-537-08
25036-111 ASG	C-828-06	25036-153 ASG	B-539-08
25036-112 ASG	C-528-10	25036-153 ASG	BB-537-08
25036-112 ASG	C-828-10	25036-153 ASG	BB-539-08
25036-113 ASG	C-530-56	25036-153 ASG	BB-837-08
25036-113 ASG	C-830-56	25036-153 ASG	BB-839-08
25036-114 ASG	C-540-38	25036-154 ASG	BB525-14
25036-114 ASG	C-840-38	25036-154 ASG	BB-525-14
25036-115 ASG	D-756-10	25036-154 ASG	BB-825-14
25036-116 ASG	D-750-14	25036-156 ASG	C-528-08
25036-117 ASG	D-751-56	25036-156 ASG	C-828-08
25036-118 ASG	D-751-38	25036-157 ASG	C-530-14
25036-119 ASG	E-760-10	25036-157 ASG	C-830-14
25036-120 ASG	E-760-14	20659-105 ASG	C-328-10
25036-121 ASG	E-756-56	20659-106 ASG	C-330-56
25036-122 ASG	E-757-38	20659-128 ASG	C-340-38
25036-123 ASG	F-767-14	20659-141 ASG	D-350-14
25036-124 ASG	F-766-56		

*Use 1/0 terminals for applications calling for #1 AWG terminals

T&B ENGINEERED Thomas and Betts STA-KON® TERMINALS



opper (tin-plated) terminals, which, when crimped with proper a-Kon tool, comprises a terminal with less resistance than an ual length of the conductor. Barrel serrated to increase grip d contact area. Insulated terminals color coded for wire size nge identification. Wire size also stamped on terminals. Meet exceed UL, CSA and military specifications.

UNINSULATED TERMINALS

RING TONGUE TYPE (FIG. A)

stall with WT1000, WT100M, WT111M, WT110M or WT130A nd tools.

					Net per 100, Lots of		
. & B. No.	Wire Range	Stud Size	Unit Qty.	Std. Pkg.	Below Unit Qty.	Unit Qty.	Std. Pkg.
18-4	22–18	#4	100	500	$6.40	$5.00	$4.00
18-6	22–18	#6	100	500	6.40	5.00	4.00
18-8	22–18	#8	100	500	6.40	5.00	4.00
18-10	22–18	#10	100	500	6.40	5.00	4.00
18-14	22–18	¼″	100	500	8.32	6.50	5.20
18-516	22–18	5⁄16″	100	500	8.32	6.50	5.20
18-38	22–18	⅜″	100	500	8.32	6.50	5.20
14-4	16–14	#4	100	500	6.40	5.00	4.00
14-6	16–14	#6	100	500	6.40	5.00	4.00
14-8	16–14	#8	100	500	6.40	5.00	4.00
14-10	16–14	#10	100	500	6.40	5.00	4.00
14-14	16–14	¼″	100	500	8.32	6.50	5.20
14-516	16–14	5⁄16″	100	500	8.32	6.50	5.20
14-38	16–14	⅜″	100	500	8.32	6.50	5.20
10-6	12–10	#6	50	500	8.64	6.75	5.40
10-8	12–10	#8	50	500	8.64	6.75	5.40
10-10	12–10	#10	50	500	8.64	6.75	5.40
10-14	12–10	¼″	50	500	9.92	7.75	6.20
10-516	12–10	5⁄16″	50	500	9.92	7.75	6.20
10-38	12–10	⅜″	50	500	9.92	7.75	6.20

stall with WT115A hand tool.

8-10	9, 8, 7	#10	25	500	$25.12	$19.63	$15.70
8-14	9, 8, 7	¼″	25	500	25.12	19.63	15.70
8-516	9, 8, 7	5⁄16″	25	500	25.12	19.63	15.70
8-38	9, 8, 7	⅜″	25	500	25.12	19.63	15.70
6-10	6, 5	#10	20	200	28.16	22.00	17.60
6-14	6, 5	¼″	20	200	28.16	22.00	17.60
6-516	6, 5	5⁄16″	20	200	28.16	22.00	17.60
6-38	6, 5	⅜″	20	200	28.16	22.00	17.60
4-10	4, 3	#10	20	200	36.80	28.75	23.00
4-14	4, 3	¼″	20	200	36.80	28.75	23.00
4-516	4, 3	5⁄16″	20	200	36.80	28.75	23.00
4-38	4, 3	⅜″	20	200	36.80	28.75	23.00
2-14	2, 1	¼″	10	100	71.04	55.50	44.40
2-516	2, 1	5⁄16″	10	100	71.04	55.50	44.40
2-38	2, 1	⅜″	10	100	71.04	55.50	44.40
10-14†	1/0	¼″	10	100	76.80	60.00	48.00
20-38†	2/0	⅜″	10	100	88.96	69.50	55.60
30-38†	3/0	⅜″	5	50	104.32	81.50	65.20
40-38†	4/0	⅜″	5	50	119.52	93.38	74.70
250-38†	*	⅜″	5	50	138.24	108.00	86.40

250MCM. †Install with WT117 hand tool only.

RING TONGUE WITH INSULATION GRIP (FIG. B)

nstall with WT100, WT100M or WT110M hand tools.

14-6G	16–14	#6	100	500	$8.32	$6.50	$5.20
14-8G	16–14	#8	100	500	8.32	6.50	5.20
14-10G	16–14	#10	100	500	8.32	6.50	5.20
14-14G	16–14	¼″	100	500	9.92	7.75	6.20

FORK TONGUE TYPE (FIG. C)

nstall with WT100M, WT111M, WT110M, WT130A or WT1000 and tools.

18-6F	22–18	#6	100	500	$6.40	$5.00	$4.00
18-8F	22–18	#8	100	500	6.40	5.00	4.00
18-10F	22–18	#10	100	500	6.40	5.00	4.00
18-14F	22–18	¼″	100	500	8.32	6.50	5.20
14-6F†	16–14	#6	100	500	6.40	5.00	4.00
14-6FS*	16–14	#6	100	500	7.04	5.50	4.40
14-8F†	16–14	#8	100	500	6.40	5.00	4.00
14-10F†	16–14	#10	100	500	6.40	5.00	4.00
14-14F†	16–14	¼″	100	500	8.32	6.50	5.20
10-6F	12–10	#6	50	500	8.64	6.75	5.40
10-8F	12–10	#8	50	500	8.64	6.75	5.40
10-10F	12–10	#10	50	500	8.64	6.75	5.40
10-14F	12–10	¼″	50	500	9.92	7.75	6.20

Turned up toes. †Also available with insulation grip.

NYLON SELF-INSULATED TERMINALS

ypes with prefix RZ install with WT462 hand tool; all others nstall with WT1000, WT100M or WT145C hand tools. Also vailable with expanded insulation grip.

RING TONGUE TYPE (FIG. D)

Z22-2	26–22	#2	100	500	$14.40	$11.25	$9.00
Z22-4	26–22	#4	100	500	14.40	11.25	9.00
Z22-6	26–22	#6	100	500	14.40	11.25	9.00
Z22-8	26–22	#8	100	500	14.40	11.25	9.00
Z22-10	26–22	#10	100	500	14.40	11.25	9.00
A18-4	22–16	#4	100	500	14.40	11.25	9.00
A18-6	22–16	#6	100	500	14.40	11.25	9.00

NYLON SELF-INSULATED—RING TONGUE TYPE (CONT'D)

					Net per 100, Lots of		
T. & B. No.	Wire Range	Stud Size	Unit Qty.	Std. Pkg.	Below Unit Qty.	Unit Qty.	Std. Pkg.
RA18-8	22–16	#8	100	500	$14.40	$11.25	$ 9.00
RA18-10	22–16	#10	100	500	14.40	11.25	9.00
RA18-14	22–16	¼″	100	500	16.00	12.50	10.00
RA18-516	22–16	5⁄16″	100	500	16.00	12.50	10.00
RA18-38	22–16	⅜″	100	500	16.00	12.50	10.00
RB14-4	18–14	#4	100	500	14.40	11.25	9.00
RB14-6	18–14	#6	100	500	14.40	11.25	9.00
RB14-8	18–14	#8	100	500	14.40	11.25	9.00
RB14-10	18–14	#10	100	500	14.40	11.25	9.00
RB14-14	18–14	¼″	100	500	16.00	12.50	10.00
RB14-516	18–14	5⁄16″	100	500	16.00	12.50	10.00
RB14-38	18–14	⅜″	100	500	16.00	12.50	10.00
RC10-6	12–10	#6	50	500	17.60	13.75	11.00
RC10-8	12–10	#8	50	500	17.60	13.75	11.00
RC10-10	12–10	#10	50	500	17.60	13.75	11.00
RC10-14	12–10	¼″	50	500	19.20	15.00	12.00
RC10-516	12–10	5⁄16″	50	500	19.20	15.00	12.00
RC10-38	12–10	⅜″	50	500	19.20	15.00	12.00

FORK TONGUE TYPE (FIG. E)

RA18-6F	22–16	#6	100	500	$14.40	$11.25	$ 9.00
RA18-8F	22–16	#8	100	500	14.40	11.25	9.00
RA18-10F	22–16	#10	100	500	14.40	11.25	9.00
RA18-14F	22–16	¼″	100	500	16.00	12.50	10.00
RB14-6F	18–14	#6	100	500	14.40	11.25	9.00
RB14-8F	18–14	#8	100	500	14.40	11.25	9.00
RB14-10F	18–14	#10	100	500	14.40	11.25	9.00
RB14-14F	18–14	¼″	100	500	16.00	12.50	10.00
RC10-6F	12–10	#6	50	500	17.60	13.75	11.00
RC10-8F	12–10	#8	50	500	17.60	13.75	11.00
RC10-10F	12–10	#10	50	500	17.60	13.75	11.00
RC10-14F	12–10	¼″	50	500	19.20	15.00	12.00

LOCKING SPADE TERMINALS

Goes on like fork tongue; stays on like ring tongue. Use WT110M, -111M, -130A, -100M, -1000 for non-insul. types; WT-445A hand tool for vinyl self-insul. Series RA and RB. WT-540 interchangeable die tool for Series: RA (5502 die), RB (5500 die), RC (5505 die), WT1000 and WT145C.

Non-insulated (Fig. F)

					Net per 100, Lots of		
T. & B. No.	Wire Range	Stud Size	Unit Qty.	Std. Pkg.	Below Unit Qty.	Unit Qty.	Std. Pkg.
A18-6FL	22–16	#6	100	500	$ 7.20	$5.63	$4.50
A18-8FL	22–16	#8	100	500	7.20	5.63	4.50
A18-10FL	22–16	#10	100	500	7.20	5.63	4.50
B14-6FL	16–14	#6	100	500	7.20	5.63	4.50
B14-8FL	16–14	#8	100	500	7.20	5.63	4.50
B14-10FL	16–14	#10	100	500	7.20	5.63	4.50
C10-6FL	12–10	#6	50	500	9.92	7.75	6.20
C10-8FL	12–10	#8	50	500	9.92	7.75	6.20
C10-10FL	12–10	#10	50	500	9.92	7.75	6.20
C10-14FL	12–10	¼″	50	500	12.00	9.38	7.50

Vinyl self-insulated with insulation support (Fig. G)

18RA-6FL	22–16	#6	100	500	$11.36	$ 8.88	$7.10
18RA-8FL	22–16	#8	100	500	11.36	8.88	7.10
18RA-10FL	22–16	#10	100	500	11.36	8.88	7.10
14RB-6FL	18–14	#6	100	500	11.36	8.88	7.10
14RB-8FL	18–14	#8	100	500	11.36	8.88	7.10
14RB-10FL	18–14	#10	100	500	11.36	8.88	7.10
10RC-6FL	12–10	#6	50	500	15.36	12.00	9.60
10RC-8FL	12–10	#8	50	500	15.36	12.00	9.60
10RC-10FL	12–10	#10	50	500	15.36	12.00	9.60
10RC-14FL	12–10	¼″	50	500	18.24	14.25	11.40

Vinyl self-insulated with expanded insulation support (Fig. G)

18RA-6FLX	22–16	#6	100	500	$12.00	$ 9.38	$7.50
18RA-8FLX	22–16	#8	100	500	12.00	9.38	7.50
18RA-10FLX	22–16	#10	100	500	12.00	9.38	7.50
14RB-6FLX	18–14	#6	100	500	12.00	9.38	7.50
14RB-8FLX	18–14	#8	100	500	12.00	9.38	7.50
14RB-10FLX	18–14	#10	100	500	12.00	9.38	7.50
10RC-6FLX	12–10	#6	50	500	15.84	12.38	9.90
10RC-8FLX	12–10	#8	50	500	15.84	12.38	9.90
10RC-10FLX	12–10	#10	50	500	15.84	12.38	9.90
10RC-14FLX	12–10	¼″	50	500	19.20	15.00	12.00

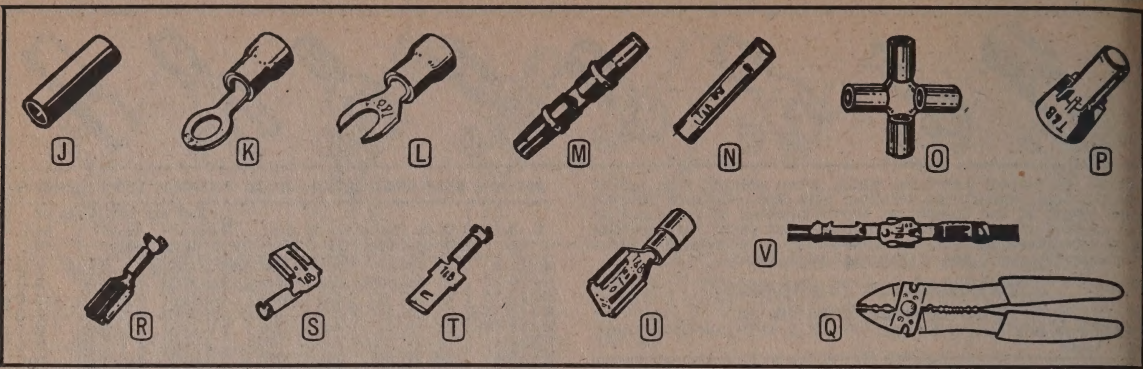
UNINSULATED 2-WAY BUTT SPLICES (FIG. H)

				Net per 100, Lots of		
T. & B. No.	Wire Range	Unit Qty.	Std. Pkg.	Below Unit Qty.	Unit Qty.	Std. Pkg.
2A18*	22–18	100	500	$ 7.36	$ 5.75	$ 4.60
2B14*	16–14	100	500	7.36	5.75	4.60
2C10*	12–10	50	500	10.40	8.13	6.50
2D8†	9–8–7	25	250	25.28	19.75	15.80
2E6†	6–5	20	200	35.36	27.63	22.10
2F4†	4–3	15	150	50.24	39.25	31.40
2G21†	2–1	5	50	66.56	52.00	41.60

Install with hand tool: *WT100M, -110M, -111M, -130A, WT1000; †WT115A, -117.

T&B ENGINEERED

Thomas and Betts STA-KON® TERMINALS



UNINSULATED OVERLAP TYPE SPLICES (FIG. J)

T. & B. No.	Wire Range	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
2A22-20‡	22-20	100	500	$ 6.40	$ 5.00	$ 4.00
2B18-16‡	18-16	100	500	6.72	5.25	4.20
2C14-12‡	14-12	50	500	8.64	6.75	5.40
2D10-9†	10-9	20	200	13.12	10.25	8.20
2E8-7†	8-7	20	200	21.92	17.13	13.70
2F6-5†	6-5	20	200	28.00	21.88	17.50
2G4-2†	4-2	10	100	34.24	26.75	21.40

Install with: †WT115A, WT117; ‡WT100M, WT110M, WT1000.

VINYL GRIP SERIES TERMINALS

Install with WT100M, WT145C or WT1000 hand tools. Also available with expanded insulation.

RING TONGUE TYPE (FIG. K)

T. & B. No.	Wire Range	Stud Size	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
18RA-4	22-16	#4	100	500	$10.24	$ 8.00	$6.40
18RA-6	22-16	#6	100	500	10.24	8.00	6.40
18RA-8	22-16	#8	100	500	10.24	8.00	6.40
18RA-10	22-16	#10	100	500	10.24	8.00	6.40
18RA-14	22-16	¼″	100	500	12.16	9.50	7.60
18RA-516	22-16	5/16″	100	500	12.16	9.50	7.60
18RA-38	22-16	⅜″	100	500	12.16	9.50	7.60
14RB-4	18-14	#4	100	500	10.24	8.00	6.40
14RB-6	18-14	#6	100	500	10.24	8.00	6.40
14RB-8	18-14	#8	100	500	10.24	8.00	6.40
14RB-10	18-14	#10	100	500	10.24	8.00	6.40
14RB-14	18-14	¼″	100	500	12.16	9.50	7.60
14RB-516	18-14	5/16″	100	500	12.16	9.50	7.60
14RB-38	18-14	⅜″	50	500	12.16	9.50	7.60
10RC-6	12-10	#6	50	500	13.12	10.25	8.20
10RC-8	12-10	#8	50	500	13.12	10.25	8.20
10RC-10	12-10	#10	50	500	13.12	10.25	8.20
10RC-14	12-10	¼″	50	500	15.68	12.25	9.80
10RC-516	12-10	5/16″	50	500	15.68	12.25	9.80
10RC-38	12-10	⅜″	50	500	15.68	12.25	9.80

FORK TONGUE TYPE (FIG. L)

18RA-6F	22-16	#6	100	500	$10.24	$ 8.00	$6.40
18RA-8F	22-16	#8	100	500	10.24	8.00	6.40
18RA-10F	22-16	#10	100	500	10.24	8.00	6.40
14RB-6F	18-14	#6	100	500	10.24	8.00	6.40
14RB-6FS*	18-14	#6	100	500	11.20	8.75	7.00
14RB-8F	18-14	#8	100	500	10.24	8.00	6.40
14RB-10F	18-14	#10	100	500	10.24	8.00	6.40
14RB-14F	18-14	¼″	100	500	12.16	9.50	7.60
10RC-6F	12-10	#6	100	500	13.12	10.25	8.20
10RC-8F	12-10	#8	100	500	13.12	10.25	8.20
10RC-10F	12-10	#10	50	500	13.12	10.25	8.20
10RC-14F	12-10	¼″	50	500	15.68	12.25	9.80

*Turned up toes.

SPLICES

NYLON INSULATED, BUTT TYPE, METAL GRIP (FIG. M)

Meets MIL specs. for aircraft/missile systems. Use WT145A, WT157N, WT462 tools.

T. & B. No.	Wire Range	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
2RZZ	26-22	50	500	$54.72	$42.75	$34.20
2RAA	22-18	50	500	54.72	42.75	34.20
2RBB	16-14	50	500	54.72	42.75	34.20
2RCC	12-10	25	250	76.80	60.00	48.00

NYLON INSULATED, BUTT TYPE, VINYL GRIP (FIG. N)

Install with WT100M, WT105M or WT1000 hand tools.

2RA18†	22-18	100	500	$12.96	$10.13	$ 8.10
2RB14†	16-14	100	500	12.96	10.13	8.10
2RC10†	12-10	50	500	19.20	15.00	12.00
2A20*	22-20	100	500	10.24	8.00	6.40
2B16*	18-16	100	500	10.24	8.00	6.40
2C12*	14-12	50	500	14.56	11.38	9.10

*Overlap type (not illus.). †Install with WT145C or WT1000.

4-WAY UNINSULATED TYPE (FIG. O)

Install with WT100M, WT111M, WT110M, WT130A or WT1000.

4A18	22-18	50	500	$39.36	$30.75	$24.60
4B14	20-14	50	500	39.36	30.75	24.60
4C10	16-10	25	250	50.24	39.25	31.40

STA-KON WIRE JOINTS NYLON INSULATED

T. & B. No.	Holds Wires	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
RB44*▲	2-#20, 2-#16	100	2000	$6.24	$4.88	$3.9
RC55*▲	3-#16, 3-#14	50	2000	9.60	7.50	6.0
RP12*▲	3-#14, 4-#12	100	1000	9.60	7.50	6.0
PT66M†§	2-#14, 3-#12	100	1000	7.36	5.75	4.6
PT70†•	2-#14, 3-#12	200	2000	3.36	2.63	2.1
PT70M†•	3-#18, 4-#12	200	2000	3.36	2.63	2.1
PT80‡•	2-#16, 4-#10	50	500	8.48	6.63	5.3

Install with tools: *WT100M; †WT111M, WT100M, WT161 WT1000; ‡WT100M, WT161, WT1000. §Two piece. •Uninsulated. ▲Fig. P.

SNAP-ON DISCONNECTS

Female fits on male tab (B14-250T) for fast, secure assembly Insulation grip. RB14-250F nylon insulated. Male tabs fo terminal board mtg. available.

T. & B. No.	Fig.	Wire Range	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
B14-250F*	R	20-14	100	500	$ 8.96	$ 7.00	$5.60
B14-250A†	S	20-14	50	500	9.92	7.75	6.20
B14-250T‡	T	20-14	100	500	8.96	7.00	5.60
RB14-250F§	U	16-14	100	500	15.68	12.25	9.80

Install with tools: *WT100M, WT1000, WT100M; †WT110M WT1000, WT111M; ‡WT110, WT1000; §WT100M, WT145A WT1000.

WRISTLOCK DISCONNECT

Install with WT110M or WT1000 hand tool.

B14-D	V	20-14	50	500	$11.52	$ 9.00	$7.20
T209W	. . .	(Insul.)	25	250	6.88	5.38	4.30
RA18D*	. . .	22-18	50	500	23.68	18.50	14.80
RB14D*	. . .	16-14	50	500	23.68	18.50	14.80

*Nylon insulated; install with WT100M, WT1000 or WT145A.

TERMINAL ASSORTMENT KITS

T. & B. No. PK-1002 Kit—Includes 100 each: 18RA-6FL, 18RA-8FL, 14RB-8FL, 14RB-10FL, 2RA-18X, 2RB-14X; 50 each: 2RC-10X, 10RC-10FL locking fork terminals; one WT1000 tool. In steel case. Net Each.......................**$62.00**

T. & B. No. PK-1003 Kit—Includes 100 each: 18RA-250F, 14RB-250F, 14RB-250T, A18-250, B14-250; 50 each: 10RC-250F, C10-250F, B14-250A disconnect terminals; one WT1000 tool. In steel case. Net Each.......................**$62.00**

T. & B. No. PK-1001 Kit—Consists of WT1000 tool and stee case. Net Each.......................**$13.40**

T. & B. No. PK-1000 Steel Case—Net Each.......... **5.40**

T. & B. No. 20WJ Kit—Contains 100 B14-10, 50 C10-10 terminals and 200 PT70 wire joints plus one WT111M hand tool. Net Each.......................**$18.50**

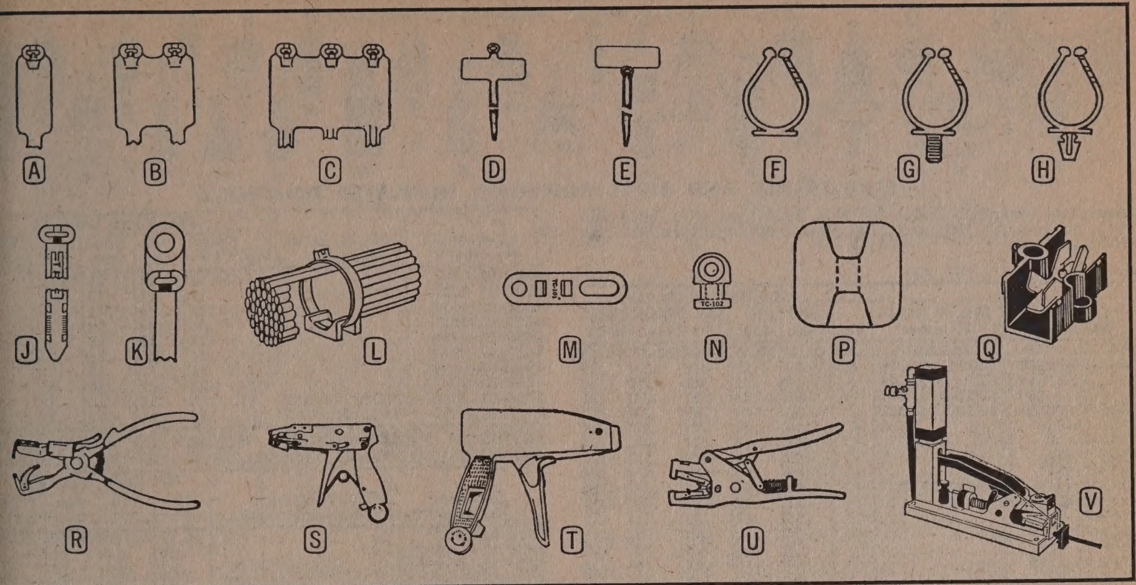
T. & B. No. 21WJ Kit—Contains 200 each of B14-10 terminals and PT70M wire joints; 100 each of C10-10, B14-10F and RB14-10 terminals; and 1 WT100M tool. Net Each.........**$42.80**

TERMINAL TOOLS

STA-KON® HAND TOOLS

T. & B. Number	For Use With Series	Net Each
WT1000	A, B, C, AB, PT, RA, RB, RC (Fig. Q)	$ 8.50
WT100M	A, B, C, AB, PT, RA, RB, RC	8.50
WT105M	RA, RB, RC splices except exp. insulation	9.20
WT161	A, B, C, PT	10.25
WT115A	D, E, F, G	34.00
WT111M	A, B, C, PT	7.50
WT110M	A, B, C	9.50
WT130A	22-10 wire for A, B and C	#
WT145A, C	RA, RB, RC, RAA, RBB, RCC	#
WT157N	2RZZ, 2RAA, 2RBB, 2RCC	#
WT445A	RA, RB	#
WT462	RZZ	#
WT540	Locking spade terminals	#

#Prices on application.



TY-RAP® IDENTIFICATION TIES

able ties with unobstructed rectangular area for marking.

T. & B. No.	Fig.	Dia. Range, In.	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
Y-546M	A	⅜–1¾	100	500	$15.84	$12.38	$ 9.90
Y-546MX*	A	⅜–1¾	100	500	17.44	13.63	10.90
Y-546MD	B	⅜–1¾	100	500	34.56	27.00	21.60
Y-546MT	C	⅜–1¾	100	500	59.36	46.38	37.10
Y-548M	A	¾–4	100	500	19.20	15.00	12.00
Y-551M	D	3/16– ⅝	100	500	7.84	6.13	4.90
Y-553M	E	1/16– ⅝	100	500	7.84	6.13	4.90

For outdoor use.

TY-RAP® LOCKING-ROUTING CLAMPS

lamp acts as a retainer during wire routing and as a positive lamp when desired. Available with adhesive base (Fig. **F**), stud ase (Fig. **G**) or snap-in base (Fig. **H**.) Anti-rotational peg available.

. & B. No.	Fig.	Size, In. I.D. x H. Less Mt.	Slots per Leg	Net per 1000, Lots of 1-99	100-499	500-999	1M Up
C-88	H	½ x 57/64	1	$100.00	$ 84.70	$ 77.00	$ 70.00
C-91	G	½ x 57/64	1	100.00	84.70	77.00	70.00
C-93	F	½ x 57/64	1	95.00	82.00	75.00	68.00
C-95	H	1 x 1 19/32	2	110.00	97.90	89.00	81.00
C-98	G	1 x 1 19/32	2	110.00	97.90	89.00	81.00
C-99	F	1 x 1 19/32	2	108.00	95.00	87.00	79.00
C-155	G	1½ x 2 19/64	3	200.00	171.50	165.00	150.00
C-158	H	1½ x 2 19/64	3	200.00	181.50	165.00	150.00
C-159	F	1½ x 2 19/64	3	198.00	179.00	163.00	148.00
C-161	G	2 x 3	3	300.00	271.70	247.00	225.00
C-164	H	2 x 3	3	300.00	271.70	247.00	225.00
C-165	F	2 x 3	3	298.00	269.00	245.00	223.00

TY-RAP® INSTALLATION TOOLS

or quick installation of cable ties as indicated.

T. & B. No.	Fig.	For use with TY-RAP cable tie No. TY-	Net Each
WT-196F	R	527M	$22.00
WT-195F	......	523M, 525M, 528M, 535M, 546M	22.00
WT-199	S	523M, 525M, 528M, 535M, 546M	*
WT-199M	T	523M, 525M, 524M, 526M, 528M, 533M, 546M	*

*Price on application.

SELF-ADJUSTING WIRE STRIPPERS

T. & B. No. ABMK-1 (Fig. U)—Hand wire stripper strips from #30 to #12 AWG wire without adjustments; no need to aim, as there is no stripping hole to locate. Strips insulation from one wire or in multiples, stranded or solid, aluminum or copper. Net Each.. **$28.00**

T. & B. No. ABMK-3—Similar to ABMK-1, but covers wire sizes #18 to #10 AWG. Net Each........................ **$36.00**

T. & B. No. ABMK-300 (Fig. V)—Bench-mounted wire stripper increases quality and reduces fatigue for production wire stripping from #22 to #10 AWG aluminum or copper wire. Pneumatic, foot-operated tool produces no-nick stripping in conductors ranging from single wire to multiconductor cables; performs end as well as midspan stripping. **Price on Application.**

TY-RAP® CABLE TIES

Fig. **J.** Self-locking nylon cable ties.

T. & B. No.	Dia. Range, In.	Unit Qty.	Std. Pkg.	Net per 100, Lots of Below Unit Qty.	Unit Qty.	Std. Pkg.
TY-523M	1/16– ⅝	100	1000	$ 4.00	$ 3.13	$ 2.50
TY-523MX*	1/16– ⅝	100	500	4.64	3.63	2.90
TY-524M	1/16–1⅛	100	1000	4.48	3.50	2.80
TY-524MX*	1/16–1⅛	100	500	4.80	3.75	3.00
TY-525M	1/16–1¾	100	1000	5.60	4.38	3.50
TY-525MX*	1/16–1¾	100	500	6.24	4.88	3.90
TY-5232M	1/16–2	100	500	4.48	3.50	2.80
TY-5242M	1/16–2	100	500	5.28	4.13	3.30
TY-526M	1/16–3	100	500	9.28	7.25	5.80
TY-527M	3/16–3½	50	500	18.56	14.50	11.60
TY-527MX*	3/16–3½	50	500	19.68	15.38	12.30
TY-5234M	1/16–4	100	500	7.52	5.88	4.70
TY-5244M	1/16–4	100	500	11.68	9.13	7.30
TY-528M	1/16–4	100	500	12.96	10.13	8.10
TY-528MX*	1/16–4	100	500	14.24	11.13	8.90
TY-529M	3/16–9	50	100	38.00	30.00	24.00
Fig. **K.** Self-locking nylon cable straps with mounting hole.						
TY-533M	1/16– ⅝	100	500	$ 6.08	$ 4.75	$ 3.80
TY-534M	1/16–1⅛	100	500	6.88	5.38	4.30
TY-554M	1/16–1⅛	100	500	7.20	5.63	4.50
TY-534MX*	1/16–1⅛	100	500	7.52	5.88	4.70
TY-535M	1/16–1¾	100	500	7.84	6.13	4.90
TY-535MX*	1/16–1¾	100	500	8.80	6.88	5.50
TY-538M	1/16–1¾	100	500	8.32	6.50	5.20
TY-540M	1/16–1¾	100	500	9.60	7.50	6.00
TY-537M	3/16–3½	50	500	24.80	19.38	15.50
TY-537MX*	3/16–3½	50	500	27.20	21.25	17.00

*For outdoor use.

TY-RAP® MOUNTING BASES

Nylon bases accommodate a variety of strap widths; for use with cable ties when tied wires are to be permanently mounted.

T. & B. No.	Fig.	Strap Width	Size, In. W. x L.	Mtg. Hole Size	Net per 1000, Lots of 100-400	500-900	1M 4900
TC-140	L	.091″	11/32 x 9/16	#4*	$ 25.60	$ 20.00	$ 17.60
TC-141	L	.184″	7/16 x 43/64	#6*	37.20	26.60	21.00
TC-142	L	.301″	9/16 x 59/64	#10*	55.00	50.00	45.00
TC-101	M	.184″	½ x 1 31/32	#10†	46.60	33.30	25.00
TC-111A	M	.184″	½ x 1 31/32	‡	120.00	93.80	75.00
TC-103	M	.301″	⅝ x 3 5/64	#10†	186.00	133.00	100.00
TC-103A	M	.301″	⅝ x 3 5/64	‡	496.00	388.00	310.00
TC-102	N	.184″	½ x ¾	#8†	37.20	26.60	20.00
TC-104	N	.091″	5/16 x 13/32	#5†	26.50	20.00	16.00
TC-342	P	.184″	1⅛ x 1⅛	§	90.00	80.00	73.00
TC-342A	P	.184″	1⅛ x 1⅛	#	112.00	100.00	92.00

*Pan head. †Screw. ‡Adhesive. §Epoxy cement. #Pressure sensitive.

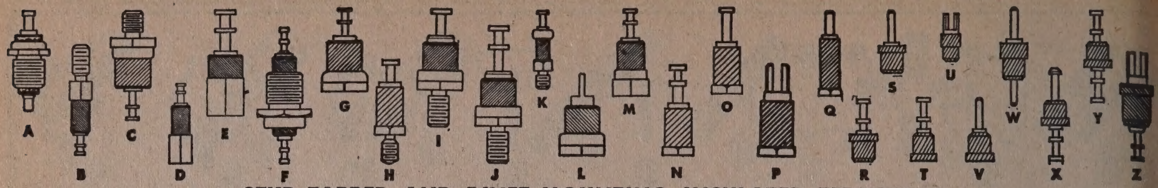
STA-KON® SOLDERLESS TERMINAL BLOCK (FIG. Q)

Snap-in modular terminal block features offset tab design. Each block has six .250″ x .032″ male disconnect-type tabs for solderless connection. Block sections are front- or rear-panel mounted with no separate mounting channel required. Can be stacked easily. Rugged, pliable nylon to withstand severe thermal and mechanical shock. For wires 22-10 AWG.

T. & B. No. MTB-1—Net per 100, Lots 1–249.......... **$27.50** Lots 250–499 **$26.13**; 500–999 **$24.75**; 1000–1999. **23.38**

CAMBRIDGE THERMIONIC CORPORATION
CAMBION®

INSULATED TERMINALS, HANDLES AND BOARDS



STUD-TAPPED AND RIVET-MOUNTING INSULATED TERMINALS

Insulating Material: Teflon for Nos. 1502 thru 1511, 1945 and 1947; phenolic for 1581 and 1795; diallyl for 4810 thru 4895; all others ceramic.

Cambion Number*	MIL-T-55155 Number	Fig.	Net Each, Lots of§ 50-99	100-499	500-999	1000-2499	2500-4999
1502-01-0519	FT20XA01	A	$0.60	$0.46	$0.43	$0.38	$0.35
1503-01-0519†	SE09(0/9)E01	B	.38	.29	.27	.24	.22
1504-01-0519†	SE09(0/9)E02	B	.38	.29	.27	.24	.22
1510-01-0519†	SE10(0/9)D01	D	.38	.29	.27	.24	.22
1511-01-0519†	SE10(0/9)D02	E	.38	.29	.27	.24	.22
1581-01-01	....	C	.38	.29	.27	.24	.22
1581-03-01	....	C	.38	.29	.27	.24	.22
1581-04-01	....	C	.38	.29	.27	.24	.22
1795-01-01	....	F	.66	.51	.47	.42	.39
1942-01/02-05‡	SE21X03/05	C	.41	.32	.29	.26	.24
1942-01/02-01‡	....	C	.41	.32	.29	.26	.24
1945-01-0519	....	C	.55	.42	.39	.35	.32
1945-02-0519	....	C	.55	.42	.39	.35	.32
1947-01-0519	....	G	.60	.46	.43	.38	.35
1947-02-0519	....	G	.60	.46	.43	.38	.35
1980-03-01	....	I	.40	.31	.28	.25	.24
1980-05-01	....	I	.40	.31	.28	.25	.24
1983-05-01	....	I	.40	.31	.28	.25	.24
1990-01-01	....	F	.79	.61	.56	.50	.47
1990-01-05	FT01XA01	F	.79	.61	.56	.50	.47
1992-05-01	....	I	.40	.31	.28	.25	.24
1994-01-01	....	J	.40	.31	.28	.25	.24
1994-02-01	....	J	.40	.31	.28	.25	.24
1995-01-01	....	I	.40	.31	.28	.25	.24
2012-01-05	FT01XA02	F	1.41	1.09	1.00	.89	.83
2012-01-01	....	F	1.41	1.09	1.00	.89	.83
2045-01/02-05‡	SE21XE01/2	C	.41	.32	.29	.26	.24
2045-01/02-01‡	....	C	.41	.32	.29	.26	.24
2255-01/03-05‡	SE22XE01/3	K	.41	.32	.29	.26	.24
2255-01/03-03‡	....	K	.43	.33	.31	.27	.25
2384-02-01	....	L	.60	.46	.43	.38	.35
2432-01/02-01‡	....	L	.51	.39	.36	.32	.30
3648-01/02-01‡	....	M	.41	.32	.29	.26	.24
3650-01/02-01‡	....	M	.41	.32	.29	.26	.24
4810-01-0516	....	B	.28	.19	.18	.16	.....
4814-01-0516†	SE20(0/9)D01	N	.31	.21	.20	.18	.....
4815-01-0516	....	N	.31	.21	.20	.18	.....
4820-01-0516†	SE20(0/9)D02	N	.36	.25	.23	.21	.....
4826-01-0516	....	N	.31	.21	.20	.18	.....

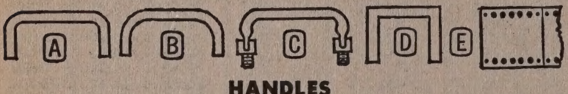
Cambion Number*	MIL-T-55155 Number	Fig.	Net Each, Lots of§ 50-99	100-499	500-999	1000-2499	2500-4999
4827-01-0516	....	N	$0.31	$0.21	$0.20	$0.18	.....
4838-01-0516†	SE19(0/9)E01	O	.31	.21	.20	.18	.....
4862-01-0516	....	P	.35	.24	.22	.20	.....
4863-01-0516	....	P	.35	.24	.22	.20	.....
4870-01-0516	....	H	.26	.18	.16	.15	.....
4872-01-0516	....	O	.28	.19	.18	.16	.....
4878-01-0516	....	O	.28	.19	.18	.16	.....
4884-01-0516	....	Q	.28	.19	.18	.16	.....
4894-01-0516†	SE18(0/9)E01	H	.26	.18	.16	.15	.....
4895-01-0516†	SE18(0/9)E02	H	.28	.19	.18	.16	.....

TEFLON• PRESS-MOUNT INSULATED TERMINALS

Easy mounting: Press into hole for permanent, rigid installation.

Cambion Number*	MIL-T-55155 Number	Fig.	Net Each, Lots of§ 50-99	100-499	500-999	1000-2499
4015-01-0519	....	R	$0.22	$0.15	$0.14	$0.13
4025-01/03-0519‡	....	R	.20	.14	.13	.12
4026-01/03-0519‡	....	R	.22	.15	.14	.13
4027-01/03-0519‡	....	R	.22	.15	.14	.13
4029-01-0519†	SE08(0/9)B01	S	.19	.13	.12	.11
4033-01/02-0519‡	....	T	.22	.15	.14	.13
4034-01/03-0519‡	....	T	.22	.15	.14	.13
4051-01-0519†	SE07(0/9)B01	R	.22	.15	.14	.13
4078-01-0519	....	R	.24	.17	.15	.14
4115-01-0519	....	R	.30	.21	.19	.17
4122-01-0519	....	U	.44	.31	.28	.26
4132-01-0519	....	U	.44	.31	.28	.26
4140-01-0519†	SE07(0/9)B02	R	.19	.13	.12	.11
4152-01-0519†	FT05(0/9)B01	S	.24	.17	.15	.14
4167-01-0519†	FT06(0/9)B01	V	.22	.15	.14	.13
4168-01-0519†	FT05(0/9)B02	S	.22	.15	.14	.13
4176-01-0519†	FT03(0/9)B02	W	.22	.15	.14	.13
4182-01/03-0519‡	....	X	.22	.15	.14	.13
4185-01-0519†	FT04(0/9)B01	X	.22	.15	.14	.13
4188-01-0519†	FT03(0/9)B01	W	.19	.13	.12	.11
4193-01-0519†	FT05(0/9)B03	S	.19	.13	.12	.11
4194-01-0519†	FT06(0/9)B02	V	.22	.15	.14	.13
4197-01-0519†	FT04(0/9)B02	X	.22	.15	.14	.13
4263-01-0519	....	Y	.36	.25	.23	.21
4267-01-0519	....	Z	.44	.31	.28	.26
4281-01-0519†	FT03(0/9)B03	W	.22	.15	.14	.13
4410-01-0319	....	W	.23	.16	.15	.13

*Suffix **-05** (e.g., 1502-01-**05**19) indicates electro-solder plating; **-01,** silver plating; **-03,** gold plating. †Suffix indicates standard color: **16,** blue for diallyl units; **19,** white for Teflon units. MIL-T-55155 dash numbers (**0**/**9**) indicate range of colors available. Colors other than standard may be made to order in minimum of 500 unit quantities: for diallyl, add **1c** each; for Teflon, add **2c** each. To order nonstandard colors, replace **19** or **16** final endings of Cambion No. with: **-11,** brown; **-12,** red; **-13,** orange; **-14,** yellow; **-15,** green; **-17,** violet; **-18,** gray. ‡Dash nos. (e.g., 1942-**01**-05) indicate varying stud lengths available; specify with order. §Min. std. pkg. is 50 pcs. •Reg. DuPont T.M.



HANDLES

Cambion Number	Fig.	Metal	Mtg. Ctrs., In.	Ht., In.	Net Each, Lots 10-99	100-499
1075-01-02	A	Brass*	4.562	1	$1.66	$1.45
1220-01-02	A	Brass*	1.25	1	1.57	1.37
1220-02-02	A	Brass*	2.0	1	1.66	1.45
1220-03-02	A	Brass*	3.0	1	1.73	1.51
1250-01-02	A	Brass*	2.0	1.312	1.39	1.22
1250-02-02	A	Brass*	3.0	1.312	1.49	1.30
1258-01-02	B	Brass*	.875	.520	.70	.61
1264-01-02	A	Brass*	3.0	1.312	1.49	1.30
1270-01-14	A	Alum.†	4.0	1.875	1.73	1.51
1278-01-14	C	Alum.†	2.0	1.500	1.23	1.08
1278-02-14	C	Alum.†	4.0	1.500	1.41	1.23
1280-03-02	A	Brass*	4.0	1.50	1.73	1.51
1290-02-14	A	Alum.†	3.0	1.50	1.11	.97
1290-03-14	A	Brass†	4.0	1.50	1.29	1.13
1900-01-02	D	Brass*	4.0	1.85	4.05	3.55
1965-01-02	A	Brass*	6.437	1.75	1.73	1.51
2062-01-02	D	Brass*	4.0	1.85	3.90	3.40
2111-01-02	B	Brass*	3.0	1.281	2.34	2.05
2111-02-02	B	Brass*	4.562	1.50	2.63	2.30
2111-03-02	B	Brass*	6.438	1.75	2.95	2.58
2111-04-02	B	Brass*	9.0	1.75	3.25	2.84
2385-01-14	B	Alum.†	3.0	1.281	1.74	1.52
2385-02-14	B	Alum.†	4.562	1.50	1.89	1.65
2385-03-14	B	Alum.†	6.438	1.75	2.09	1.83
2720-01-22	D	‡	4.0	1.459	5.60	4.90

*Nickel finish; for black oxide, order **-12** (prices on request).
†Black anodize; for semi-frost anodize at same price, order **-18.**
‡Stainless steel.

WRITE FOR FREE CAMBION CATALOG FOR COMPLETE LISTING OF ALL CAMBION PRODUCTS

ALL-SET TERMINAL BOARDS (FIG. E)

With terminals firmly mounted. Boards scribed into five sections. Each section has 10 terminals and 4 mounting holes in two rows except Nos. **1401-** which have only 5 terminals and two mounting holes in a single row. **Materials** are: **FBE,** cotton-fabric phenolic MIL-P-15035B; **GEE,** epoxy glass-cloth, MIL-P-18177B; **NPG,** nylon-fabric phenolic MIL-P-15047B. Min. order two.

Cambion Number	Mat.	Size, Inches Th. x Width	Net Each, Lots of 2-9	10-99	100-499
1330-25-01-02	GEE	1/16 x 1 1/8	$5.45	$3.90	$3.45
1401-35-01-01	FBE	3/32 x 1/2	2.12	1.53	1.34
1401-35-01-02	GEE	3/32 x 1/2	3.30	2.38	2.08
1402-35-01-01	FBE	3/32 x 2	4.65	3.35	2.93
1402-35-01-02	GEE	3/32 x 2	7.60	5.45	4.80
1402-35-01-03	NPG	3/32 x 2	5.55	4.00	3.50
1402-45-01-01	FBE	1/8 x 2	4.65	3.35	2.93
1402-45-01-02	GEE	1/8 x 2	9.55	6.90	6.00
1402-45-01-03	NPG	1/8 x 2	5.55	4.00	3.50
1403-35-01-01	FBE	3/32 x 2 1/2	4.85	3.50	3.05
1403-45-01-01	FBE	1/8 x 2 1/2	4.85	3.50	3.05
1404-35-01-01	FBE	3/32 x 3	5.05	3.65	3.20
1404-45-01-01	FBE	1/8 x 3	5.05	3.65	3.20
1405-35-01-01	FBE	3/32 x 1 1/16	4.25	3.05	2.68
1405-25-01-01	FBE	1/16 x 1 1/16	4.25	3.05	2.68
1405-25-01-02	GEE	1/16 x 1 1/16	6.60	4.75	4.15
1406-35-01-01	FBE	3/32 x 1 1/2	4.45	3.20	2.80
1406-45-01-01	FBE	1/8 x 1 1/2	4.45	3.20	2.80

FERRULES

Cambion Number	Metal	For Handle	Net Each, Lots of 20-99	100-499	500-999
1211-01*	Brass	1280 Series	$0.15	$0.13	$0.13
1212-01†	Alum.	1290 Series	.31	.27	.26
1952-01*	Brass	1220 Series	.17	.15	.14
1953-01†	Alum.	1230 Series	.31	.27	.26
1954-01*	Brass	1075, 1965, 1250, 1252, 1254	.17	.15	.14
1988-01*	Brass		.23	.20	.19
1989-01†	Alum.	1270, 71 Series	.31	.27	.26

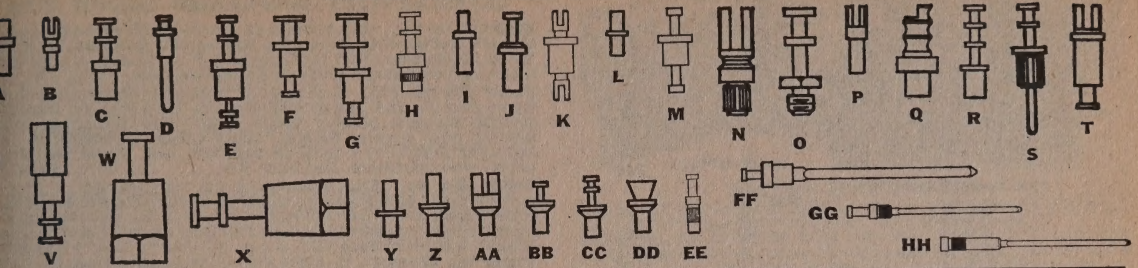
*Add suffix **-02** for nickel finish; **-12** for black oxide. †Add suffix **-14** for black anodize; **-18** for semi-frost anodize.

CAMBRIDGE THERMIONIC CORPORATION

CAMBION®

Solder Terminals, Wire-Wrap† Pins and Swaging Tools

SOLDER TERMINALS, WIRE-WRAP† PINS



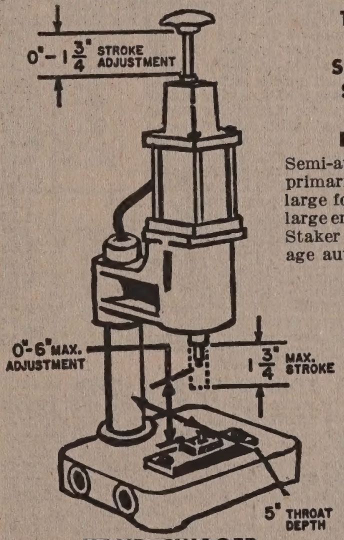
AMBION offers a full line of all styles and sizes of standard lder terminals: Single and double turret, slotted, castellated, rked and others. The most popular types are listed. Prices own are for the following standard platings: Plating code suffix 1, silver; **-04**, electro-tin; **-05**, electro-solder; **-01-05**, both silver d electro-solder (prices of other platings available on request). rder by CAMBION Type No. with correct dash number for ard thickness desired, followed by plating code suffix.

sh No. Suffix	Board Thickness	Dash No. Suffix	Board Thickness	Dash No. Suffix	Board Thickness
-11	1/64″	-3	3/32″	-6	¼″
-1	1/32″	-4	⅛″		
-2	1/16″	-5	3/16″		

ambion Type umber	Plating Code Suffix	Fig.	Mtg. Dia., In.	Description	Net per 1000, Lots 1000-4999	5000-9999	10M-24999
15-2/4	-04	A	.053	Taper recep.	$43.60	$40.80	$35.70
18-1/2	-01	B	.047	Thru hole	24.60	23.00	20.10
19-1/3	-01	B	.047	Thru hole	27.40	25.60	22.40
25-2	-01	B	.112	Slotted	88.90	83.10	72.70
26-1/4	-01 or -05	C	.090	Turret	19.30	18.10	15.80
31-2	-01	D	.072	Turret	39.80	37.20	32.60
32-1/2	-01	D	.062	Turret	24.60	23.00	20.10
35-2/3	-01 or -05	E	.125	Feed thru	33.90	31.70	27.70
41-2/3	-01	F	.090	Turret	28.60	26.70	23.40
42-2/3	-01	G	.090	Turret	36.50	34.10	29.90
43-2/4	-01	E	.090	Turret	36.50	34.10	29.90
92-1	-05	H	.099	Knurled tur., self-piercing	20.30	19.00	16.60
131-2	-04	I	.060	Pin	26.90	25.10	22.00
132-2/3	-04	I	.060	Pin	26.90	25.10	22.00
136-2	-04	I	.060	Pin	36.00	33.70	29.50
245-2/3	-01	J	.112	Turret	27.20	25.40	22.20
384-1/4	-05	K	.116	Dbl. slot ends thru-hole	64.70	60.50	52.90
457-1/4	-01	J	.078	Turret	17.00	15.90	13.90
459-2	-05	L	.039	PC eyelet thru hole	23.50	22.00	19.20
460-2	-05	L	.046		23.50	22.00	19.20
461-2	-05	L	.050		23.50	22.00	19.20
462-2	-05	L	.059		23.50	22.00	19.20
463-1/2	-01-05	M	.116	Domed Turret	24.00	22.50	19.70
464-2/4	-05	M	.116	Tur. MIL-T-55155, SE13-XC04, 5, 6	24.00	22.50	19.70
548-1/5	-01	C	.112	Turret	24.40	22.80	20.00
558-1/5	-01	C	.090	Turret	17.40	16.30	14.20
578-2/4	-01	N	.150	Knurled	48.00	44.90	39.20
579-2/4	-01	G	.202	Feed thru	53.50	50.00	43.80
582-2	-01	O	4-40	Round base	52.60	49.20	43.00
597-1/5	-01	C	.090	Turret	19.30	18.10	15.80
604-2	-01	J	.062	Turret	20.60	19.30	16.90
724-1/4	-01-05	C	.112	Turret	27.80	26.00	22.70
783-4	-01	N	.135	Knurled	76.80	71.90	62.90
784-2/4	-01	N	.112	Knurled	43.40	40.50	35.50
785-1/4	-01	P	.062	Forked	23.30	21.80	19.10
797-1/4	-01	J	.110	Turret	26.60	24.90	21.80
798-2	-01	C	.135	Turret	40.20	37.60	32.90
941-2	-01	P	.071	Thru hole	23.70	22.20	19.40
969-1/5	-01	P	.112	Thru hole	34.70	32.50	28.40
979-2/4	-01	Q	.112	Half slot	40.60	37.90	33.20
000-1/4	-01	G	.090	Feed thru	26.30	24.60	21.50
004-1/4	-01	E	.090	Feed thru	25.80	24.10	21.10
027-1/4	-01	J	.071	Thru hole	23.30	21.80	19.10
034-1/4	-01	C	.090	Turret	27.60	25.80	22.60
040-1/4	-01-05	E	.072	Turret	28.30	26.40	23.10
041-1/3	-01-05	J	.072	Turret	17.40	16.30	14.20
042-1/2	-01-05	F	.072	Turret	18.90	17.60	15.40
043-1/4	-01-05	C	.072	Turret	18.00	16.80	14.70
044-1/4	-01-05	G	.072	Turret	19.90	18.60	16.30
051-1/2	-01	O	4-40	Hex base	58.90	55.10	48.20
080-1/4	-01	R	.090	Turret	24.30	22.80	19.90
081-1/4	-01	S	.120	Knurled	36.70	34.30	30.00
084-2/4	-01	R	.112	Turret	47.40	44.30	38.70
085-1/4	-01	J	.047	Turret	14.80	13.80	12.10
086-2/3	-01	T	.122	Thru hole	46.10	43.10	37.70
089-1/4	-01	B	.047	Thru hole	30.00	28.00	24.50
100-1/3	-01	J	.062	Thru hole	23.30	21.80	19.10
2113-4	-04	C	.053	.061 top taper receptacle	46.60	43.60	38.10
2114-3	-04	C	.053		59.70	55.80	48.80
2115-2/3	-04	F	.053		77.70	72.60	63.60
2141-2/4	-01	F	.116	Thru hole	48.90	45.70	40.00
2154-1	-01	U	.047	Half turret	49.90	46.70	40.80
2186-2/4	-04	J	.053	Taper recep.	57.80	54.10	47.30
2187-1/2	-05	B	.032	Slotted	28.00	26.10	22.90
2345-3	-01	V	.125	Term.-spacer	78.50	73.40	64.20
2380-1	-05	W	4-40	Tapped mt.	101.20	94.60	82.80
2381-1	-05	X	4-40	Tapped mt.	99.70	93.20	81.60

Cambion Type Number	Plating Code Suffix	Fig.	Mtg. Dia., In.	Description	Net per 1000, Lots 1000-4999	5000-9999	10M-24999
2750-2/4	-05	Y	.060	PC pin	$24.00	$22.50	$19.70
2751-2/4	-05	Z	.060	PC pin	24.00	22.50	19.70
2752-2/4	-05	AA	.060	PC thru hole	35.60	33.30	29.10
2753-2/3	-05	BB	.060	PC turret	24.00	22.50	19.70
2754-1/4	-05	CC	.060	PC turret	24.00	22.50	19.70
2755-2/3	-05	DD	.060	PC thru hole	24.00	22.50	19.70
2926-2	-05	AA	.060	PC flared	59.80	55.90	49.00
3653-1/3	-01-05	C	.062	Turret	19.00	17.80	15.60
3747-1	-04	EE	.056	Turret‡	14.20	13.20	11.60
3748-2	-04	FF	.090	.045 sq. swage mt.†	71.90	67.20	52.30
3848-1	-03*	GG	.056	.025 sq. feed-thru†	94.60	88.40	77.40
3854-1	-03	HH	.058	.025 sq. press mt.†	97.40	91.10	79.70
3854-1	-04	HH	.058		80.80	75.50	66.10
3866-1	-03*	GG	.058		78.90	73.80	64.60
7336-1/4	-05	BB	.060	PC flared; red lead brass/ ASTMB-140	23.90	22.30	19.50
7337-1/4	-05	CC	.060		24.50	22.90	20.00
7338-1/4	-05	AA	.060		39.10	36.60	32.00

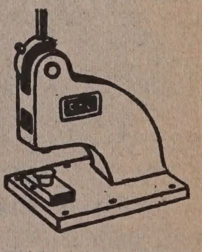
*Available with gold plating only. †Wire-wrap (Reg. Gardner-Denver TM). ‡Knurled mt. Additional quantities available on request. **Minimum standard package is 100 pieces.**



TYPE 3804-7 SOLENOID SWAGER WITH SWEEPGUARD AND FOOT SWITCH

Semi-automatic staker designed primarily for requirements too large for hand swaging, yet not large enough to require a Hopper Staker machine. A variable voltage autotransformer of at least 5 ampere size, 50–60 Hz, 115 volts AC, required but not furnished or included in price. Size, 25″ H. (approximate) x 10″ square base. **Cambion Type 3804-7 Solenoid Swager with Sweepguard and Foot Switch**—

Net Each . . **$595.00**



HAND SWAGER

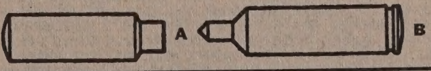
Designed for quick, uniform swaging of solder terminals on terminal boards. Adjustable to a wide range of terminal board thicknesses. Swaging in place as far as 1⅞″ from board edge. Less tooling.

Cambion Type 3802-1—2½″ throat.

Net Each. **$49.50**

Cambion Type 3803-1—5″ throat.

Net Each. **$79.50**



SWAGING TOOLS

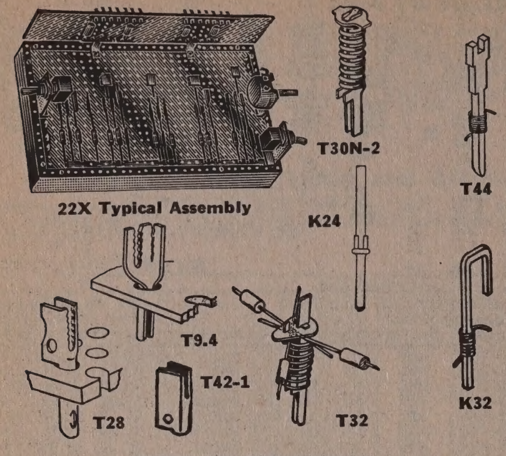
ANVILS (FIG. A) Cambion Number	Cambion Number	Net Each	PUNCHES (FIG. B) Cambion Number	Cambion Number	Net Each
6401	6419	$8.00	6601	6618	$8.00
6402	6420	8.00	6604	6619	8.00
6404	6430	8.00	6606	6629	8.00
6412	6447	8.00	6611	6654	8.00
6418	. . . .	8.00	6617	6657	8.00

Cambion No. 6098 Adapter—For converting to hand set use.

Net Each **$8.00**

SEND FOR COMPLETE CAMBION CATALOG FOR FULL DATA ON ALL CAMBION PRODUCTS

Vector Terminals and Kits



PUSH-IN TERMINALS

Zip push-in terminals push into appropriate size holes and hold without staking (may be staked if required). Use for experimental prototype or production applications. For faster insertion in circuit boards, order insertion tools.

Vector Number	Fits Hole	Description	Net Pkg.
T9.4 Pkg. 100	.093	Brass brite tin plated	$ 1.42
T9.4 Pkg. 1000	.093	Brass brite tin plated	10.16
T28 Pkg. 100	.062	Beryl. copper, brite tin plated	1.61
T28 Pkg. 1000	.062	Beryl. copper, brite tin plated	11.44
T28S Pkg. 100	.062	Beryl. copper, silver plated	1.72
T28S Pkg. 1000	.062	Beryl. copper, silver plated	13.51
K24A Pkg. 50	.042	Phospher bronze, nickel gold plated	1.80
K24A Pkg. 1000	.042	Phospher bronze, nickel gold plated	23.35
K26A Pkg. 50	.025	Phospher bronze, nickel gold plated	1.29
K26A Pkg. 1000	.025	Phospher bronze, nickel gold plated	14.92
K32 Pkg. 100	*	Phosphor bronze "J" pin	1.69
K32 Pkg. 1000	*	Phosphor bronze "J" pin	12.65
T30-2 Pkg. 10	.093	Brass nickel, silver plated	1.13
T30-2 Pkg. 100	.093	Brass nickel, silver plated	8.46
T30-2 Pkg. 1000	.093	Brass nickel, silver plated	60.32
T32 Pkg. 10	.093	Brass nickel, silver plated	1.63
T32 Pkg. 100	.093	Brass nickel, silver plated	11.94
T32 Pkg. 1000	.093	Brass nickel, silver plated	88.05
T32-1 Pkg. 10	.062	Brass nickel, silver plated	1.63
T32-1 Pkg. 100	.062	Brass nickel, silver plated	11.94
T32-1 Pkg. 1000	.062	Brass nickel, silver plated	88.05
T42-1 Pkg. 100	.042	Beryl. copper, tintilate plated	1.82
T42-1 Pkg. 1000	.042	Beryl. copper, tintilate plated	11.70
T44 Pkg. 100	.042	Phosphor bronze, tintilate plated	3.26
T44 Pkg. 1000	.042	Phosphor bronze, tintilate plated	23.63
A13	.....	Insertion tool for T44 type	1.69
P91A	.....	Insertion tool for T28 type	1.50
P92A	.....	Insertion tool for T30 type	.50
P122B	.....	Insertion tool for T9.4 type	1.60
P136	.....	Insertion tool for T32 type	1.75
P149	.....	Insertion tool for T42 type	1.49

*Fits .025" square or .042" dia. hole.

PHOTORESIST ETCHED CIRCUIT KITS

Designed to produce one or more sharply detailed etched circuit boards from an easily made master positive, in one hour. Positive artwork is used; no negative to be made, no photography required. Simply apply transfer patterns to Mylar* film for master positive, place on pre-photosensitized Vectorbord® and expose to suitable light source. High speed etching with virtually no under-cutting is provided by vigorously shaking board and chemicals in closable plastic box. *Reg. DuPont TM.

Vector Kit No. 32XA—Contains five copper clad, photoresist coated boards; two adhesive-backed artwork sheets with IC and transistor patterns; "rub-on" pattern for pads, lines, tabs; plastic box; etchant; developer; glass plate; 3 sheets Mylar; two sheets grid paper; tools. Net Each Kit.................... **$24.95**

Vector Kit No. 32X—Contains two boards; cut and peel sheet; transfer patterns; developer; etchant; touch-up resist; Mylar sheet; developing tray; glass plate. Net Each Kit...... **$8.95**

EXPERIMENTERS' ETCHED CIRCUIT KITS

Permits making quick, easy etched circuits without fancy art work, negatives or long waiting. Low cost, uncomplicated preliminary circuits can be made at any desk at a low cost. Contains everything needed, except hot water. Simply sketch the circuit on layout paper grid; apply etch resist on copper-clad board using resist ink or tape; place board in plastic bag; and, add hot water—in 45 minutes the circuit is ready to be washed and used. Board can be cut, drilled or punched as needed.

Vector Kit No. 27X—With two XXXP phenolic boards, 4½" x 6½", copper clad on one side—one with .062" holes on 0.2" centers, one unpunched; 1 sheet resist circles; 1 sheet resist tape strips; 2 bags of etchant; resist ink; 3 sheets 8½" x 11" layout paper; and full instructions. Net Each Kit...... **$6.26**

Vector Kit No. 27XA—Similar to 27X, except built around "Vectoresist", rub-on transfer resist. Simply apply resist pattern to board by rubbing back of 10" x 15" sheet having assortment of varying width lines, circles, dots and connector pattern with three groups of 21, 22 and 22 contacts spaced .156" on centers. Boards, etchant same as 27X. Net Each Kit........... **$6.26**

EXPERIMENTERS' INTEGRATED CIRCUIT KITS

Designed for fast, easy hookup of nearly all IC packages and/or discrete components. Mounting surface is a pre-punched Micro-Vectorbord® with .042" dia. holes on 0.1" grid pattern, supported by 2" high extruded aluminum Frame-Loc rails.

Vector Kit No. 29X—Includes 4.5" x 13.9" P pattern board and frame plus 14- and 16-pin DIP sockets, TO-5 sockets, transistor sockets, flatpack adapter plates, T42-1 ZIP terminals, K24C inboard pins, adapter wafers, "Daisy Chain" patchboards, DIP extractor tool, P149A terminal insertion tool, bus strips, layout paper, wire, hardware. Net Each Kit................ **$59.75**

Vector Kit No. 30X—Breadboard kit includes 8½" x 4½" P pattern board plus bus strips, 100 T42-1 Micro-Klip terminals and P149 installation tool, 50 K32 "J" terminals, two sheets grid layout paper, adhesive to mount DIP sockets, bare and insulated hookup wire. Net Each Kit........................ **$10.75**

Vector Kit No. 31X—Includes 4½" x 17" board with all hardware in 30X kit plus 50 K24C inboard pins, two B20F pot and switch mounting brackets, screws, lockwashers and nuts, six sheets of grid layout paper. Net Each Kit...................... **$17.50**

Vector Kit No. 30XA—Includes 8½" x 4½" board, 100 T42-1 Micro-Klip terminals and tool. Net Each Kit.......... **$4.50**

EXPERIMENTERS' CHASSIS KITS

Save set-up time on experimental circuitry. Chassis, punched boards and solderless clips for quick set-up of circuits with simple hand tools. Some kits also permit soldering for permanent use.

Vector Kit No. 25X—Punched phenolic deck 8½" x 17" x 3/32" on wood frame has .093" holes spaced .265" on grid. Employs T30N-2 spring clip for quick, solderless connection; clip holds up to 6 leads with low contact resistance. With tube and transistor sockets. See parts list, below, for kit contents. Net Each Kit... **$22.28**

Vector Kit No. 22X—Punched phenolic deck 4 13/16" x 8½" x 3/32" mounted on aluminum channels. Employs T9.4 push-in terminals for soldered component connection. Transistor sockets and flexible array of parts supplied (see listing, below) for widest applications. Net Each Kit.................................... **$12.38**

Vector Kit No. 22XA—Professional size version of 22X. Extruded aluminum Frame-Loc chassis, 17" x 8½" x 2"; Vectorbord deck with 3/32" holes on .265" centers. Eight transistor sockets, 124 Zip push-in terminals, 100 springclips, 18 U-clips, 14 patchcords, etc. (Contents not listed below). Net Each Kit............ **$28.71**

Vector Kit No. 21X—Same as 22X, but board 4 13/16" x 17" x 3/32" and with tube sockets. See listing, below, for parts supplied. Net Each Kit.................................... **$17.55**

Vector Kit No. 20X—Same as 22X, but supplied with tube sockets only. See parts listing, below, for contents. Net Each Kit.. **$6.89**

KIT PARTS AND REPLACEMENT PRICES

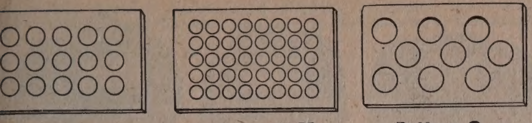
Vector Number	Description	Qty. in Kit No.				Net Each
		20X	21X	22X	25X	
32AA18	4 13/16"x8½" phen. board	1	....	1	....	$0.91
64AA18	4 13/16"x17" phen. board	....	1	....	....	1.75
64AA32	8½"x17" phen. board	....	....	....	1	3.00
....	Random "A" Vectorbords	....	2	2	2	......
SR2-85-093	8½"x2" chassis rails, pair	1	....	1	1	2.10
SR2-48-093	Same, 4.8"x2", pair	1	1	1	....	1.60
SR2-170-093	Same, 17"x2", pair	....	1	....	1	3.50
BR50	Corner bracket for rails	18	18	18	18	.89§
SC4-2	Self-tap rail screws	8	8	8	8	1.25§
RA-2	Power transistor socket	....	2	2	2	.12
RA4.5	Univ. transistor socket	....	4	6	....	.38
RA4.51	Same, with pigtails	....	....	....	4	.67
R72J	7-pin min. socket	3	3	....	3	.45
R92J	9-pin socket	3	3	....	3	.55
T9.4	Push-in solder terminal	75	100	75	100	1.42#
T30N-2	Push-in solderless term.	20	50	20	90	7.93#
T32A	Side-entry spring clip	....	....	....	10	11.31#
T64	Spring for T30N-2	....	18	12	18	1.38§
K6.09	9" patch cord	....	8	6	10	3.58‡
T57	.20"x16" punched bus	....	3	....	3	2.17†
T58	.20"x8" punched bus	2	3	....	....	1.33†
•1507/.313	¼" O.D. x .313" spacer	6	....	....	6	.04
•1513/.500	Same, .500" lg.	6	6	....	6	.04
•1114/.406	3/16" O.D. x 13/32" spacer	....	16	16	16	.04
^07/.750	2-56x¾" screws, rd. hd.	6	18	15	....	1.25§
^01/.250	2-56x¼" screws, rd. hd.	6	....	....	10	1.25§
▪14/.875	2-56x⅞" screws, flat hd.	....	....	....	24	1.25§
x09/.313	#4x5/16" self-tap rd. hd. scr.	12	16	15	16	1.25§
x30/.750	Same, ¾" lg.	6	12	....	12	1.25§
NT-4-1	#4 sheet metal nuts	....	....	....	12	.95‡
NT-2-1	2-56 thd. steel nuts	12	18	24	36	.95‡
HD2.1	Term. retainer clip	....	10	10	10	1.25§
520	Wafer for 7-pin socket	....	....	....	3	.17
515	Wafer for 8-pin socket	....	....	....	2	.20
516	Wafer for 9-pin socket	....	....	....	3	.18
P92A	Install tool for T30N-2	1	1	1	1	.50
P122B	Same, but for T9.4 term.	....	1	....	1	1.60
2323A-20/5	50-ft. #20 bare tinned wire	....	1	1	1	1.50
2323A-20/6	20-ft. #20 insul. wire	....	1	1	1	1.25
K7	Thumb pins	....	4	4	10	2.95‡
0079-02/5	Plastic small parts box	1	1	1	2	.55
R173A-1	"A" 8½"x17" layout paper	....	3	....	3	2.50§
R173A	Same, 8½"x11"	3	....	3	....	2.00§
B20F	L-type switch, pot. bkts.	....	2	2	2	.75*
B20G	Same, Z-type	....	....	2	2	.95*
B25	½"x⅝"x7/16" Z-bracket	....	6	4	4	.75†
R393A-1	Number/letter transfers	....	....	....	1	2.50

Package of: *4; †10; ‡25; §50; #100. **Add Prefix When Ordering:** •0865-(e.g., **0865-1507/.313**); ^0111-221-; ▪0111-211-; x0111-424-.

QUANTITY PRICES AVAILABLE ON REQUEST

Vector Boards and Cases

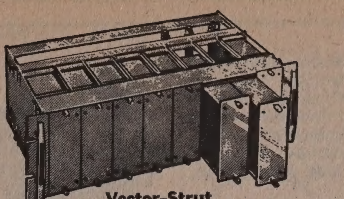
VECTORBORD



Patterns A, P

Patterns H, M

Pattern G



Vector-Strut

Multi-Mod

VECTORBORD® PUNCHED TERMINAL BOARD

vailable in tan XXXP phenolic (MIL-P-3115B), ivory epoxy per (MIL-P-22324) or G-10 epoxy glass (MIL-P-18177), with epunched holes for breadboards and prototypes. May be sawed, illed or punched. Copper clad types (2 oz.) may be etched. **ttern "A"**: 0.091″ holes on 0.265″ centers. **Pattern "F"**: 0.062″ les on 0.200″ centers. **Pattern "G"**: 0.062″ holes on 0.200″ nters, staggered. **Pattern "H"**: 0.062″ holes on 0.100″ x 0.100″ acing. **Pattern "B"**: .062″ holes on 0.188″ centers.

ector No.	Pattern	Size, In.	No. of Holes	Net Each
XXXP PHENOLIC				
A9	A	8.51 x 2.41 x 1/16	32 x 9	**$0.55**
AA9	A	8.51 x 2.41 x 3/32	32 x 9	**.64**
AA18	A	8.51 x 4.80 x 3/32	32 x 18	**.91**
F22C1	F*	8.51 x 4.5 x 1/16	42 x 22	**1.13**
F22C2	F†	8.51 x 4.5 x 1/16	42 x 22	**1.49**
B30	B	8.51 x 5.69 x 1/16	45 x 30	**.90**
B30	B	16.97 x 5.69 x 1/16	90 x 30	**1.97**
A18	A	16.99 x 4.80 x 1/16	64 x 18	**1.36**
AA18	A	16.99 x 4.80 x 3/32	64 x 18	**1.75**
AA32	A	16.99 x 8.51 x 3/32	64 x 32	**3.00**
EPOXY PAPER				
2AA18EP	A	8.51 x 4.80 x 3/32	32 x 18	**$1.72**
4AA18EP	A	16.99 x 4.80 x 3/32	64 x 18	**3.20**
4AA32EP	A	16.99 x 8.51 x 3/32	64 x 32	**5.66**
5F24EP‡	F	16.99 x 4.80 x 1/16	85 x 23	**2.37**
5G24EP	G	16.99 x 4.80 x 1/16	2(85 x 23)	**2.37**
5G42EP	G	16.99 x 8.51 x 1/16	2(85 x 42)	**4.11**
EPOXY GLASS				
2A18WE	A	8.51 x 4.80 x 1/16	32 x 18	**$2.07**
2G22WEC1	G*	8.5 x 4.5 x 1/16	2(42 x 22)	**2.76**
2G22WEC2	G†	8.5 x 4.5 x 1/16	2(42 x 22)	**3.02**
2G24WE	G	8.51 x 4.8 x 1/16	2(42 x 23)	**2.05**
4A18WE	A	16.99 x 4.80 x 1/16	64 x 18	**4.06**
5F42WEC1	F*	16.99 x 8.51 x 1/16	85 x 42	**8.64**
5G24WE	G	16.99 x 4.8 x 1/16	2(85 x 23)	**4.12**

Copper clad, 1 side. †Copper clad, 2 sides. ‡Irregular borders.

MICRO-VECTORBORD® PUNCHED INSULATING BOARD

re-punched epoxy glass or epoxy paper insulating board in hoice of 1/32″ or 1/16″ thickness. P pattern is ideal for dual-in-line rcuit packages, sockets and other microminiature modules. EP ype meets MIL-P-22324. Epoxy glass meets MIL-P-18177. C1 ypes have 2 oz. copper one side; C2 has 2 oz. copper two sides. **attern "P"**: Has .042″ dia. holes on 0.1″ grid. **Pattern "M"**: 025″ dia. holes on .05″ grid. **Other sizes and thicknesses available n request.**

Vector Number	Pat-tern	Size, Inches W. x L. x Th.	No. of Holes	Net Each, Lots of		
				1-19	20-99	100-199
9P19-032	P	2 x 6 x 1/32	59 x 19	$ 0.89	$ 0.80	$0.75
9P44-032	P	4½ x 6 x 1/32	59 x 44	1.61	1.45	1.35
4P44-062EP	P	4½ x 6½ x 1/16	64 x 44	1.69	1.52	1.42
4P44-062EP	P	4½ x 8½ x 1/16	84 x 44	2.10	1.89	1.47
69P44-062	P	4½ x 17 x 1/16	169 x 44	4.36	3.92	3.66
69P44-062EP	P	4½ x 17 x 1/16	169 x 44	3.83	3.45	3.22
69P84-062	P	8½ x 17 x 1/16	169 x 84	7.99	7.15	6.71
69P44-062C1	P	4½ x 17 x 1/16	169 x 44	5.89	5.30	4.95
69P84-062C2	P	8½ x 17 x 1/16	169 x 84	11.70	10.53	9.83
6M38-032	M	2 x 4 x 1/32	76 x 38	.89	.80	.75
36M76-032C2	M	4 x 17 x 1/32	336 x 17	7.14	6.43	6.00

BUS STRIP

repunched narrow brass tinned strip mounts to prepunched oards with Zip push-in terminals or screws.

Vector No.	Length	Description	Net, Pkg. 10
T57	16″	.093″ holes spaced .265″	**$2.17**
T58	8″	.093″ holes spaced .265″	**1.33**
T104	17″	.062″ holes spaced .2″	**1.46**
T107	14″	.042″ holes spaced .1″	**2.89**

FLAT PACK IC ADAPTERS

poxy paper wafer (1/16″) with copper etched pattern on .05″ pacing. Provide easy mounting of 14-pin flat pack IC's to P attern Micro-Vectorbord. Micro-Klip terminals.

Vector No.	Description	Net Each
FPA-14	Pkg. of four wafers, 1″ x 1.6″	**$2.10**
FPA-14-1	Single wafer, 4.8″ x 4.5″; 12 pads	**3.36**

TUBE BASE SHIELDS

or mounting above socket as base for conventional bayonet type ube shields. **S9.17**, commercial type. No. **S7.22** and **S9.22** are military.

ector No. S7.22—7-pin, nickel-plated brass. Net Each. **$0.18**
ector No. S9.17—9-pin, cadmium iridited steel. Net Ea... **.07**
ector No. S9.22—9-pin, nickel-plated brass. Net Each.... **.19**

VECTOR-STRUT CAGES

Adjustable aluminum frames mount in 19″ racks and accommodate "EFP" extended front panel cases (listed below).

Vector No. CA-52-HE-89 Cage Kit—5¼″ high with 9″ long sidewalls, cross members (triple T struts) and brackets, plus necessary assembly hardware. Case guides and EFP modules are ordered separately. Net Each.............................**$19.90**

Vector No. CMG-7 Guide Kit—Case guides and hardware to mount eight 2″ wide modules in above. Net Each......**$15.82**

Vector No. CMG-4 Guide Kit—Case guides and hardware to mount ten 1.6″ wide modules. Net Each..............**$18.33**

Vector No. CMA-3-20 Cage—Completely assembled, for eight 2″ wide modules. Consists of CA-52-HE-89 and CMG-7 kits above, assembled. Net Each............................**$49.24**

Vector No. CMA-3-16 Cage—Completely assembled, for ten 1.6″ wide modules. Net Each............................**$53.54**

Vector No. EFP-204-6.6 Module—Aluminum module case, 2″ wide, fits CMA-3-20 cage above (or CA-52-HE-89 with CMG-7 kit). Accepts 4½″ x 6½″ circuit cards completely inside, in nine extruded grooves. Slide-out side covers for easy access, front and rear panels. Net Each............................**$6.07**

Vector No. EFP-164-6.6 Module—As above, but 1.6″ wide for CMA-3-16 cage; six grooves. Net Each...............**$5.90**

Vector-Strut Cages and EFP modules are available in many other sizes; write for information and prices.

MULTI-MOD CASES

Sleek and sturdy aluminum cases have .075″ wide slots on .150″ centers across case width for screw-free mounting of circuit cards or shielding panels. Easily removable fourth side permits side cover to slide off for quick access. Clear anodized; colors available.

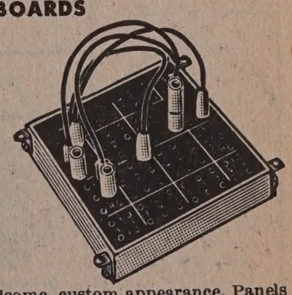
Vector No.	Size, Inches			For Circuit Card Size, In.	Net Each
	Width	Length	Height		
W16-12-12B	1.6	1.21	1.21	1.10 x 1.10	**$2.65**
W16-31-31B	1.6	3.10	3.10	2.98 x 2.98	**2.69**
W20-15-15B	2.0	1.51	1.51	1.40 x 1.40	**3.36**
W20-28-46B	2.0	2.85	4.61	2.73 x 4.50	**2.86**
W20-66-46B	2.0	6.61	4.61	4.50 x 6.50	**3.57**
W30-66-46B	3.0	6.61	4.61	4.50 x 6.50	**4.35**
W30-86-46B	3.0	8.61	4.61	4.50 x 8.50	**4.85**
W45-66-46B	4.5	6.61	4.61	4.50 x 6.50	**5.69**
W45-86-46B	4.5	8.61	4.61	4.50 x 8.50	**6.42**
W45-100-46B	4.5	10.00	4.61	4.50 x 9.88	**7.51**
FT-3	Rubber bumper feet (package of 8)				**.75**

VECTOR PAK CASES

Extruded aluminum cases designed to accommodate cards and be used as a plug-in unit. Removable base plate is flat .062″ stock; may be clotted to pass circuit board plug tips. Sides slide open without removing base. Brushed satin finish.

Vector No.	Size, Inches	Max. Card Size	Net Each
HF20-46-62/1	2 x 4.62 x 6.21	4½″ x 6″	**$4.76**
HF20-31-42/1	2 x 3.12 x 4.21	3″ x 4″	**4.05**

PATCHBOARDS



Simple reliable units for single conductor patching on computers, control and test panels. Contacts are spaced on .265 centers and accept .090 diameter patchcords listed below. Reliable low resistance contacts (under .001 ohms) are beryllium copper nickel-plated and gold flashed with two holes for soldered leads. Solderless slip-on contacts (listed below) permit solderless connections to back. Alpha-numeric numbering supplied as standard on all units with letters running horizontally and numbers vertically, front and back. New aluminum extrusion frames all units for handsome, custom appearance. Panels are black with white letters and numbers. Mounting brackets furnished with all units.

Vector No.	Description	Net Each
PB110-2	10 Contacts 2.985 x .600 x 1″‡	**$ 4.69**
PB210-2	20 Contacts 2.985 x .865 x 1″‡	**4.90**
PB510-2	50 Contacts 2.985 x 1.660 x 1″	**7.11**
PB1010-2	100 Contacts 2.985 x 2.985 x 1″	**11.95**
PB1020-2	200 Contacts 5.635 x 2.985 x 1″	**21.62**
PB1520-2	300 Contacts 5.635 x 4.310 x 1″	**32.39**
K2.02-1	Jumper (shorting plug)	**3.73***
K2.06	6″ Patchcord, black	**3.03***
K2.09	9″ Patchcord, yellow	**3.07***
K2.15	15″ Patchcord, blue	**3.52***
1723/1	Solderless slip-on contact	**47.85†**
K9.06	6″ Cord, piggy back ea. end, black	**1.09**
K9.09	9″ Cord, piggy back ea. end, yellow	**1.14**
K9.15	15″ Cord, piggy back ea. end, blue	**1.14**

Net per package of: *25; †1000. ‡Two brackets; others four.

QUANTITY PRICES AVAILABLE ON REQUEST

BUNKER RAMO AMPHENOL SUBMINIATURE CONNECTORS ASTRO/348®

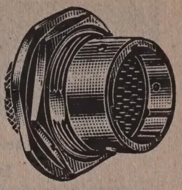
Astro/348® connectors meet new MIL-C-81511 for higher density, miniature connectors. Offer .085″ contact spacing for 23-22 size contacts; full performance under extreme environments. Removable crimp contacts, grounded shells and choice of standard or long construction.

① ② ③ **The first major improvement in crimp, removable contact systems:** A molded, one-piece retention disc **1.** actuated by a rear locking nut. **2.** After crimped contacts are tool-inserted, the locking nut is tightened, moving the contact retention risers into confinement. **3.** The contacts are locked in the disc. In the locked condition the internal construction is monoblock, air voids are eliminated, and an interseal is achieved. The contact confinement is similar to molded-in, offering excellent vibration and shock-dampening characteristics. The operating simplicity of the disc assembly minimizes in-service reliability hazards.

OTHER IMPORTANT FEATURES

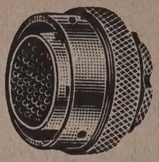
④ Pin Contact Protection. Choice of standard or long construction. Standard is scoop-proof in normal use where pin contacts are in receptacle shell. Long type can't be damaged if contacts are in plug or receptacle. See "How To Order" section on following page.

⑤ Closed entry socket contacts; hard front closed entry socket insert.

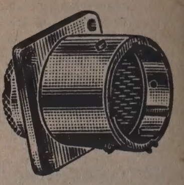


"D" Hole Receptacle

Cable Receptacle



Plug



Square Flange

⑥ Triple-track bayonet system: Positive coupling, with coupling ring mechanically captivated.

⑦ 5 key polarization.

⑧ Dual mating seals: Interfacial and dynamic "O" ring peripheral shell.

⑨ Monoblock internal construction; inserts are bonded to the shell.

⑩ Self-sealing rear grommet. No ferrule.

⑪ Color-marked. Fast visual inspection of mated condition.

⑫ Environmental performance per MIL-C-81511.

⑬ Contacts are crimp type, serviceable. (Fixed solder-type contacts in hermetics.)

⑭ Crimp form: Four indent with MS-3198-1 type tool.

⑮ Shell-to-shell grounding fingers.

⑯ Front release, rear serviceable contact system.

⑰ Contact retention in serviceable position, 3 pounds minimum.

⑱ Contact retention in locked condition, 10 pounds minimum after 10 cycles of maintenance aging.

⑲ Dielectric separation. Contact to contact min. wall section, 0.021″.

⑳ Minimum creepage in unmated condition, 0.063″.

㉑ Wire sealing range: 0.030″ dia. minimum to 0.054″ diameter max.

㉒ Alternate positions for connector polarity by rearranging secondary shell key and keyways. Master key remains in normal position.

㉓ Assembly of contacts to contact retention disc may be made outside of connector shells; provides quick inspection for proper installation.

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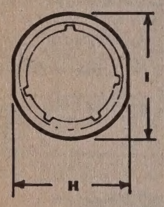
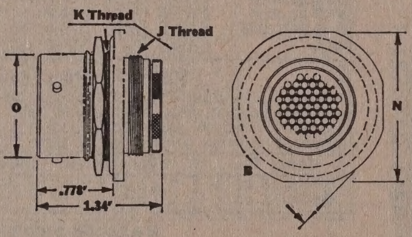
CONNECTOR DIMENSIONS (BY SHELL SIZE)





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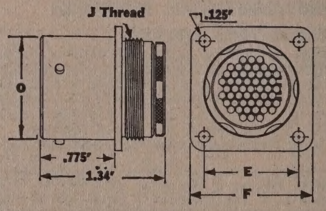
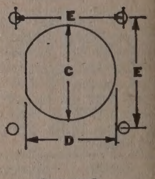
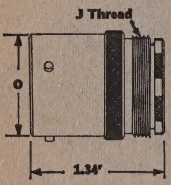


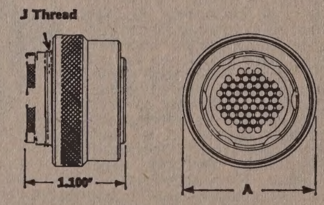
Square Flange



Cut-out

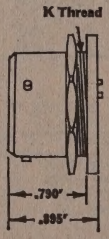


Cable Receptacle

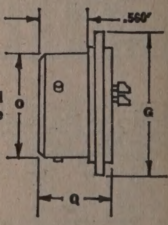


Plug

Hermetic Seal Single Hole Mounting



Hermetic Seal Solder Flange



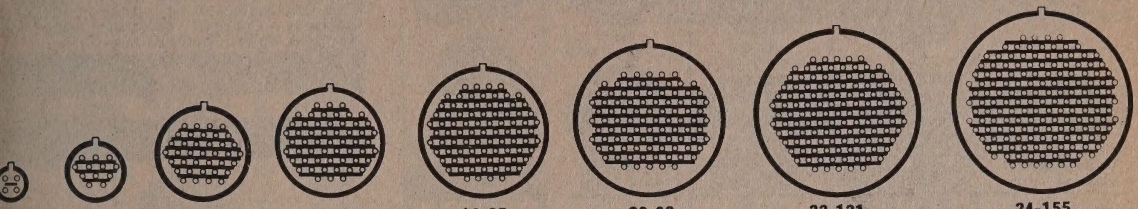
Shell Size*	Max. Dimensions, Inches													
	A	B	C ±.005″	D‡ ±.005″	E ±.005″	F	G	H	I	Thread J	Thread K	N	O	Q Std.	Q Long
24†	1.900	2.165	1.635	1.605	1.375	1.711	2.066	1.565	1.775	1½-28	1⅝-20	2.089	1.553	.....	.903
18	1.475	1.745	1.260	1.230	1.062	1.351	1.570	1.190	1.400	1⅛-28	1¼-20	1.651	1.178	.740	.873
16	1.350	1.635	1.135	1.105	.969	1.258	1.446	1.066	1.280	1-28	1⅛-20	1.526	1.054	.710	.843
14	1.225	1.510	1.010	.980	.906	1.133	1.320	.940	1.150	⅞-28	1-20	1.401	.928	.710	.843
10	.975	1.197	.760	.730	.719	.945	1.070	.690	.900	⅝-28	¾-20	1.114	.678	.710	.843
08	.850	1.072	.635	.605	.594	.820	.945	.565	.780	½-28	⅝-20	.989	.553	.710	.843

*Write for dimensions of 20 and 22 size shells. †100% No-Scoop only. ‡Applies to "D" hole receptacle.

INSERT AND CONTACT SIZES

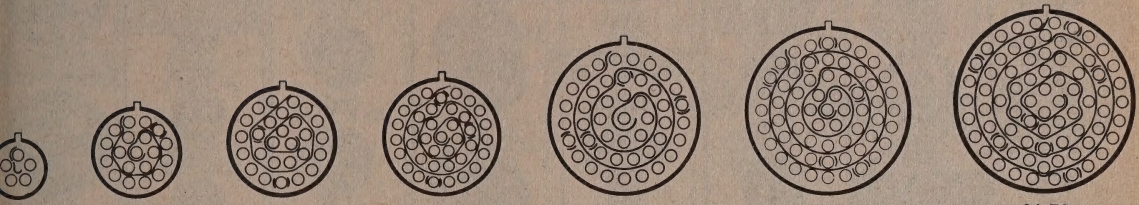
yphenated number below each diagram represents shell size rst number) and number of contacts (second number). Example: 14-37 indicates a size 14 shell with 37 contacts.

SIZE 23-22 CONTACTS



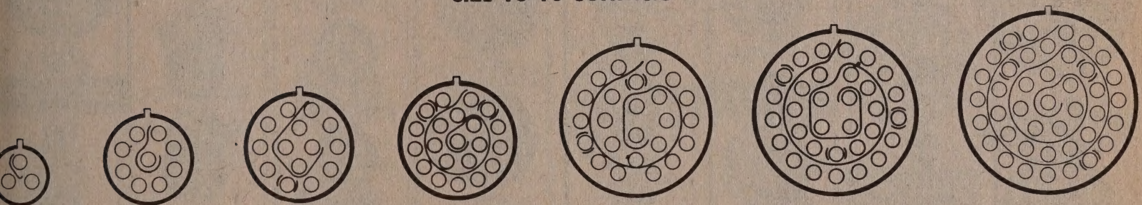
-04 10-12 14-37 16-55 18-85 20-92 22-121 24-155

SIZE 20-20 CONTACTS



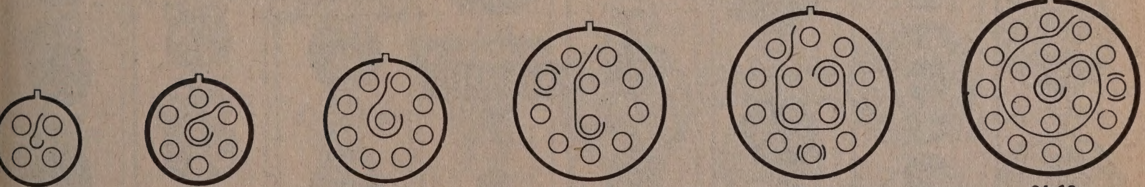
0-05 14-19 16-27 18-38 20-45 22-61 24-74

SIZE 16-16 CONTACTS



10-03 14-09 16-14 18-21 20-24 22-32 24-41

SIZE 12-12 CONTACTS



14-04 16-07 18-09 20-11 22-14 24-19

CONTACT SIZES AND PRICING (WHEN PURCHASED SEPARATELY)

Standard construction socket contacts .687″ lg.; long construction, 1.017″ lg.

Contact Size	Wire Size AWG	Cur. Rtg., A	For Construction	Socket Contacts (Only)		Net Each, Lots		Pin Contacts (Only)		Net Each, Lots	
				Amph. No. 348-100-	MIL No. MS-	1-5499	5500-13,999	Amph. No. 348-100-	MIL No. MS-	1-5499	5500-13,999
23-22	22, 24, 26	5.0	Std.	2201S-02	90460A23-22	$0.23	$0.19	2202P-02	90461A23-22	$0.14	$0.116
			Long	2203S-02*	3343A23-22	.267	.22	2202P-02	90461A23-22	.14	.116
20-20	20, 22, 24	7.5	Std.	2000S-02	90460A20-20	.291	.239	2000P-02	90461A20-20	.153	.127
			Long	2003S-02*	3343A20-20	.292	.24	2000P-02	90461A20-20	.153	.127
16-16	16, 18, 20	13.0	Std.	1600S-02	90460A16-16	.333	.274	1600P-02	90461A16-16	.172	.142
			Long	1603S-02*	3343A16-16	.373	.307	1600P-02	90461A16-16	.172	.142
12-12	12, 14	23.0	Std.	1200S-02	90460A12-12	.587	.483	1200P-02	90461A12-12	.363	.299
			Long	1203S-02*	3343A12-12	.655	.539	1200P-02	90461A12-12	.363	.299

*Non-stock item subject to $100.00 min. order.

BUNKER RAMO AMPHENOL MS/AN Insert Contacts

MANUFACTURED IN STRICT ACCORDANCE TO MIL-C-5015D SPECIFICATIONS

Contacts are non-rotating type with solder pockets pre-tinned. Inserts are all male or female; feature dimensional stability and high insulation and arc resistance. Sizes 20 and up have thicker inserts. Coupling rings made of solid aluminum bar stock for high strength. Number, in parenthesis, (1), (2), etc., indicates service voltage rating, per table below. Following letters (W,X,Y, and/or Z) give alternate pin positioning available per diagram, right.

SERVICE VOLTAGE RATING

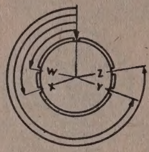
Where more than one rating is shown, (1,3) or (1-5) etc., some contacts have ratings different than other contacts; full information on request. (*) Indicates high voltage. (†) Thermocouple.

Key	(1)	(2)	(3)	(4)	(5)	(6)
Volts DC	250	700	1250	1750	2450	4200
Volts AC rms	200	500	900	1250	1750	3000

CURRENT RATING

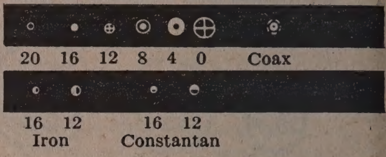
Contact Size	20	16	12	8	4	0
Amperes	10	22	41	73	135	245

ALTERNATE POSITIONS



WIRE SIZE CODE

Wire size indicated by contact marking in diagrams. Compare diagrams with these codes to determine wire size.



1 CONTACT

8S-1
(2)

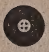
10S-2
(2)

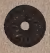
12S-4
(3)

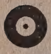
12-5
(3)

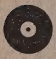
14-3
(2)

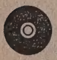
14S-4
(3)

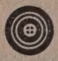

16-2
(4)

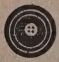

16S-3
(5)

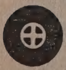

16-12
(2)


18-6
(3)

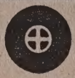

18-7
(5)

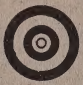

18-16
(6)


18-420
(*)


20-2
(3)

1 CONTACT


22-7
(4)


24-835
(*)

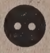
2 CONTACTS

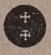
10SL-4
(2)

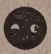
12S-3
(2)

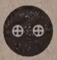
12S-6
(†)

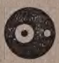
14S-9
(2) W,X,Y,Z

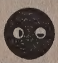

16S-4
(3) W,X,Y,Z

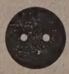

16-11
(2) W,X,Y,Z


16-13
(2,†) W,X,Y,Z

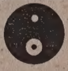

18-3
(3) W,X,Y,Z

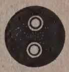

18-14
(2) W,X,Y,Z

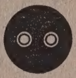

18-404
(†) W,X,Y,Z

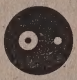

20-5
(4) W,X,Y,Z

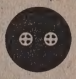
2 CONTACTS

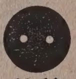

20-12
(2) W,X,Y,Z

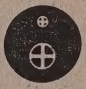

20-23
(2) W,X,Y,Z

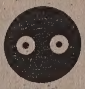

22-1
(3) W,X,Y,Z

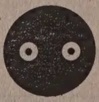

22-3
(3) W,X,Y,Z

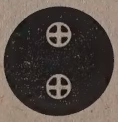

22-8
(4) W,X,Y,Z


22-11
(5) W,X,Y,Z


24-1
(3) W,X,Y,Z


24-9
(2) W,X,Y,Z


28-7
(3) W,X,Y,Z

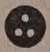

32-5
(3) W,X,Y,Z

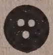
3 CONTACTS

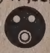
10SL-3
(2)

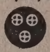
14S-1
(2)

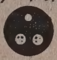
14S-7
(2) W,X,Y

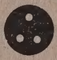

16S-5
(2) W,X,Y,Z

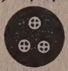

16S-6
(2) W,X,Y

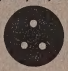

16-7
(2) W,X,Y,Z

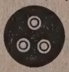

16-10
(2) W,X,Y

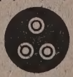

18-5
(3) W,X,Y,Z

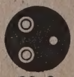

18-22
(3) W,X,Y,Z


20-3
(3) W,X,Y,Z

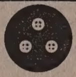

20-6
(3) W,X,Y,Z

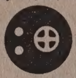

20-19
(2) W,X,Y

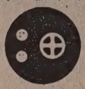

22-2
(3) W,X,Y,Z

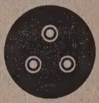

22-6
(3) W,X,Y,Z

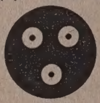
3 CONTACTS

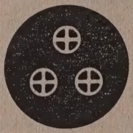

22-9
(4) W,X,Y,Z


22-21
(2) W,X,Y,Z


24-14
(2) W,X,Y,Z


28-3
(4) W,X,Y,Z

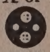

28-6
(3) W,X,Y,Z

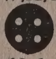

36-4
(2,3) W,X,Y,Z

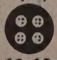
4 CONTACTS

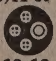
12SL-844
(1)

14S-2
(1) X or Y

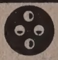

16-9
(2) W,X,Y,Z

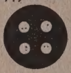

18-4
(3) W,X,Y,Z

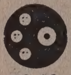

18-10
(2) X or Y

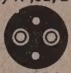

18-13
(2) W,X,Y,Z

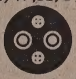
4 CONTACTS

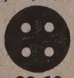

18-15
(2,†) X or Y

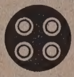

20-4
(3) W,X,Y

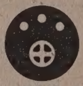

20-20
(2) W,X,Y,Z

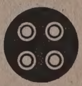

20-24
(2) W,X,Y,Z

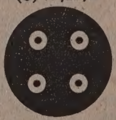

22-4
(2) W,X,Y,Z

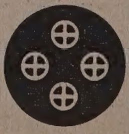

22-10
(4) W,X,Y,Z


22-22
(2) X or Y


24-4
(3) W,X,Y,Z

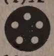

24-22
(3) W,X,Y

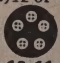

32-17
(3) W,X,Y

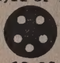

36-5
(2) X or Y

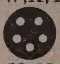
5 CONTACTS

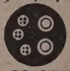
14S-5
(1) X

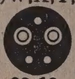

16S-8
(2) X or Y

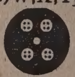

18-11
(2) X or Y

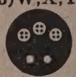

18-20
(2) W,X,Y

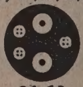

18-29
(2) W,X,Y

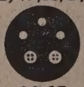

20-14
(2) W,X,Y,Z

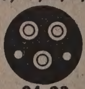

22-12
(3) W,X,Y,Z

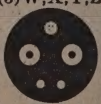

22-13
(2,3) W,X,Y,Z


22-34
(3) W,X,Y,Z

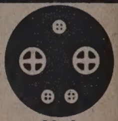

24-12
(2) W,X,Y,Z

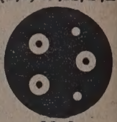

24-17
(3) W,X,Y,Z

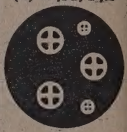

24-23
(3) W,X,Y,Z


28-5
(3) W,X,Y,Z

5 CONTACTS

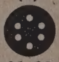

32-1
(3,4) W,X,Y,Z

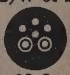

32-2
(4) W,X,Y,Z

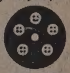

36-2
(3)

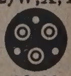
6 CONTACTS

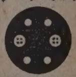
14S-6
(1)

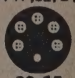

18-12
(2) W or Z

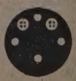

20-8
(1) W,X,Y,Z


20-17
(2) W,X,Y


20-22
(2) W,X,Y,Z

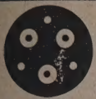

22-5
(3) W,X,Y,Z

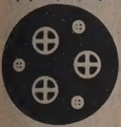

22-15
(2,4) W,X,Y,Z

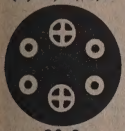

22-24
(2,3) W,X,Y,Z

BUNKER RAMO AMPHENOL MS/AN Insert Contacts

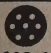
6 CONTACTS

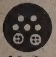

28-22
(3)W,X,Y,Z

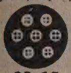

36-3
(3)W,X,Y,Z

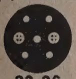

36-6
(2)W,X,Y,Z

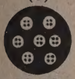
7 CONTACTS

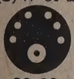

16S-1
(2)W or Z

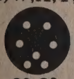

18-9
(1)W,X,Y,Z

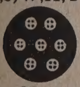

20-15
(2)W or Z

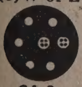

22-26
(3)

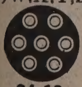

22-28
(2)W or Z

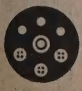

22-29
(2)W,X,Y,Z


22-33
(2,3)W,X,Y,Z

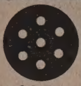

24-2
(3)W or Z

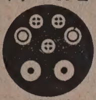

24-3
(3)W,X,Y,Z

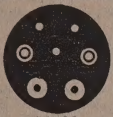

24-10
(2)W or Z


24-16
(2,3)W,X,Y,Z

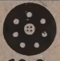
7 CONTACTS

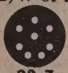

24-27
(4)W or Z

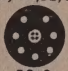

28-10
(2,3)W,X,Y,Z

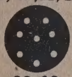

32-10
(2-5)W,X,Y,Z

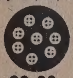
8 CONTACTS

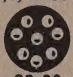

18-8
(2)W or Z

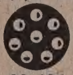

20-7
(2,3)W,X,Y,Z

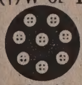

20-9
(2,3)W,X,Y,Z

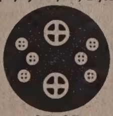

22-18
(2,3)W,X,Y,Z


22-23
(2,3)W or Y

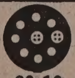

22-36
(2,3,†)W or Y

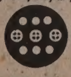

22-404
(†)W or Y


24-6
(2,3)W,X,Y,Z

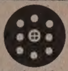

32-15
(3)W,X,Y,Z

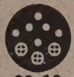
9 CONTACTS

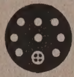

20-16
(2)W,X,Y,Z

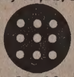

20-18
(2)W,X,Y,Z

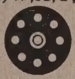
9 CONTACTS

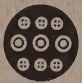

20-21
(2)W,X,Y,Z

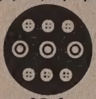

22-16
(2)W,X,Y,Z

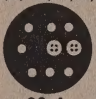

22-17
(2,3)W,X,Y,Z

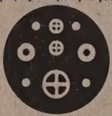

22-20
(2)W,X,Y,Z


22-27
(2,3)W,Y,Z

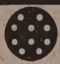

24-11
(2)W,X,Y,Z

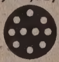

28-1
(2,3)W,X,Y,Z

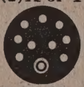

28-4
(3,4)W,X,Y,Z

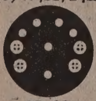

32-3
(3)W,X,Y,Z

10 CONTACTS

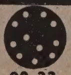

18-1
(1,2)W,X,Y,Z


18-19
(2)X or Y

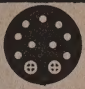

24-21
(3)W,X,Y,Z

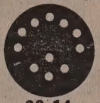

28-19
(2,3,5)W,X,Y,Z

11 CONTACTS

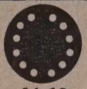

20-33
(2)

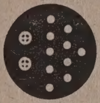
11 CONTACTS

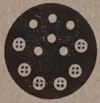

24-20
(3)W,X,Y,Z

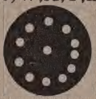

28-14
(3)W,X,Y,Z

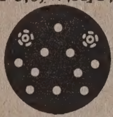
12 CONTACTS


24-19
(1)

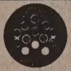

28-8
(2-4)W,X,Y,Z


28-9
(3)W,X,Y,Z

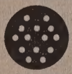

28-18
(1-3,6)W,X,Y,Z

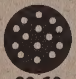

32-101
(3,6)W,X,Y,Z

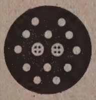
13 CONTACTS

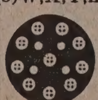

20-11
(1)

14 CONTACTS

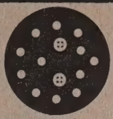

20-27
(1,2)W,X,Y,Z

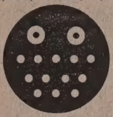

22-19
(2)W,X,Y,Z

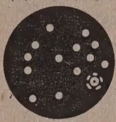

28-2
(3)W,X,Y,Z


28-20
(2)W,X,Y,Z

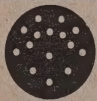
14 CONTACTS

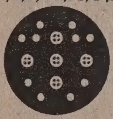

32-4
(2,3)W,X,Y,Z

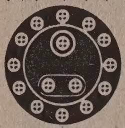

32-9
(3)W,X,Y,Z

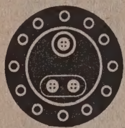

32-102
(2,3,6)W,X,Y,Z

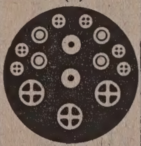
15 CONTACTS


28-17
(2,3,5)W,X,Y,Z

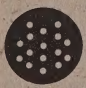

32-12
(2,3)W,X,Y,Z

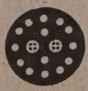

36-405
(*)


36-407
(*)

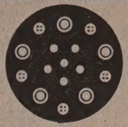

40-5
(2)W,X,Y,Z

16 CONTACTS

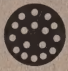

24-5
(2)W,X,Y,Z

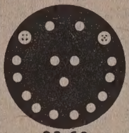

24-7
(2)W,X,Y,Z

16 CONTACTS

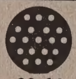

36-14
(3)W,X,Y

17 CONTACTS

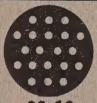

20-29
(2)W or Z


36-13
(2,4)W,X,Y,Z

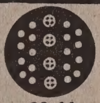
19 CONTACTS

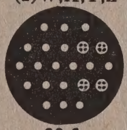

22-14
(2)W,X,Y,Z

20 CONTACTS

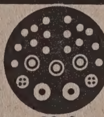

28-16
(2)W,X,Y,Z

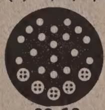
22 CONTACTS

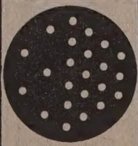

28-11
(2)W,X,Y,Z


36-1
(3)W,X,Y,Z

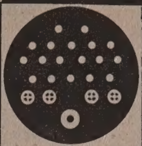
23 CONTACTS

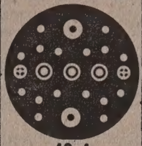

32-6
(2)W,X,Y,Z


32-13
(3)W,X,Y,Z

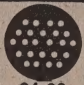

40-2
(3,5)W,X,Y,Z

23 CONTACTS

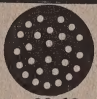

40-3
(3)W,X,Y,Z


40-4
(3)W,X,Y,Z

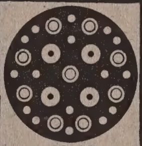
24 CONTACTS


24-28
(1)W,X,Y,Z

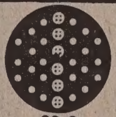
26 CONTACTS

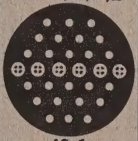

28-12
(2)W,X,Y

29 CONTACTS

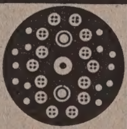

40-10
(2)W,X,Y,Z

30 CONTACTS

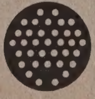

32-8
(2)W,X,Y,Z


40-1
(3)W,X,Y,Z

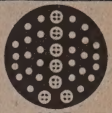
31 CONTACTS

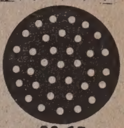

36-9
(2)W,X,Y,Z

35 CONTACTS

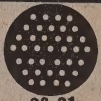

28-15
(2)W,X,Y,Z

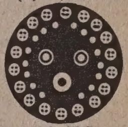
35 CONTACTS


32-7
(1,2)W,X,Y,Z

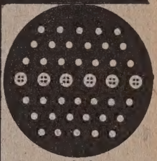

36-15
(2,3)W,X,Y,Z

37 CONTACTS

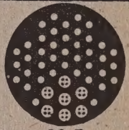

28-21
(2)W,X,Y,Z

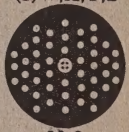

36-406
(2)

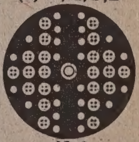
42 CONTACTS


44-1
(3)W,X,Y,Z

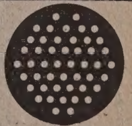
47 CONTACTS


36-7
(2)W,X,Y,Z

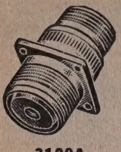

36-8
(2)W,X,Y,Z


40-9
(2)W,X,Y,Z

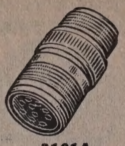
48, 52 CONT.


36-10
(2)W,X,Y,Z
Similar to above
32-414
(2)
36-403 36-404
(2) (2)

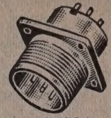
BUNKER RAMO AMPHENOL MS Connectors



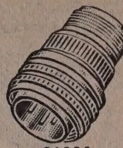
3100A
Feed-thru



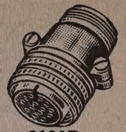
3101A
Cable Jack



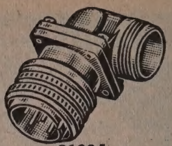
3102A
Receptacle



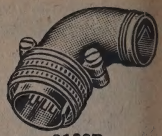
3106A
Plug



3106B
Plug and
Split Back Shell



3108A
Angle Plug
Solid Back Shell



3108B
Angle Plug
Split Back Shell

Meet current MIL-C-5015 specifications; interchangeable with units made to meet previous specs. **Finish:** Cadmium-plated aluminum with olive drab chromate conversion coating; non-reflective, corrosion-resistant. **Inserts:** Molded diallyl phthalate; offers dimensional stability, high insulation resistance, high arc resistance. **Contacts:** Non-rotating, silver-plated; pre-tinned solder pockets. **Coupling Rings:** Made from solid aluminum bar stock. Other MS/AN connectors for potting and pressurizing are available; write for complete literature.

Note: For W, X, Y or Z polarization, add **5c** to price shown.

Insert	Net Each, Lots of 1-9* Shell Style						
	3100A	3101A	3102A	3106A	3106B	3108A	3108B
8S-01P	$2.87	$2.66	$1.60	$1.84	......	......	......
8S-01S	2.87	2.66	1.60	1.84	......	......	......
10S-02P	2.94	2.39	1.10	2.57	......	......	......
10S-02S	2.97	2.44	1.14	2.59	......	......	......
10SL-03P	1.86	2.76	1.43	......	......	......	......
10SL-03S	......	......	......	2.24	......	$3.96	$2.07
10SL-04P	1.84	2.61	1.43	......	......	......	......
10SL-04S	......	......	......	2.18	......	3.95	2.03
12-05P	2.44	2.69	1.51	2.46	......	4.44	2.61
12-05S	2.61	2.92	1.73	2.66	......	4.64	2.82
12S-01P	2.24	2.57	1.27	2.07	......	4.75	2.66
12S-01S	2.33	2.59	1.30	2.11	......	4.77	2.67
12S-02P	2.24	2.57	1.27	2.07	......	4.75	2.66
12S-02S	2.33	2.59	1.30	2.11	......	4.77	2.67
12S-03P	2.01	2.35	1.08	1.86	......	4.49	2.44
12S-03S	2.05	2.39	1.14	1.94	......	4.54	2.48
12S-04P	2.07	2.44	1.17	1.95	......	4.55	2.54
12S-04S	2.07	2.44	1.17	1.95	......	4.55	2.54
12S-06P	6.39	6.75	5.45	6.26	......	8.87	6.83
12S-06S	6.80	7.13	5.84	6.70	......	9.29	7.24
12SL-844P	......	......	2.59	......	......	......	......
12SL-844S	......	......	......	4.82	......	7.24	......
14-03P	2.48	2.97	1.58	2.61	......	4.64	3.91
14-03S	2.69	3.20	1.79	2.87	......	4.85	4.17
14S-01P	2.14	2.61	1.40	2.14	$2.59	4.42	2.39
14S-01S	2.18	2.66	1.43	2.18	2.61	4.44	2.44
14S-02P	2.11	2.59	1.37	2.11	2.57	4.40	2.38
14S-02S	2.29	2.72	1.51	2.29	2.69	4.54	2.54
14S-04P	2.03	2.48	1.27	2.03	2.46	4.32	2.29
14S-04S	2.07	2.57	1.36	2.07	2.54	4.38	2.35
14S-05P	2.35	2.82	1.60	2.35	2.76	4.62	2.59
14S-05S	2.44	2.92	1.71	2.44	2.89	4.72	2.67
14S-06P	2.44	2.92	1.71	2.44	2.89	4.72	2.67
14S-06S	2.48	2.97	1.75	2.48	2.94	4.77	2.72
14S-07P	2.14	2.61	1.40	2.14	2.59	4.42	2.39
14S-07S	2.18	2.66	1.43	2.18	2.61	4.44	2.44
14S-09P	2.03	2.48	1.27	2.03	2.46	4.32	2.29
14S-09S	2.05	2.54	1.30	2.05	2.48	4.34	2.33
14S-10P	2.35	2.82	1.60	2.35	2.76	4.62	2.59
14S-10S	2.54	3.00	1.79	2.54	2.97	4.82	2.76
14S-11P	2.35	2.82	1.60	2.35	2.76	4.62	2.59
14S-11S	2.54	3.00	1.79	2.54	2.97	4.82	2.76
14S-12P	2.35	2.82	1.60	2.35	2.76	4.62	2.59
14S-12S	2.44	2.92	1.71	2.44	2.89	4.72	2.67
16-02P	2.61	2.69	1.47	2.46	......	5.10	3.15
16-02S	2.89	2.97	1.73	2.69	......	5.38	3.37
16-07P	3.20	3.25	2.03	3.02	......	5.68	3.74
16-07S	3.65	3.76	2.48	3.52	......	6.15	4.19
16-09P	3.00	3.09	1.84	2.87	......	5.51	3.53
16-09S	3.35	3.48	2.24	3.22	......	5.84	3.89
16-10P	2.92	3.00	1.75	2.72	......	5.40	3.46
16-10S	3.24	3.33	2.07	3.09	......	5.71	3.78
16-11P	2.69	2.82	1.58	2.57	......	5.21	3.24
16-11S	3.05	3.15	1.90	2.92	......	5.56	3.59
16-12P	3.12	3.22	1.95	2.97	......	5.61	3.65
16-12S	3.55	3.65	2.39	3.37	......	6.04	4.10
16-13P	6.60	6.71	5.45	6.45	......	9.14	7.13
16-13S	7.64	7.72	6.47	7.46	......	10.12	8.18
16S-01P	2.69	2.94	1.73	2.44	3.12	5.68	2.92
16S-01S	3.00	3.22	2.01	2.69	3.37	5.96	3.20
16S-03P	2.33	2.46	1.25	1.95	2.66	5.21	2.44
16S-03S	2.39	2.61	1.40	2.11	2.82	5.38	2.59
16S-04P	2.39	2.61	1.40	2.11	2.82	5.38	2.59
16S-04S	2.48	2.69	1.49	2.24	2.92	5.45	2.67
16S-05P	2.57	2.76	1.58	2.29	2.97	5.53	2.72
16S-05S	2.61	2.87	1.64	2.35	3.02	5.58	2.82
16S-06P	2.61	2.87	1.64	2.35	3.02	5.58	2.82
16S-06S	2.61	2.87	1.64	2.35	3.02	5.58	2.82
16S-08P	2.66	2.89	1.68	2.38	3.05	5.61	2.87
16S-08S	2.72	2.97	1.75	2.46	3.15	5.69	2.94
16S-15P	2.72	2.97	1.75	2.46	3.15	5.69	2.94
16S-15S	2.87	3.05	1.84	2.57	3.24	5.81	3.02
18-01P	3.53	3.78	2.33	3.22	3.83	6.50	3.96
18-01S	3.65	4.08	2.59	3.52	4.11	6.80	4.27
18-03P	2.67	3.09	1.64	2.54	3.15	5.83	3.30
18-03S	3.30	3.74	2.27	3.15	3.78	6.45	3.91
18-04P	2.69	3.12	1.68	2.57	3.20	5.84	3.33

Type 3100A: Wall receptacle with mounting flange; with AN305 cable clamp.

Type 3101A: Cable receptacle. Provides for detachable splice i cable or conduit.

Type 3102A: Box receptacle that mounts on chassis or panel For open type wiring.

Type 3106A: Straight plug with solid back shell.

Type 3106B: Same but with split back shell.

Type 3108A: Angle plug. Solid back shell.

Type 3108B: Same, but with split back shell.

Insert	Net Each, Lots of 1-9* Shell Style						
	3100A	3101A	3102A	3106A	3106B	3108A	3108B
18-04S	$ 2.94	$ 3.33	$ 1.86	$ 2.76	$ 3.37	$ 6.11	$ 3.55
18-05P	2.59	3.00	1.51	2.44	3.05	5.71	3.22
18-05S	2.94	3.33	1.86	2.76	3.37	6.11	3.55
18-06P	2.87	3.24	1.79	2.67	3.30	5.99	3.48
18-06S	3.35	3.78	2.33	3.22	3.83	6.50	3.96
18-07P	2.67	3.09	1.64	2.54	3.15	5.83	3.30
18-07S	3.15	3.55	2.07	3.00	3.63	6.27	3.78
18-08P	3.35	3.78	2.33	3.22	3.83	6.50	3.96
18-08S	3.59	3.96	2.54	3.46	4.08	6.75	4.21
18-09P	3.20	3.59	2.11	3.02	3.65	6.32	3.80
18-09S	3.46	3.83	2.38	3.25	3.89	6.58	4.08
18-10P	3.24	3.65	2.18	3.09	3.74	6.39	3.86
18-10S	3.59	3.96	2.54	3.46	4.08	6.75	4.21
18-11P	3.24	3.65	2.18	3.09	3.74	6.39	3.86
18-11S	3.35	3.78	2.33	3.22	3.83	6.50	3.96
18-12P	3.02	3.46	1.95	2.89	3.52	6.17	3.65
18-12S	3.24	3.65	2.18	3.09	3.74	6.39	3.86
18-13P	3.25	3.67	2.24	3.12	3.76	6.43	3.89
18-13S	3.67	4.10	2.61	3.53	4.17	6.83	4.32
18-14P	3.02	3.46	1.95	2.89	3.52	6.17	3.65
18-14S	3.52	3.89	2.44	3.33	3.95	6.65	4.11
18-15P	10.75	11.18	9.72	10.59	11.22	13.89	11.35
18-15S	11.03	11.44	10.00	10.88	11.50	14.19	11.65
18-16P	2.94	3.33	1.86	2.76	3.37	6.11	3.55
18-16S	3.46	3.83	2.38	3.25	3.89	6.58	4.08
18-17P	3.65	4.08	2.59	3.52	4.11	6.80	4.27
18-17S	3.67	4.10	2.61	3.53	4.17	6.83	4.32
18-18P	3.65	4.08	2.59	3.52	4.11	6.80	4.27
18-18S	3.67	4.10	2.61	3.53	4.17	6.83	4.32
18-19P	4.54	4.97	3.52	4.40	5.02	7.69	5.15
18-19S	3.74	4.11	2.66	3.55	4.19	6.86	4.34
18-20P	2.92	3.30	1.84	2.72	3.35	6.04	3.53
18-20S	3.09	3.52	2.03	2.94	3.55	6.24	3.74
18-22P	2.67	3.09	1.64	2.54	3.15	5.83	3.30
18-22S	2.92	3.30	1.84	2.72	3.35	6.04	3.53
18-23P	3.86	4.27	2.82	3.74	4.34	7.01	4.49
18-23S	3.91	4.34	2.89	3.78	4.40	7.08	4.54
18-24P	3.86	4.27	2.82	3.74	4.34	7.01	4.49
18-24S	3.91	4.34	2.89	3.78	4.40	7.08	4.54
18-29P	2.94	3.33	1.86	2.76	3.37	6.11	3.55
18-29S	2.94	3.33	1.86	2.76	3.37	6.11	3.55
18-404P	7.46	7.89	6.43	7.33	7.97	10.64	8.10
18-404S	8.48	8.86	7.41	8.28	8.91	11.61	9.08
18-42CP	......	6.04	......	......	......	......	7.44
18-42CS	......	6.45	......	......	......	......	7.87
18-420P	5.25	......	4.92	6.71	7.42	10.03	......
18-420S	5.96	......	5.30	7.08	7.74	10.44	......
20-02P	4.27	4.49	3.02	4.62	5.08	8.00	5.30
20-02S	4.72	4.95	3.48	5.05	5.53	8.48	5.71
20-03P	3.22	3.46	1.95	3.55	4.02	6.93	4.23
20-03S	4.21	4.42	2.97	4.54	5.02	7.97	5.25
20-04P	3.37	3.63	2.14	3.76	4.21	7.13	4.42
20-04S	3.86	4.10	2.61	4.21	4.70	7.61	4.92
20-05P	3.33	3.55	2.07	3.67	4.17	7.08	4.38
20-05S	3.63	3.83	2.38	3.95	4.42	7.35	4.64
20-06P	3.05	3.24	1.79	3.35	3.83	6.77	4.08
20-06S	3.09	3.30	1.84	3.46	3.89	6.83	4.11
20-07P	3.37	3.63	2.14	3.76	4.21	7.13	4.42
20-07S	3.67	3.89	2.44	4.02	4.49	7.42	4.72
20-08P	3.86	4.10	2.61	4.21	4.70	7.61	4.92
20-08S	4.49	4.72	3.24	4.83	5.30	8.22	5.53
20-09P	3.65	3.86	2.39	3.96	4.44	7.41	4.70
20-09S	3.74	3.91	2.46	4.08	4.51	7.44	4.75
20-11P	4.32	4.51	3.05	4.64	5.10	8.05	5.36
20-11S	6.58	6.80	5.36	6.90	7.41	10.34	7.61
20-12P	3.37	3.63	2.14	3.76	4.21	7.13	4.42
20-12S	3.63	3.83	2.38	3.95	4.42	7.35	4.64
20-13P	3.22	3.46	1.95	3.55	4.02	6.93	4.23
20-13S	4.75	4.97	3.52	5.08	5.56	8.50	5.73
20-14P	4.08	4.27	2.82	4.40	4.85	7.79	5.08
20-14S	5.25	5.45	3.96	5.58	6.04	8.95	6.26
20-15P	3.76	3.95	2.48	4.10	4.54	7.46	4.77
20-15S	5.08	5.30	3.83	5.41	5.89	8.83	6.12
20-16P	3.78	3.96	2.54	4.11	4.55	7.52	4.82
20-16S	4.02	4.23	2.76	4.38	4.83	7.74	5.05
20-17P	3.74	3.91	2.46	4.08	4.51	7.44	4.75
20-17S	4.51	4.75	3.25	4.85	5.36	8.27	5.56

★LARGER QUANTITY DISCOUNTS SHOWN ON LAST PAGE OF THIS SERIES

AMPHENOL MS Connectors

Insert	Net Each, Lots of 1-9* Shell Style						
	3100A	3101A	3102A	3106A	3106B	3108A	3108B
0-18P	$ 3.91	$ 4.17	$ 2.67	$ 4.27	$ 4.75	$ 7.67	$ 4.97
0-18S	4.34	4.54	3.09	4.70	5.13	8.07	5.30
0-19P	4.17	4.40	2.92	4.49	4.97	7.89	5.15
0-19S	5.08	5.30	3.83	5.41	5.89	8.83	6.12
0-20P	4.21	4.42	2.97	4.75	5.02	7.97	5.25
0-20S	5.08	5.30	3.83	5.41	5.89	8.83	6.12
0-21P	3.65	3.86	2.39	3.96	4.44	7.41	4.70
0-21S	3.83	4.08	2.59	4.19	4.64	7.57	4.85
0-22P	4.32	4.51	3.05	4.62	5.10	8.05	5.36
0-22S	5.08	5.30	3.83	5.41	5.89	8.83	6.12
0-23P	3.63	3.83	2.38	3.95	4.42	7.35	4.64
0-23S	3.95	4.19	2.69	4.32	4.77	7.69	4.98
0-24P	3.74	3.91	2.46	4.08	4.51	7.44	4.75
0-24S	4.62	4.83	3.35	4.97	5.41	8.33	5.64
0-27P	3.86	4.10	2.61	4.21	4.70	7.61	4.92
0-27S	4.23	4.44	3.00	4.55	5.05	7.99	5.26
0-29P	4.19	4.40	2.94	4.51	4.98	7.94	5.21
0-29S	4.64	4.85	3.37	4.98	5.45	8.37	5.68
0-33P	4.17	4.38	2.92	4.49	4.97	7.89	5.15
0-33S	4.27	4.49	3.02	4.62	5.08	8.00	5.30
2-01P	3.83	4.02	2.33	3.83	4.38	7.52	4.64
2-01S	4.44	4.64	3.00	4.44	5.05	8.20	5.36
2-02P	4.10	4.27	2.61	4.10	4.70	7.84	4.97
2-02S	4.98	5.15	3.53	4.98	5.58	8.72	5.84
2-03P	4.92	5.08	3.46	4.92	5.51	8.63	5.73
2-03S	5.08	5.26	3.63	5.08	5.68	8.83	5.96
2-04P	4.23	4.42	2.76	4.23	4.83	7.99	5.10
2-04S	4.82	4.98	3.33	4.82	5.40	8.55	5.68
2-05P	3.95	4.17	2.48	3.95	4.54	7.69	4.83
2-05S	3.96	4.19	2.54	3.96	4.55	7.72	4.85
2-06P	3.89	4.10	2.44	3.89	4.49	7.64	4.77
2-06S	4.55	4.77	3.12	4.55	5.15	8.31	5.45
2-07P	4.11	4.32	2.66	4.11	4.72	7.87	4.98
2-07S	4.62	4.82	3.15	4.62	5.21	8.33	5.51
2-08P	3.33	3.53	1.86	3.33	3.91	7.08	4.21
2-08S	4.21	4.40	2.72	4.21	4.82	7.97	5.08
2-09P	3.52	3.67	2.03	3.52	4.10	7.24	4.38
2-09S	4.44	4.64	3.00	4.44	5.05	8.20	5.36
2-10P	3.52	3.67	2.03	3.52	4.10	7.24	4.38
2-10S	3.65	3.83	2.18	3.65	4.23	7.41	4.51
2-11P	3.24	3.46	1.79	3.24	3.83	6.99	4.11
2-11S	3.52	3.67	2.03	3.52	4.10	7.24	4.38
2-12P	4.23	4.42	2.76	4.23	4.83	7.99	5.10
2-12S	4.92	5.08	3.46	4.92	5.51	8.63	5.73
2-13P	3.91	4.11	2.46	3.91	4.51	7.67	4.82
2-13S	4.38	4.54	2.92	4.38	4.97	8.10	5.25
2-14P	4.70	4.85	3.22	4.70	5.26	8.42	5.56
2-14S	5.38	5.56	3.89	5.38	5.96	9.14	6.24
2-15P	4.19	4.38	2.69	4.19	4.77	7.94	5.05
2-15S	5.10	5.30	3.65	5.10	5.69	8.86	5.99
2-16P	4.38	4.54	2.92	4.38	4.97	8.10	5.25
2-16S	4.44	4.64	3.00	4.44	5.05	8.20	5.36
2-17P	4.19	4.38	2.69	4.19	4.77	7.94	5.05
2-17S	4.32	4.49	2.87	4.32	4.92	8.05	5.15
2-18P	3.89	4.10	2.44	3.89	4.49	7.64	4.77
2-18S	3.95	4.17	2.48	3.95	4.54	7.69	4.83
2-19P	4.62	4.82	3.15	4.62	5.21	8.33	5.51
2-19S	4.70	4.85	3.22	4.70	5.26	8.42	5.56
2-20P	4.02	4.21	2.57	4.02	4.62	7.74	4.92
2-20S	4.21	4.40	2.72	4.21	4.82	7.97	5.08
22-21P	4.40	4.55	2.94	4.40	4.98	8.12	5.26
22-21S	4.97	5.13	3.52	4.97	5.56	8.70	5.83
22-22P	4.72	4.92	3.24	4.72	5.30	8.48	5.58
22-22S	5.94	6.12	4.44	5.94	6.50	9.69	6.80
22-23P	4.51	4.72	3.05	4.51	5.10	8.27	5.40
22-23S	5.81	5.99	4.34	5.81	6.39	9.51	6.70
22-24P	3.86	4.08	2.39	3.86	4.44	7.61	4.75
22-24S	4.10	4.27	2.61	4.10	4.70	7.84	4.97
22-26P	4.34	4.51	2.89	4.34	4.95	8.07	5.21
22-26S	4.92	5.08	3.46	4.92	5.51	8.63	5.73
22-27P	4.44	4.64	3.00	4.44	5.05	8.20	5.36
22-27S	4.82	4.98	3.33	4.82	5.40	8.55	5.68
22-28P	4.27	4.44	2.82	4.27	4.85	8.00	5.13
22-28S	5.89	6.11	4.42	5.89	6.47	9.60	6.77
22-29P	4.64	4.83	3.20	4.64	5.25	8.37	5.53
22-29S	5.26	5.45	3.80	5.26	5.84	8.99	6.15
22-33P	3.86	4.08	2.39	3.86	4.44	7.61	4.75
22-33S	3.96	4.19	2.54	3.96	4.55	7.72	4.85
22-34P	3.91	4.11	2.46	3.91	4.51	7.67	4.82
22-34S	4.10	4.27	2.61	4.10	4.70	7.84	4.97
22-36P	20.41	20.58	18.94	20.41	21.02	24.15	21.28
22-36S	22.33	22.52	20.89	22.33	22.94	26.09	23.20
22-404P	20.41	20.58	18.94	20.41	21.02	24.15	21.28
22-404S	22.33	22.52	20.89	22.33	22.94	26.09	23.20
24-01P	4.98	5.02	3.25	5.08	6.15	9.14	5.61
24-01S	5.94	5.96	4.21	6.02	7.08	10.03	6.56
24-02P	4.75	4.77	3.02	4.83	5.89	8.86	5.38
24-02S	5.71	5.73	4.02	5.83	6.88	9.85	6.35
24-03P	4.44	4.49	2.72	4.54	5.61	8.59	5.08
24-03S	4.54	4.55	2.87	4.64	5.69	8.65	5.15
24-04P	5.25	5.26	3.53	5.36	6.39	9.36	5.84
24-04S	5.96	5.99	4.23	6.04	7.11	10.05	6.58
24-05P	5.26	5.30	3.55	5.38	6.43	9.39	5.89
24-05S	5.94	5.96	4.21	6.02	7.08	10.03	6.56
24-06P	4.95	4.97	3.22	5.02	6.11	9.06	5.56
24-06S	6.43	6.45	4.72	6.50	7.57	10.55	7.03
24-07P	5.51	5.53	3.78	5.58	6.65	9.58	6.12
24-07S	5.94	5.96	4.21	6.02	7.08	10.03	6.56
24-09P	4.70	4.72	2.97	4.77	5.83	8.80	5.30
24-09S	5.21	5.25	3.52	5.30	6.35	9.30	5.83
24-10P	6.86	6.88	5.13	6.93	8.00	10.98	7.46
24-10S	7.87	7.89	6.45	7.97	8.99	11.96	8.50
24-11P	5.84	5.89	4.17	5.96	7.01	10.00	6.47
24-11S	7.44	7.46	5.71	7.54	8.61	11.57	8.07
24-12P	$ 6.12	$ 6.15	$ 4.40	$ 6.22	$ 7.29	$10.21	$ 6.75
24-12S	7.33	7.35	5.61	7.42	8.50	11.44	7.97
24-14P	5.81	5.83	4.10	5.89	6.93	9.90	6.43
24-14S	7.29	7.31	5.56	7.35	8.42	11.35	7.89
24-16P	5.08	5.10	3.35	5.15	6.24	9.19	5.69
24-16S	5.94	5.96	4.21	6.02	7.08	10.03	6.56
24-17P	4.21	4.23	2.48	4.32	5.38	8.31	4.83
24-17S	4.70	4.72	2.97	4.77	5.83	8.80	5.30
24-18P	4.27	4.32	2.57	4.38	5.41	8.37	4.92
24-18S	6.60	6.65	4.92	6.71	7.74	10.70	7.24
24-19P	5.26	5.30	3.55	5.38	6.43	9.39	5.89
24-19S	5.61	5.64	3.89	5.69	6.77	9.73	6.24
24-20P	4.92	4.95	3.20	4.98	6.04	8.99	5.53
24-20S	4.97	4.98	3.24	5.05	6.12	9.08	5.58
24-21P	4.92	4.95	3.20	5.30	6.04	8.99	5.53
24-21S	5.26	5.30	3.55	5.38	6.43	9.39	5.89
24-22P	5.58	5.61	3.86	5.68	6.75	9.72	6.22
24-22S	6.90	6.93	5.21	7.01	8.07	11.03	7.54
24-23P	5.61	5.64	3.89	5.69	6.77	9.73	6.24
24-23S	6.80	6.83	5.08	6.88	7.97	10.92	7.42
24-24P	5.68	5.69	3.95	5.73	6.83	9.80	6.27
24-24S	6.39	6.43	4.70	6.47	7.54	10.49	7.01
24-27P	4.21	4.23	2.48	4.32	5.38	8.31	4.83
24-27S	4.34	4.38	2.61	4.42	5.51	8.48	4.97
24-28P	5.73	5.81	4.08	5.84	6.86	9.88	6.39
24-28S	6.50	6.56	4.82	6.60	7.67	10.64	7.13
24-768P	6.17	6.22	4.44	6.26	7.33	10.31	6.80
24-768S	8.31	8.33	6.60	8.42	9.47	12.43	8.93
24-835P	4.97	4.98	3.24	5.05	6.12	9.08	5.58
24-835S	6.12	6.15	4.40	6.22	7.29	10.21	6.75
28-01P	6.04	6.65	4.42	6.26	6.83	10.25	6.88
28-01S	7.72	8.31	6.12	7.97	8.52	11.93	8.59
28-02P	5.40	5.99	3.78	5.64	6.17	9.58	6.24
28-02S	5.73	6.35	4.17	5.99	6.56	10.00	6.60
28-03P	5.58	6.17	3.95	5.81	6.35	9.80	6.43
28-03S	5.94	6.50	4.32	6.15	6.71	10.12	6.77
28-04P	4.98	5.58	3.35	5.21	5.73	9.19	5.83
28-04S	5.25	5.83	3.63	5.45	6.02	9.45	6.11
28-05P	5.40	5.99	3.78	5.61	6.17	9.58	6.24
28-05S	6.17	6.77	4.54	6.39	6.93	10.38	7.01
28-06P	6.56	7.13	4.95	6.77	7.33	10.75	7.41
28-06S	7.33	7.94	5.69	7.54	8.10	11.55	8.18
28-07P	5.58	6.17	3.95	5.81	6.35	9.80	6.43
28-07S	6.26	6.86	4.64	6.47	7.03	10.47	7.11
28-08P	5.40	5.99	3.78	5.61	6.17	9.58	6.24
28-08S	5.58	6.17	3.95	5.81	6.35	9.80	6.43
28-09P	5.69	6.27	4.10	5.94	6.47	9.90	6.56
28-09S	6.24	6.83	4.62	6.45	7.01	10.44	7.08
28-10P	7.41	7.99	5.73	7.61	8.18	11.61	8.22
28-10S	9.30	9.90	7.69	9.51	10.10	13.55	10.15
28-11P	6.12	6.71	4.49	6.32	6.88	10.34	6.93
28-11S	7.42	8.00	5.81	7.64	8.20	11.63	8.27
28-12P	6.35	6.93	4.75	6.58	7.13	10.58	7.20
28-12S	7.42	8.00	5.81	7.64	8.20	11.63	8.27
28-13P	7.01	7.61	5.40	7.24	7.79	11.22	7.87
28-13S	8.12	8.72	6.50	8.33	8.91	12.37	8.95
28-14P	6.11	6.70	4.44	6.27	6.86	10.31	6.90
28-14S	6.70	7.29	5.05	6.88	7.44	10.88	7.52
28-15P	7.13	7.72	5.53	7.35	7.94	11.33	7.99
28-15S	8.22	8.83	6.60	8.48	8.99	12.43	9.08
28-16P	6.27	6.88	4.70	6.50	7.08	10.49	7.13
28-16S	6.35	6.93	4.75	6.58	7.13	10.58	7.20
28-17P	5.36	5.94	3.74	5.56	6.12	9.51	6.12
28-17S	5.69	6.27	4.10	5.94	6.47	9.90	6.56
28-18P	5.15	5.73	3.53	5.40	5.96	9.39	6.02
28-18S	5.64	6.24	4.02	5.84	6.43	9.85	6.47
28-19P	5.25	5.83	3.63	5.45	6.02	9.45	6.11
28-19S	6.35	6.93	4.75	6.58	7.13	10.58	7.20
28-20P	6.17	6.77	4.54	6.39	6.93	10.38	7.01
28-20S	6.86	7.44	5.25	7.08	7.64	11.07	7.69
28-21P	7.35	7.97	5.71	7.57	8.12	11.57	8.20
28-21S	8.33	8.93	6.75	8.59	9.15	12.54	9.19
28-22P	7.24	7.84	5.61	7.44	8.00	11.44	8.07
28-22S	8.61	9.19	6.99	8.83	9.39	12.82	9.45
28-766P	8.48	9.06	6.83	8.65	9.23	12.65	9.29
28-766S	10.49	11.09	8.87	10.70	11.29	14.74	11.33
32-01P	7.99	8.52	6.22	9.29	9.36	13.94	9.82
32-01S	9.80	10.34	8.00	11.09	11.18	15.76	11.63
32-02P	8.28	8.83	6.50	9.58	9.69	14.27	10.12
32-02S	9.60	10.15	7.87	10.96	11.02	15.62	11.46
32-03P	8.76	9.29	6.99	10.05	10.12	14.75	10.59
32-03S	10.68	11.22	8.91	11.98	12.06	16.68	12.52
32-04P	6.11	6.60	4.32	7.41	7.44	12.06	7.94
32-04S	6.99	7.52	5.21	8.28	8.33	12.97	8.83
32-05P	7.64	8.18	5.84	8.93	8.99	13.61	9.47
32-05S	8.48	8.95	6.70	9.77	9.82	14.44	10.31
32-06P	8.22	8.76	6.45	9.51	9.58	14.22	10.05
32-06S	11.67	12.21	9.90	13.01	13.06	17.67	13.55
32-07P	7.79	8.31	6.02	9.14	9.17	13.76	9.60
32-07S	9.90	10.44	8.12	11.22	11.29	15.92	11.76
32-08P	8.52	9.06	6.75	9.82	9.88	14.47	10.36
32-08S	8.63	9.17	6.86	9.95	10.01	14.59	10.47
32-09P	7.31	7.84	5.53	8.61	8.65	13.27	9.15
32-09S	8.31	8.86	6.56	9.60	9.72	14.31	10.15
32-10P	8.22	8.76	6.45	9.51	9.58	14.22	10.05
32-10S	8.93	9.47	7.18	10.25	10.34	15.00	10.77
32-101P	17.99	18.51	16.20	19.29	19.34	23.95	19.83
32-101S	16.83	17.37	15.06	18.12	18.20	22.83	18.66
32-102P	13.25	13.76	11.46	14.55	14.59	19.22	15.08
32-102S	15.41	15.94	13.61	16.71	16.78	21.37	17.24
32-12P	6.35	6.88	4.55	7.67	7.72	12.37	8.20
32-12S	7.94	8.48	6.15	9.23	9.29	13.89	9.77
32-13P	7.03	7.57	5.26	8.33	8.42	13.02	8.87
32-13S	8.05	8.59	6.26	9.36	9.42	14.03	9.88

★LARGER QUANTITY DISCOUNTS SHOWN ON FOLLOWING PAGE

BUNKER RAMO AMPHENOL MS and AN Connectors

MS CONNECTORS (CONTINUED)

Insert	Net Each, Lots of 1-9* Shell Style 3100A	3101A	3102A	3106A	3106B	3108A	3108B
32-15P	$ 9.69	$10.16	$ 7.89	$10.98	$11.03	$15.64	$11.50
32-15S	10.64	11.18	8.86	11.93	11.98	16.62	12.47
32-17P	9.57	10.10	7.79	10.88	10.96	15.54	11.39
32-17S	10.47	11.02	8.70	11.78	11.85	16.43	12.31
32-414P	11.78	12.31	10.01	13.08	13.14	17.78	13.61
32-414S	15.74	16.28	13.94	17.03	17.11	21.71	17.56
36-01P	8.05	8.28	5.40	9.14	9.30	14.16	9.90
36-01S	10.05	10.34	7.42	11.13	11.33	16.19	11.93
36-02P	11.29	11.55	8.63	12.37	12.54	17.39	13.14
36-02S	14.31	14.55	11.65	15.39	15.61	20.41	16.19
36-03P	11.55	11.78	8.87	12.58	12.82	17.61	13.40
36-03S	14.77	15.02	12.11	15.81	16.05	20.89	16.63
36-04P	11.46	11.73	8.83	12.52	12.73	17.56	13.33
36-04S	13.58	13.81	10.92	14.59	14.85	19.66	15.43
36-05P	14.16	14.42	11.50	15.18	15.43	20.26	16.04
36-05S	16.78	17.01	14.14	17.82	18.05	22.87	18.64
36-06P	14.03	14.27	11.35	15.08	15.33	20.13	15.92
36-06S	17.18	17.44	14.53	18.21	18.46	23.26	19.06
36-07P	11.07	11.31	8.42	12.11	12.37	17.18	12.95
36-07S	12.21	12.47	9.57	13.27	13.51	18.33	14.12
36-08P	10.70	10.98	8.07	11.78	11.98	16.83	12.58
36-08S	11.46	11.73	8.83	12.52	12.73	17.56	13.33
36-09P	12.73	13.01	10.10	13.81	14.03	18.86	14.59
36-09S	15.45	15.71	12.82	16.52	16.73	21.58	17.33
36-10P	10.58	10.79	7.94	11.61	11.85	16.68	12.43
36-10S	11.39	11.65	8.76	12.47	12.69	17.50	13.27
36-13P	9.08	9.30	6.43	10.12	10.36	15.17	10.96
36-13S	10.38	10.64	7.72	11.44	11.65	16.48	12.26
36-14P	14.12	14.32	11.44	15.13	15.39	20.17	15.97
36-14S	15.08	15.34	12.43	16.15	16.35	21.17	16.93
36-15P	8.95	9.23	6.32	10.03	10.25	15.08	10.85
36-15S	9.85	10.10	7.20	10.92	11.13	15.97	11.73
36-21P	14.12	14.32	11.44	15.13	15.39	20.17	15.97
36-21S	17.11	17.37	14.46	18.14	18.40	23.20	18.96
36-403P	12.73	13.01	10.10	13.81	14.03	18.86	14.59
36-403S	17.11	17.37	14.46	18.14	18.40	23.20	18.96
36-404P	14.81	15.06	12.16	15.84	16.07	20.94	16.68
36-404S	17.50	17.78	14.87	18.58	18.78	23.63	19.38
36-405P	17.49	17.72	14.85	18.55	18.76	23.61	19.34
36-405S	21.92	22.20	19.29	23.00	23.20	28.05	23.80
36-406P	15.51	15.76	12.86	16.60	16.80	21.64	17.39
36-406S	22.94	23.18	20.28	24.02	24.24	29.04	24.82
36-407P	17.50	17.78	14.87	18.58	18.78	23.63	19.38
36-407S	24.62	24.88	21.97	25.68	25.90	30.73	26.50
40-01P	11.09	11.29	7.64	14.62	....	....	13.81
40-01S	13.88	14.04	10.43	17.37	....	....	16.60
40-02P	10.58	10.75	7.11	14.07	....	....	13.27
40-02S	11.87	12.06	8.28	15.37	....	....	14.57
40-03P	14.16	14.32	10.68	17.67	....	....	16.86
40-03S	16.24	16.39	12.80	19.73	....	....	18.94
40-04P	17.46	17.61	13.99	20.96	....	....	20.15
40-04S	18.96	19.19	15.51	22.50	....	....	21.69
40-05P	18.86	19.06	15.41	22.37	....	....	21.58
40-05S	23.61	23.76	20.13	27.12	....	....	26.30
40-09P	14.81	15.00	11.33	18.31	....	....	17.50
40-09S	20.13	20.36	16.68	23.62	....	....	22.85
40-10P	21.06	21.25	17.59	24.57	....	....	23.76
40-10S	24.30	24.49	20.82	27.80	....	....	26.99
40-60P	32.78	32.93	30.00	35.56	....	....	34.94
40-60S	33.19	33.31	30.41	35.97	....	....	35.34

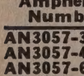
CAP AND CHAIN ASSEMBLIES

Fits MS and 97 type receptacles and plugs. Provides protection against live circuits, dirt and dust when connector is not in use. Add P to the part number for plug cap and chain.

Cap and Chain: Amphenol Number	Shell Size	Net Ea. 1-9*	Cap Only, No Chain: Amphenol Number	Shell Size	Net Ea. 1-9*
9760-8	8S	#	9760-8G	8S	#
9760-10	10S, SL	$0.69	9760-10G	10S, SL	$0.54
9760-12	12, S, SL	.76	9760-12G	12, S, SL	.63
9760-14	14, 14S	.84	9760-14G	14, 14S	.69
9760-16	16, 16S	.91	9760-16G	16, 16S	.76
9760-18	18	1.08	9760-18G	18	.93
9760-20	20	1.19	9760-20G	20	1.04
9760-22	22	1.36	9760-22G	22	1.19
9760-24	24	1.58	9760-24G	24	1.43
9760-28	28	1.88	9760-28G	28	1.73
9760-32	32	2.18	9760-32G	32	2.05
9760-36	36	2.42	9760-36G	36	2.29
9760-40	40	#	9760-40G	40	#
9760-44	44	#	9760-44G	44	#
9760-48	48	#	9760-48G	48	#

#Prices on request.

CABLE CLAMPS



Sturdy Amphenol AN3057 Cable Clamp supports cable or wire at the plug or receptacle, prevents twisting or pulling at soldered connections.

Amphenol Number	Shell Size	Net Ea. 1-9*	Amphenol Number	Shell Size	Net Ea. 1-9*
AN3057-3	8S, 10S	$0.76	AN3057-20	32	$1.42
AN3057-4	12, 12S	.69	AN3057-24	36	1.89
AN3057-6	14, 14S	.69	AN3057-28	40	2.43
AN3057-8	16, 16S	.73	AN3057-32	44	#
AN3057-10	18	.77	AN3057-40	48	#
AN3057-12	20, 22	.82	97-3057-10-6†	18	1.34
AN3057-16	24, 28	1.02	97-3057-12-6†	20, 22	1.43

†Step-down type. #Prices on request.

MINIATURE AN 165 SERIES CONNECTORS

Economical, quality miniature connectors feature quick mate an disconnect with reliable bayonet coupling. Pressure- and weather proof. **Finish:** Aluminum shells with clear conversion seal. **Construction:** Internal rubber gasket cable clamp except those wit potting construction. **Inserts:** Hard dielectric, rubber faced fo environmental capability. Available in eight insert configuration with from 5–24 contacts in two shell sizes. **Contacts:** Gold ove silver-plated; available in X and W alternate positions. **Mounting** Small receptacles mount in 13/16" dia. hole, four .125 screw hole on 35/32" centers. Large receptacles mount in 1 1/16" hole with fou .125 screw holes on 1 5/16" centers. **Size:** Small plugs, 2 1/16" lg. 57/64" dia.; large plugs, 2 1/16" lg. x 1 9/64" dia. **Rated:** 500 volts rm except as otherwise indicated. **Weight:** 3 oz., average.

SMALL SIZE: FIVE #20 CONTACTS

Rated 600 volts rms.

Type	Pin Contacts: Amphenol Number 165-	Net Each, Lots of 1-49	50-99	Socket Contacts: Amphenol Number 165-	Net Each, Lots of 1-49	50-99
Plug	33	$4.51	$3.55	34	$6.12	$4.87
Recept.*	35	3.19	2.55	36	3.87	3.07
Plug†	33-1000	3.44	2.75	34-1000	4.37	3.48
Recept.†	35-1000	5.92	4.73	36-1000	8.97	7.14
Recept.	35-1002	7.54	6.01	36-1003	8.26	6.59

SMALL SIZE: NINE #20 CONTACTS

Plug	13	$4.69	$3.74	14	$7.21	$5.73
Recept.*	15	3.48	2.76	16	4.44	3.54
Plug	13-1000	3.81	3.04	14-1000	5.32	4.22
Recept.	15-1000	6.55	5.20	16-1000	8.12	6.47
Recept.	15-1002	7.60	6.07	16-1003	9.15	7.27

SMALL SIZE: EIGHT #20 AND ONE SHIELDED CONTACT

Recept.*	73	$6.72	$5.35	83	$10.97	$ 8.72
Plug	82	8.26	6.59	61-1008	12.93	10.30
Recept.†	73-1000	9.00	7.15	83-1000	14.18	11.29
Plug†	82-1000	7.10	5.65	61	11.14	8.80
Recept.	73-1001	9.56	7.60	83-1001	14.07	11.22

SMALL SIZE: TWELVE #20 CONTACTS

Plug	9	$4.94	$3.94	10	$ 7.36	$5.85
Recept.*	11	3.72	2.95	12	6.09	4.84
Plug†	9-1000	4.16	3.30	10-1000	7.04	5.62
Recept.†	11-1000	6.66	5.28	12-1000	10.56	8.42
Recept.	11-1002	8.03	6.38	12-1002	11.99	9.50

LARGE SIZE: FOURTEEN #16 CONTACTS

Plug	29	$ 7.30	$5.81	30	$10.14	$ 8.0
Recept.*	31	4.70	3.75	32	7.50	5.9
Plug†	29-1000	4.96	3.96	30-1000	8.79	6.9
Recept.†	31-1000	7.54	6.01	32-1000	11.36	9.0
Recept.	31-1003	10.08	8.03	32-1006	14.22	11.3

LARGE SIZE: NINETEEN #20 AND ONE SHIELDED CONTACT

Recept.*	84	$10.29	$8.18	85	$15.36	$12.2
Plug	86	11.44	9.12	62-1007	19.12	15.2
Recept.†	84-1000	11.79	9.42	85-1000	19.04	15.1
Plug†	86-1000	9.61	7.65	62	16.21	12.8
Recept.	84-1001	10.47	8.36	85-1001	19.98	15.9

LARGE SIZE: TWENTY-FOUR #20 CONTACTS

Plug	25	$ 8.46	$6.73	26	$11.12	$ 8.8
Recept.*	27	5.83	4.66	28	7.76	6.1
Plug†	25-1000	6.51	5.17	26-1000	10.03	8.0
Recept.†	27-1000	9.47	7.55	28-1000	16.18	12.9
Recept.	27-1005	11.88	9.46	28-1003	15.61	12.4

*Square flange. †Potting construction.

MS3057A CABLE CLAMPS & AN3420 BUSHIN

Clamp for rubber-covered cables protected by tubing. Both hal float so cable is always centered for maximum strain relief. W unjacketed cable or wire bundles, use bushing. Shell sizes 16 a larger require two "telescoping" bushings (one corresponding s AN3420 with one smaller).

MS3057A Cable Clamps: Amph. No. 97-3057-	MS No. MS-3057-	Shell Size	Net Ea., Lots 1-9*	AN3420 Bushings: Amph. No. 9779-513-	MS No. AN-3420-	I.D., In.	N E Lo 1-
....	....	....	.....	3	3	.130	$0.
1004	4A	10SL, 12S	$0.91	4	4	.220	
1007	6A	14, 14S	.91	6	6	.312	
1008	8A	16, 16S	.92	8	8	.437	
1010	10A	18	.92	10	10	.562	
1012	12A	20, 22	1.04	12	12	.625	
1016	16A	24, 28	1.13	16	16	.750	
1020	20A	32	1.47	20	20	.937	
1024	24A	36	1.77	24	24	1.250	

★QUANTITY DISCOUNTS FOR MS TYPES

Quantity In Lots	MS Connector: Discount	Multiplier	MS Fittings
10–49	−23%	0.770	Discounts vary with each item—complete price list on request
50–99	−31%	0.690	
100–999	−38%	0.620	

BUNKER RAMO

AMPHENOL MIL-Type Connectors

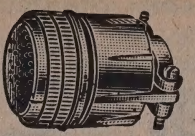
MS-E AND MS-R CONNECTORS

eature resistance to moisture, are pressurized up to one atmos-here differential (equivalent to MS-C), and are made of resilient ielectric of MIL-R-3065 neoprene rubber for environmental capa-ility. All MS-R and MS-E connectors, except MS3102R and IS3102E receptacles, have an individual wire grommet seal. **ther Information:** Construction, alternate position, voltage and urrent ratings are similar to hard dielectric MS connectors. Will lso mate with Series 172, hermetically-sealed receptacles. **MS-E eries:** As revised, is similar in size to the hard dielectric MS connectors; employs a mechanical, self-centering strain relief clamp. **IS-R Series:** Are ⅓ shorter and ⅓ lighter than the MS-E. omes with O-ring seal in the MS3106R plug to provide additional environmental capability.

Insert*	Net Each, Lots of 1-9*, Shell Style: MS-						
	3100E	3100R	3101E	3101R	3102†	3106E	3106R
8S-1P	......	$4.44	......	$4.56	$1.99	......	......
8S-1S	......	4.53	......	4.68	2.09	......	......
10S-2P	......	3.31	......	4.23	.75	......	$3.86
10S-2S	......	3.56	......	4.48	1.00	......	4.11
10SL-3P	$ 3.07	2.74	$ 3.07	2.99	1.00	$ 4.93	4.56
10SL-3S	3.52	3.19	3.51	3.44	1.47	5.39	5.01
10SL-4P	3.26	2.91	3.24	3.16	1.25	5.01	4.68
10SL-4S	3.49	3.14	3.47	3.39	1.49	5.24	4.91
12S-3P	2.99	2.15	2.99	2.22	.90	3.16	2.74
12S-3S	3.19	2.67	3.19	2.74	1.40	3.66	3.24
14S-1P	3.44	2.52	3.69	2.64	.90	3.57	3.19
14S-1S	3.47	2.91	3.49	3.01	1.30	3.99	3.61
14S-2P	3.47	2.27	3.47	2.39	.99	3.42	2.99
14S-2S	3.56	2.59	3.57	2.69	1.30	3.66	3.27
14S-5P	3.56	2.40	3.61	2.52	1.02	3.52	3.11
14S-5S	3.66	2.67	3.69	2.76	1.32	3.72	3.36
14S-6P	3.66	2.32	3.69	2.40	1.17	3.66	3.02
14S-6S	3.77	2.72	3.86	2.81	1.49	3.77	3.42
14S-7P	3.32	2.27	3.41	2.39	.90	3.36	2.99
14S-7S	3.44	2.64	3.49	2.72	1.24	3.67	3.31
14S-9P	3.17	2.24	3.24	2.32	.84	3.32	2.97
14S-9S	3.27	2.52	3.32	2.64	1.15	3.57	3.19
16-10P	3.67	3.06	3.74	3.19	1.19	4.24	3.74
16-10S	4.01	3.51	4.14	3.64	1.89	4.69	4.19
16-11P	3.51	3.01	3.66	3.16	1.40	4.19	3.69
16-11S	3.74	3.26	3.91	3.42	1.64	4.44	3.97
16S-1P	3.99	2.56	4.07	2.64	1.22	4.11	3.02
16S-1S	4.11	2.99	4.18	3.06	1.65	4.19	3.57
16S-4P	3.44	2.69	3.49	2.77	1.02	3.67	3.31
16S-4S	3.51	2.91	3.56	2.99	1.27	3.91	3.52
16S-5P	3.52	2.67	3.61	2.76	1.05	3.66	3.27
16S-5S	3.61	2.76	3.67	2.82	1.42	3.99	3.61
16S-8P	3.72	2.82	3.81	2.94	1.17	3.86	3.31
16S-8S	3.77	3.36	3.97	3.44	1.69	4.23	3.86
18-1P	4.26	3.19	4.36	3.31	1.49	4.44	3.64
18-1S	4.61	3.74	4.73	3.86	2.05	4.69	4.19
18-4P	3.86	3.26	3.97	3.36	1.25	4.19	3.69
18-4S	3.99	3.49	4.07	3.57	1.47	4.43	3.92
18-8P	4.41	3.51	4.49	3.61	1.44	4.53	3.97
18-8S	4.53	3.72	4.68	3.81	1.92	4.68	4.18
18-11P	4.14	3.26	4.24	3.36	1.39	4.26	3.69
18-11S	4.53	3.97	4.61	4.06	2.09	4.91	4.41
18-12P	4.02	3.31	4.14	3.42	1.32	4.24	3.74
18-12S	4.94	3.66	4.68	3.74	1.65	4.59	4.11
18-20P	3.89	3.27	3.99	3.41	1.27	4.23	3.72
18-20S	4.73	3.69	4.86	3.77	1.69	4.64	4.16
20-4P	4.14	3.27	4.19	3.42	1.42	4.56	4.14
20-4S	4.48	3.89	4.59	4.01	2.00	5.16	4.73
20-7P	4.48	3.27	4.61	3.42	1.42	4.61	4.14
20-7S	4.59	3.74	4.69	3.89	1.90	5.03	4.59
20-15P	4.59	3.56	4.69	3.67	1.72	4.86	4.41
20-15S	5.23	4.53	5.34	4.68	2.72	5.85	5.41
20-16P	4.49	3.57	4.64	3.92	1.67	4.89	4.43
20-16S	4.94	4.02	5.01	4.44	2.15	5.31	4.89
20-18P	4.73	3.61	4.86	3.74	1.74	4.91	4.44
20-18S	5.01	4.07	5.11	4.19	2.19	5.39	4.93
20-27P	4.94	3.77	5.23	3.69	1.82	5.09	4.43
20-27S	5.59	4.18	5.73	4.31	2.40	5.48	5.01
20-29P	5.09	3.81	5.23	3.97	1.99	5.43	4.43
20-29S	6.11	4.36	6.23	4.48	2.76	5.68	5.16
22-14P	5.48	4.24	5.73	4.31	2.17	5.59	4.59
22-14S	6.85	5.11	6.93	5.16	3.02	6.18	5.48
22-19P	5.06	4.33	5.31	4.39	1.89	5.39	4.68
22-19S	6.23	4.99	6.35	5.03	2.56	6.01	5.34
24-5P	5.14	4.07	5.48	4.16	2.17	5.91	5.28
24-5S	7.20	5.09	7.41	5.16	3.17	6.91	6.28
24-20P	4.86	3.61	5.09	3.69	1.89	5.44	4.83
24-20S	5.95	4.19	6.20	4.26	2.44	6.00	5.41
24-28P	5.93	4.18	6.20	4.24	2.72	6.20	5.39
24-28S	8.15	5.48	8.27	5.56	4.01	7.28	6.68
28-2P	5.51	4.26	5.85	4.53	2.27	5.98	5.26
28-2S	6.85	5.09	7.10	5.34	3.07	6.78	6.03
28-11P	6.45	4.64	6.85	4.91	2.72	6.70	5.59
28-11S	8.83	5.76	9.19	6.00	3.81	7.62	6.73
28-12P	6.11	4.64	6.45	4.91	2.69	6.85	5.59
28-12S	8.68	5.81	9.00	6.03	3.86	8.00	6.75
28-15P	6.95	5.78	7.41	6.01	3.56	7.50	6.75
28-15S	9.92	7.48	9.92	7.73	5.24	9.19	8.45
28-16P	5.81	4.69	6.11	4.94	2.57	6.41	5.68
28-16S	7.33	5.68	7.70	5.91	3.51	7.35	6.61
28-20P	6.48	5.74	6.85	5.98	3.72	7.45	6.70
28-20S	7.95	7.20	8.27	7.45	5.19	8.92	8.17
28-21P	7.18	5.41	7.41	5.66	3.67	7.62	6.36
28-21S	9.92	7.28	9.92	7.57	5.59	9.02	8.27
32-7P	8.12	7.11	8.45	7.18	3.86	9.34	7.62
32-7S	11.19	8.42	11.57	8.48	5.14	10.35	8.87
36-10P	9.44	8.03	9.92	8.12	4.56	11.26	8.27
36-10S	13.04	9.24	13.43	9.34	5.76	12.37	9.44

how full number when ordering; i.e., **MS3100E**-8S-1P. †Add ffix **E** or **R** (i.e., MS3102**E** or MS3102**R**).

MS-E AND MS-R QUANTITY DISCOUNTS; 10–49, 10%; -99, 20%; 100–199, 34%.



MS-E

MS-R & Poke "R"

69 SERIES POKE "R" CONNECTORS

Similar to MS-R connectors, but exceed the capability of the MS-R. Crimp-type contacts save labor costs; assemble faster by semi-skilled labor while producing a reliable terminating conductor without the possibility of cold solder joints. Also facilitate easy removal of contact for rewiring at any time. Gold-plated contacts provide continual, low contact resistance by eliminating all possibility of tarnish. Tested at factory to maintain their voltage and 100 megohms min. insulation resistance after altitude cycling at 70,000 feet for 30 minutes while entirely immersed in water. **Prefix Indicates Shell Type: 69-0R** equivalent to MS3100; 69-**1R**=MS3101 and 69-**6R**=MS3106 (see MS listing at left).

ACCESSORY TOOLS

Amphen. No.	Description	Net Each
294-57	Crimping tool kit (#12, 16 and 20)	$160.00
294-71	Shield. contact insertion & removal tool, #16	11.57
294-126	Four indent #20, #16, #12 contacts crimp tools	108.46
294-243	Turret head crimp tool #20, #16, #12	174.23
294-39	Insertion & removal tool, #16 contact size	12.35
294-40	Same, but #12 contact size	10.23

POKE "R" CONNECTORS

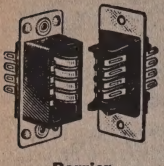
Supplied with contacts and sealing plugs, as listed.

Insert*	69-0R Shell		69-1R Shell		69-6R Shell	
	Net Each, Lots		Net Each, Lots		Net Each, Lots	
	1-49	50-99	1-49	50-99	1-49	50-99
10SL-3P•	$ 4.88	$ 3.88	$ 4.94	$ 3.94	$ 4.89	$ 3.90
10SL-3S•	5.51	4.39	5.58	4.44	5.53	4.40
10SL-4P•	5.08	4.04	5.11	4.07	5.08	4.04
10SL-4S•	5.51	4.39	5.54	4.42	5.51	4.39
12S-3P	4.28	3.40	4.33	3.44	4.94	3.94
12S-3S	4.71	3.75	4.76	3.79	5.38	4.28
14S-2P†	4.36	3.47	4.41	3.51	4.88	3.88
14S-2S†	5.18	4.12	5.26	4.19	5.69	4.54
14S-5P‡	4.64	3.70	4.74	3.78	5.18	4.12
14S-5S‡	5.68	4.52	5.73	4.56	6.21	4.95
14S-6P•	5.03	4.00	5.09	4.06	5.56	4.43
14S-6S•	6.16	4.91	6.21	4.95	6.70	5.33
14S-7P#	4.36	3.47	4.41	3.51	4.88	3.88
14S-7S#	4.99	3.98	5.08	4.04	5.53	4.40
14S-9P	4.23	3.36	4.28	3.40	4.91	3.91
14S-9S	4.61	3.67	4.63	3.68	5.29	4.22
16S-1P§	5.69	4.54	5.76	4.59	6.38	5.08
16S-1S§	7.13	5.68	7.20	5.73	7.82	6.22
16S-4P	5.08	4.04	5.13	4.08	5.73	4.56
16S-4S	5.51	4.39	5.56	4.43	6.16	4.91
16S-8P†	5.53	4.40	5.58	4.44	6.20	4.93
16S-8S†	6.55	5.21	6.63	5.28	7.21	5.75
16-10P•	6.05	4.81	6.10	4.85	6.71	5.35
16-10S•	7.15	5.69	7.20	5.73	7.83	6.24
18-1P	6.05	4.81	6.08	4.84	7.06	5.63
18-1S	8.10	6.45	8.13	6.48	9.05	7.21
18-4P	5.44	4.34	5.48	4.36	6.41	5.11
18-4S	6.28	5.00	6.30	5.01	7.23	5.76
18-8P§	6.48	5.16	6.53	5.20	7.46	5.95
18-8S§	7.55	6.01	7.58	6.04	8.52	6.78
18-11P†	7.48	5.96	7.52	5.99	8.60	6.85
18-11S†	9.30	7.41	9.37	7.46	10.42	8.30
20-7P•	6.15	4.89	6.23	4.96	7.20	5.73
20-7S•	7.77	6.18	7.83	6.24	8.83	7.04
20-15P§	7.92	6.30	7.97	6.34	8.97	7.14
20-15S§	10.60	8.45	10.67	8.50	11.47	9.14
20-16P	6.98	5.56	7.05	5.61	8.02	6.38
20-16S	9.12	7.26	9.20	7.33	10.17	8.10
20-18P	7.20	5.73	7.25	5.77	8.25	6.57
20-18S	9.49	7.55	9.59	7.63	10.54	8.39
20-27P	7.20	5.73	7.25	5.77	8.25	6.57
20-27S	10.00	7.97	9.99	7.95	11.04	8.79
20-29P§	7.40	5.89	7.45	5.93	8.45	6.73
20-29S§	10.77	8.58	10.82	8.62	11.82	9.42
22-14P	7.98	6.36	8.02	6.38	9.24	7.35
22-14S	11.76	9.36	11.79	9.39	13.01	10.36
24-20P	7.77	6.18	7.83	6.24	9.12	7.26
24-20S	10.35	8.25	10.40	8.29	11.66	9.28
24-28P	8.97	7.14	9.03	7.20	10.27	8.18
24-28S	13.81	11.00	13.88	11.05	15.11	12.04
28-11P	10.19	8.11	10.25	8.17	11.46	9.12
28-11S	15.33	12.21	15.40	12.26	16.57	13.19
28-12P#	9.69	7.71	9.75	7.77	10.75	8.57
28-12S#	15.06	12.00	15.11	12.04	16.30	12.98
28-15P•	11.02	8.78	11.12	8.86	12.27	9.78
28-15S•	18.14	14.44	18.20	14.50	19.39	15.44
28-20P	10.20	8.13	10.25	8.17	11.46	9.12
28-20S	14.66	11.68	14.73	11.73	15.90	12.66
28-21P	11.22	8.94	11.29	8.99	12.46	9.92
28-21S	18.64	14.84	18.69	14.88	19.87	15.83
32-7P	14.26	11.36	14.31	11.40	16.43	13.09
32-7S	22.51	17.93	22.58	17.98	24.72	19.68
36-10P	15.05	11.98	15.10	12.02	17.67	14.07
36-10S	24.50	19.51	24.58	19.58	27.12	21.60

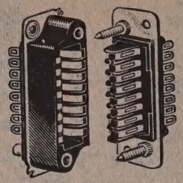
*Add suffix **(100)** when ordering; i.e., 69-0R-10SL-3P(**100**). Specify polarization W, X, Y or Z when ordering: †X or Y polarization only. ‡X polarization only. §W or Z polarization only. #No Z polarization. •Not polarized.

BUNKER RAMO AMPHENOL Rack, Panel Connectors

BLUE RIBBON® CONNECTORS



Barrier Polarization



Pin Polarization

Patented gold plated ribbon contact provides self-wiping action with low contact resistance. Steel mounting plates with float bushings for alignment in rack and panel applications. Impact and moisture resistant, high quality diallyl phthalate dielectric.

BARRIER POLARIZATION TYPES

Requires rectangular panel cutout. Polarization and contact alignment by construction of dielectric barriers at end of connectors (26-182, -183), or by barrier thickness between contacts. **Rating:** 5 amps, 750 V. Parts 26-4200 are float mounted, all others, fixed positions.

Amph. No. 26-	Contacts	*	Net Each, Lots of 1-9	10-49	50-99	100-249*
182	8	M	$1.34	$1.13	$0.92	$0.82
4100-8P	8	M	1.22	1.02	.83	.75
4100-16P	16	M	2.29	1.93	1.56	1.41
4100-24P	24	M	2.75	2.32	1.89	1.69
4100-32P	32	M	3.20	2.69	2.18	1.96
183	8	F	2.11	1.77	1.45	1.30
4100-8S	8	F	2.23	1.68	1.34	1.21
4100-16S	16	F	3.20	2.40	1.93	1.73
4100-24S	24	F	3.87	2.90	2.31	2.10
4100-32S	32	F	4.57	3.42	2.71	2.47
4200-8S	8	F	1.99	1.69	1.37	1.22
4200-16S	16	F	2.91	2.45	1.98	1.78
4200-24S	24	F	3.44	2.90	2.35	2.11
4200-32S	32	F	4.11	3.46	2.81	2.52

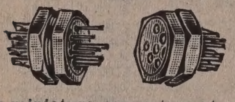
PIN POLARIZATION TYPES

Polarized by two tapered posts which also align contacts prior to mating. **Rating:** 5 amps, 750 V.

159-16	16	M	$2.45	$2.07	$1.68	$1.50
159-24	24	M	2.77	2.32	1.89	1.70
159-32	32	M	3.49	2.93	2.39	2.15
190-16	16	F	3.12	2.63	2.14	1.92
190-24	24	F	3.73	3.14	2.55	2.29
190-32	32	F	4.40	3.70	3.01	2.70

*Type: M-Male, F-Female.

MINIATURE HEXAGON CONNECTORS



Quality miniature connectors at economy prices. Body of diallyl phthalate dielectric; gold-over-silver contacts. Rated 7.5 amps, 500 V rms at sea level.

RACK AND PANEL WITH HEX NUT (ILLUSTRATED)

No. 126-	Description	Net Each, Lots of 1-49	50-99	100-249
010	5-pin plug	$0.80	$0.64	$0.52
011	5-pin socket	1.26	1.00	.84
191	7-pin plug	.94	.74	.61
192	7-pin socket	1.60	1.26	1.06
012	9-pin plug	1.08	.86	.71
013	9-pin socket	1.98	1.57	1.31

RECEPTACLES WITH LOCKING CLIP

214	4-pin plug	$0.95	$0.75	$0.62
216	5-pin plug	.85	.68	.57
218	5-pin socket	1.35	1.07	.89
197	7-pin plug	1.00	.80	.68
198	7-pin socket	1.69	1.34	1.12
219	9-pin plug	1.16	.93	.76
221	9-pin socket	2.07	1.64	1.36

CABLE TO PANEL WITH HOOD AND CLAMP

215	4-pin socket	$1.60	$1.26	$1.05
217	5-pin plug	1.74	1.38	1.16
223	5-pin socket	2.26	1.79	1.49
195	7-pin plug	1.92	1.53	1.26
196	7-pin socket	2.59	2.05	1.71
220	9-pin plug	2.07	1.64	1.36
222	9-pin socket	2.96	2.35	1.95

KEYED SHELLS

For rack and panel or module applications requiring additional keying or connector protection. Notched keys in shell provide a variety of positioned connectors. Rated 5 amps, 800 V.

PLUGS

Amph. No. 26-	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249*
4101-8P	8	$2.40	$2.03	$1.65	$1.48
4101-16P	16	3.63	3.06	2.47	2.23
4101-24P	24	4.19	3.52	2.87	2.57
4101-32P	32	4.81	4.04	3.28	2.94
4102-8P	8	2.40	2.03	1.65	1.48
4102-16P	16	3.63	3.06	2.47	2.23
4102-24P	24	4.19	3.52	2.87	2.57
4102-32P	32	4.81	4.04	3.28	2.94

MATING RECEPTACLES

Amph. No. 26-	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249*
4201-8S	8	$2.77	$2.33	$1.90	$1.70
4201-16S	16	3.77	3.18	2.57	2.31
4201-24S	24	4.51	3.80	3.08	2.76
4201-32S	32	5.23	4.41	3.58	3.22
4202-8S	8	2.77	2.33	1.90	1.70
4202-16S	16	3.77	3.18	2.57	2.31
4202-24S	24	4.51	3.80	3.08	2.76
4202-32S	32	5.23	4.41	3.58	3.22

CABLE TO PANEL TYPES WITH KEYED LATCH-LOCK SHELLS

With end cable clamp (26-4301) or right angle cable clamp (26-4501) on the plug; both units mate with receptacle 26-4401. With notched keying to avoid cross-mating.

PLUGS

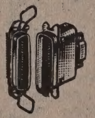
Amph. No. 26-	Contacts	*	Net Each, Lots of 1-9	10-49	50-99	100-249*
4301-8P	8	M	$6.19	$5.20	$4.22	$3.80
4301-16P	16	M	7.76	6.53	5.31	4.77
4301-24P	24	M	8.70	7.31	5.93	5.34
4301-32P	32	M	9.69	8.15	6.61	5.95
4301-8S	8	F	7.52	6.33	5.13	4.62
4301-16S	16	F	8.39	7.05	5.72	5.14
4301-24S	24	F	9.79	8.24	6.69	6.01
4301-32S	32	F	10.59	8.91	7.24	6.51
4501-8P	8	M	6.19	5.20	4.22	3.80
4501-16P	16	M	7.76	6.53	5.31	4.77
4501-24P	24	M	8.70	7.31	5.93	5.34
4501-32P	32	M	9.69	8.15	6.61	5.95
4501-8S	8	F	6.97	5.85	4.76	4.27
4501-16S	16	F	8.39	7.05	5.72	5.14
4501-24S	24	F	9.47	7.97	6.47	5.81
4501-32S	32	F	10.45	8.80	7.13	6.41

MATING RECEPTACLES

4401-8P	8	M	$3.73	$3.14	$2.55	$2.29
4401-16P	16	M	4.92	4.12	3.35	3.02
4401-24P	24	M	5.53	4.64	3.78	3.39
4401-32P	32	M	6.14	5.17	4.19	3.78
4401-8S	8	F	4.55	3.83	3.10	2.80
4401-16S	16	F	5.56	4.67	3.79	3.41
4401-24S	24	F	6.28	5.28	4.28	3.85
4401-32S	32	F	7.07	5.95	4.83	4.35

*Type: M-Male, F-Female.

MICRO RIBBON® MINIATURE CONNECTORS

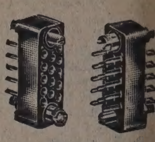


Extremely small connectors for dependable use where miniaturization is needed. Smooth, easy insertion and extraction. Self-wiping and cleaning. Double sided, flexing action of both contact members for added reliability. Available in up to 50-contact arrangements. Diallyl phthalate dielectric bodies. **Rating:** 700 VDC at sea level, 200 VDC at 70,000 feet. Shells, cadmium-plated brass with clear chromate finish.

Amph. No 57-	*	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249*
10140	†	14	$2.14	$1.79	$1.46	$1.32
20140	‡	14	2.19	1.85	1.49	1.35
30140	§	14	4.10	3.44	2.80	2.53
40140	#	14	2.69	2.28	1.85	1.67
10240	†	24	2.86	2.39	2.07	1.74
20240	‡	24	2.91	2.45	1.99	1.79
30240	§	24	4.50	3.79	3.06	2.77
40240	#	24	3.22	2.69	2.19	1.97
10360	†	36	3.27	2.75	2.23	2.01
20360	‡	36	3.46	2.82	2.29	2.06
30360	§	36	5.62	4.64	3.75	3.40
40360	#	36	3.47	2.91	2.35	2.11
10500	†	50	4.31	3.64	2.94	2.64
20500	‡	50	4.36	3.68	2.98	2.68
30500	§	50	6.04	5.08	4.13	3.72
40500	#	50	4.53	3.82	3.07	2.77

***Type:** †Plug; ‡receptacle; for rack and panel use. §Plug with cable clamp; #receptacle; for cable to panel use.

MINIATURE RECTANGULAR CONNECTORS

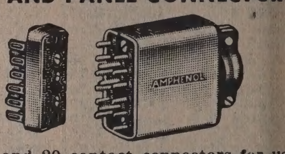


Rectangular connectors of a miniature size, intended for use wherever a circuit must be re-routed, made or broken in the interior of the equipment. Contacts and polarizing pins are gold over silver-base plating; will not tarnish or corrode. D electric bodies are of melamine. **Voltag Rating:** Types A and B, 700 V rms at se level between contacts and 600 V rms a sea level between contacts and groun with a current of 17 amps; Type C and D 600 V rms with a current of 7.5 amp **Insertion Force:** 15 lbs., minimum to 4 lbs., maximum. **Withdrawal Force:** 1 lb minimum to 4 lbs., maximum.

No. 126-	Contacts	Net Each, Lots of 1-49	50-99	100-24
016*	7 p.	$1.52	$1.20	$1.00
017*	7 s.	2.13	1.69	1.40
204*	15 p.	2.15	1.70	1.41
205*	15 s.	3.95	3.11	2.57
206*	18 p.	**	**	**
207*	18 s.	**	**	**
173†	14 p.	2.64	2.08	1.72
174†	14 s.	4.24	3.34	2.77
199†	18 p.	2.65	2.09	1.73
189†	18 s.	4.48	3.54	2.94
171†	21 p.	**	**	**
172†	21 s.	**	**	**
188†	34 p.	3.91	3.10	2.56
187†	34 s.	7.14	5.65	4.68

Current Rating: *17 amps (Types A an B). †7.5 amps (Types C and D). **Price on request. **Contacts:** p.-pins; s.-socket

SERIES 126 RACK AND PANEL CONNECTOR



11, 15 and 20 contact connectors for u on rack and panel mountings. All ha eyelets inserted in the mounting holes f added strength, holes for wiring instead the usual hooks on the male contacts, a interlocking barriers to prevent accident shorting. All models can be supplied wi or without a protective can and cab clamp as shown. Molded of mica-fille phenolic. Contacts are gold over silver a molded into the insert. **Voltage Ratin** 900 volts rms, 60 Hz, at sea level. Conta size 12 rated 23 A; size 16 rated 13 size 20 rated 7.5 A. Also available to MI C-8384; specs and prices on request.

SPECIFICATIONS

Amphenol No. 126-	Description	Contacts No. 12	No. 20	Spa ing
804, 809	Male	2	9	.8
805, 808	Female	2	9	.8
151, 152	Male	3	12	1.1
150, 153	Female	3	12	1.1
806, 811	Male	4	16	1.6
807, 810	Female	4	16	1.6
812	Female	20*	......	...
813	Male	20*	......	...

*Size 16.

SERIES 126 PRICES

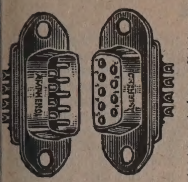
No. 126-	Contacts	Mtg. Screw	Net Each, Lots of 1-49	50-99	100 24
804*	11	#4	$1.12	$0.88	$0.7
809	11	#4	1.83	1.44	1.2
805*	11	#4	1.16	.92	.7
808	11	#4	1.87	1.48	1.2
151*	15	#6	1.48	1.17	.9
152	15	#6	2.87	2.27	1.8
150*	15	#6	1.12	.88	.7
153	15	#6	2.23	1.77	1.4
806*	20	#4	1.78	1.40	1.1
811	20	#4	2.84	2.25	1.8
807*	20	#4	1.42	1.11	.9
810	20	#4	2.49	1.96	1.6
812*	20	#4	1.49	1.19	.9
813*	20	#4	3.23	2.55	2.1

*Insert only, without shell and clamp.

★Larger Quantity Prices on Request.

BUNKER RAMO AMPHENOL Rack, Panel Connectors

MIN RAC® 17 MINIATURE RACK AND PANEL CONNECTORS WITH POKE-HOME® CONTACTS



Half the size and weight of standards. "Poke Home" contacts are soldered to leads outside the connector, then "Poked Home" for quick, simple and reliable assembly. No damage or difficulty from "close in" soldering. From 9 to 50 contacts. Solder type contacts take up to #20 AWG wire. Crimp type take #20, #22 or #24 AWG wire. Steel shells with either clear chromate (listed) or gold iridite (change 2nd number from 0 to 1, e.g., -21090), over cadmium finish. Current rating: 7.5 A. Prices listed less cable housing.

PLUGS WITH ZYTEL‡ 101 NYLON INSERTS

Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
7-20090*	9	$1.36	$1.23	$1.02	$0.82	$0.75	$0.69
7-20150*	15	1.86	1.69	1.41	1.12	1.04	.94
7-20250*	25	2.63	2.38	1.95	1.57	1.42	1.30
7-20370*	37	3.60	3.27	2.71	2.18	1.94	1.79
7-20500*	50	4.58	4.16	3.43	2.76	2.52	2.30
7-20090-1†	9	1.36	1.23	1.02	.82	.75	.69
7-20150-1†	15	1.86	1.69	1.41	1.12	1.04	.94
7-20250-1†	25	2.63	2.38	1.95	1.57	1.42	1.30
7-20370-1†	37	3.60	3.27	2.71	2.18	1.94	1.79
7-20500-1†	50	4.58	4.16	3.43	2.76	2.52	2.30

MATING RECEPTACLES

Amphenol No.	Contacts	1-9	10-49	50-99	100-249	250-499	500-999
7-10090*	9	$1.86	$1.69	$1.41	$1.12	$1.04	$0.94
7-10150*	15	2.67	2.43	2.01	1.60	1.47	1.34
7-10250*	25	3.97	3.60	2.98	2.40	2.18	1.99
7-10370*	37	5.65	5.10	4.21	3.39	3.06	2.81
7-10500*	50	7.20	6.54	5.40	4.35	3.97	3.63
7-10090-1†	9	1.86	1.69	1.41	1.12	1.04	.94
7-10150-1†	15	2.67	2.43	2.01	1.60	1.47	1.34
7-10250-1†	25	3.97	3.60	2.98	2.40	2.18	1.99
7-10370-1†	37	5.65	5.10	4.21	3.39	3.06	2.81
7-10500-1†	50	7.20	6.54	5.40	4.35	3.97	3.63

Solder contacts; for float mount, add suffix -5; prices slightly igher. †Crimp contacts; for float mount, change suffix to -6; rices slightly higher. ‡DuPont registered trademark.

FIXED PIN MIN RAC 17

ow cost, with screw machine-type fixed contacts; dimensions, nounting and panel cut-outs same as standard 17 series. Solder in contacts; max. wire size, 20 gauge. Glass-filled nylon dielectric.

PLUGS

Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-90090-16	9	$1.25	$1.13	$0.94	$0.75	$0.69	$0.63
17-90150-16	15	1.77	1.60	1.33	1.07	.97	.89
17-90250-16	25	2.55	2.31	1.92	1.54	1.41	1.29
17-90370-16	37	3.49	3.16	2.62	2.10	1.92	1.75
17-90500-16	50	4.52	4.10	3.39	2.73	2.50	2.28

MATING RECEPTACLES

Amphenol No.	Contacts	1-9	10-49	50-99	100-249	250-499	500-999
17-80090-16	9	$1.80	$1.62	$1.34	$1.08	$0.99	$0.90
17-80150-16	15	2.63	2.38	1.97	1.58	1.45	1.32
17-80250-16	25	3.99	3.62	3.00	2.41	2.20	2.02
17-80370-16	37	5.61	5.06	4.17	3.37	3.03	2.78
17-80500-16	50	7.19	6.54	5.38	4.35	3.95	3.61

HIGH-TEMP. HARD DIELECTRIC PLUGS

Diallyl phthalate glass-filled per MIL-M-19833, Type GDI-30.

Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-70090*	9	$2.44	$2.20	$1.84	$1.66	$1.43	$1.37
17-70150*	15	3.56	3.22	2.71	2.45	2.11	2.03
17-70250*	25	5.29	4.82	3.99	3.59	3.07	2.95
17-70370*	37	7.46	6.83	5.63	5.08	4.35	4.18
17-70500*	50	9.80	8.85	7.41	6.69	5.74	5.53
17-70090-1†	9	2.32	2.09	1.75	1.58	1.36	1.31
17-70150-1†	15	3.41	3.05	2.57	2.33	2.01	1.93
17-70250-1†	25	4.99	4.47	3.74	3.38	2.90	2.78
17-70370-1†	37	6.97	6.30	5.27	4.75	4.09	3.94
17-70500-1†	50	9.09	8.26	6.92	6.26	5.38	5.17

MATING RECEPTACLES

Amphenol No.	Contacts	1-9	10-49	50-99	100-249	250-499	500-999
17-60090*	9	$ 3.65	$ 3.28	$ 2.73	$ 2.54	$2.09	$2.01
17-60150*	15	5.38	4.85	4.05	3.64	3.11	2.99
17-60250*	25	8.66	7.79	6.46	5.80	4.93	4.72
17-60370*	37	12.50	11.25	9.34	8.38	7.13	6.83
17-60500*	50	16.29	14.98	12.46	11.17	9.51	9.08
17-60090-1†	9	3.51	3.17	2.63	2.36	2.01	1.93
17-60150-1†	15	5.39	4.85	4.04	3.64	3.11	2.98
17-60250-1†	25	8.30	7.46	6.20	5.57	4.73	4.54
17-60370-1†	37	11.95	10.75	9.06	8.02	6.83	6.55
17-60500-1†	50	16.09	14.38	12.02	10.71	9.11	8.74

*Solder contacts; †Crimp contacts.

CABLE CLAMP ASSEMBLIES FOR MIN RAC SERIES

Amphenol No.	Contacts	1-9	10-49	50-99	100-249	250-499	500-999
17-310-01	9	$1.23	$1.04	$0.83	$0.74	$0.62	$0.57
17-311-01	15	1.29	1.08	.85	.77	.64	.59
17-312-01	25	1.35	1.11	.89	.81	.68	.62
17-313-01	37	1.40	1.17	.94	.84	.70	.64
17-314-01	50	1.43	1.19	.95	.86	.71	.65
17-529*	9–37	.71	.64	.53	.44	.39	.33
17-770*	50	.71	.64	.53	.44	.39	.33

*Locking assemblies latch cable to panel with clamp assemblies.

No. 294-136 Crimping Tool—Net Each............ **$124.74**
No. 294-155 Insertion and Removal Tool—Net Each. **13.28**

ENCAPSULATED CONTACT MIN RAC 17

Crimp Poke-Home contacts. Extra depth of nylon dielectric at rear of connector protects contacts from arcing, shorting. No sleeving, potting necessary. Shell dimensions, specifications same as standard.

PLUGS

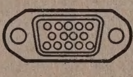
Amphenol No.	Contacts	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
17-20090-1 (390)	9	$1.41	$1.28	$1.06	$0.85	$0.78	$0.72
17-20150-1 (390)	15	1.92	1.73	1.44	1.16	1.06	.96
17-20250-1 (390)	25	2.64	2.39	1.96	1.58	1.42	1.31
17-20370-1 (390)	37	3.66	3.31	2.75	2.20	1.95	1.80
17-20500-1 (390)	50	4.62	4.19	3.47	2.78	2.54	2.33

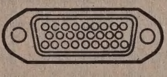
MATING RECEPTACLES

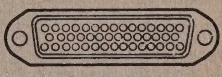
Amphenol No.	Contacts	1-9	10-49	50-99	100-249	250-499	500-999
17-10090-1 (390)	9	$1.91	$1.73	$1.43	$1.16	$1.06	$0.96
17-10150-1 (390)	15	2.70	2.45	2.03	1.62	1.48	1.36
17-10250-1 (390)	25	3.95	3.58	2.95	2.38	2.17	1.98
17-10370-1 (390)	37	5.67	5.12	4.24	3.41	3.07	2.83
17-10500-1 (390)	50	7.23	6.54	5.41	4.36	3.98	3.64

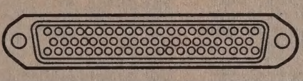
HIGH DENSITY MIN RAC 17

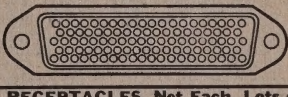
Offers 50% to nearly 100% more circuits han standard in the standard size shell. Each #24 size crimp Poke-Home contact arries 3 amps at 500 V rms. Shell dimensions and mounting same as standard. Glass-filled nylon dielectric. Wire size: #24, #26, #28 AWG.


Shell Size 9


Shell Size 15


Shell Size 25

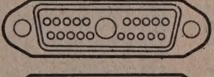

Shell Size 37

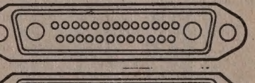

Shell Size 50

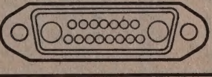
Contacts	Shell Size	Amphenol No.	PLUGS, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999	Amphenol No.	RECEPTACLES, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
14	9	17-90140-1	$2.28	$1.91	$1.72	$1.60	$1.41	$1.35	17-80140-1	$2.93	$2.41	$2.07	$1.95	$1.71	$1.63
26	15	17-90260-1	2.70	2.51	2.37	2.11	1.97	1.89	17-80260-1	4.34	3.11	2.97	2.61	2.47	2.29
44	25	17-90440-1	4.39	3.31	3.17	2.80	2.66	2.49	17-80440-1	6.29	4.32	4.16	3.66	3.50	3.23
65	37	17-90650-1	4.81	4.28	3.79	3.64	3.35	3.13	17-80650-1	6.99	5.79	5.09	4.91	4.48	4.25
98	50	17-90980-1	6.57	5.84	5.17	4.99	4.61	4.32	17-80980-1	9.78	8.04	7.06	6.85	6.25	5.95

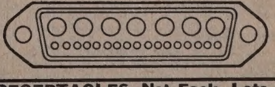
POWER/COAX MIN RAC 17

A variety of combinations available where oax must be terminated with power circuits. Power contacts are #20 size; coax are #1 shielded. Shell dimensions and mounting same as standard Crimp, Poke-Home ontacts; rated at 7.5 amps, 500 V rms (power max.). Glass-filled nylon dielectric.


Shell Size 25
1 Coax Contact


Shell Size 37


Shell Size 25
2 Coax Contacts

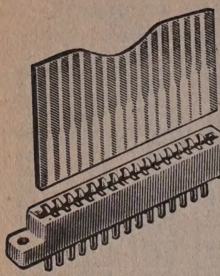

Shell Size 50

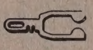
Contacts Power	Contacts Coax	Shell Size	Amphenol No.	PLUGS, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999	Amphenol No.	RECEPTACLES, Net Each, Lots of 1-9	10-49	50-99	100-249	250-499	500-999
0	3	15	17-90003-1	$1.32	$1.19	$1.06	$0.95	$0.85	$0.75	17-80003-1	$1.66	$1.49	$1.32	$1.20	$1.08	$0.96
15	2	25	17-90152-1	2.04	1.83	1.62	1.47	1.32	1.17	17-80152-1	3.23	2.90	2.58	2.34	2.10	1.86
25	2	37	17-90252-1	2.55	2.29	2.09	1.90	1.70	1.50	17-80252-1	4.21	3.77	3.44	3.13	2.80	2.47
17	7	50	17-90177-1	2.18	1.96	1.74	1.58	1.42	1.25	17-80177-1	2.53	2.28	2.03	1.83	1.65	1.46

PRINTED CIRCUIT CONNECTORS

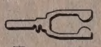
RECEPTACLES

—143 SERIES





Type 01



Type 03

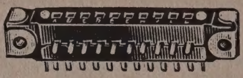
The contact is the secret of these connectors' effectiveness; gold plated tuning fork contacts firmly, but gently. Will form-fit any standard .055″ to .073″ board. Contacts are on .156″ centers. Rated 600 V rms, 5 amps.

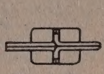
Contact Style

-01—Eyelet contact type. **-03**—Pin contact type. May be ordered with one contact replaced with a key, for positioning. When ordering, number indicates exactly what is desired: Example—143-010-01 indicates 143 Series, 10 contacts, -01 contact style.

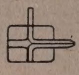
No. 143-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1M-2499
006-01	6	$1.08	$0.92	$0.76	$0.65	$0.58
010-01	10	1.13	.95	.80	.69	.61
012-01	12	1.24	1.05	.87	.75	.66
015-01	15	1.43	1.20	1.00	.86	.76
018-01	18	1.70	1.43	1.20	1.02	.90
022-01	22	2.04	1.71	1.43	1.23	1.09
036-01	36	3.95	3.30	2.77	2.38	2.10
006-03	6	1.08	.92	.76	.65	.58
010-03	10	1.13	.95	.80	.69	.61
012-03	12	1.24	1.05	.87	.75	.66
015-03	15	1.43	1.20	1.00	.86	.76
018-03	18	1.70	1.43	1.20	1.02	.90
022-03	22	2.04	1.71	1.43	1.23	1.09
036-03	36	3.95	3.30	2.77	2.38	2.10

PLUGS—133 SERIES





Type 21



Type 03

For use with printed circuit board requiring frequent mating and dis engagement, also for boards of non standard thickness. Contacts are o .156″ centers. Type 21 contact ta for use in cable to panel application using a mate to 143 Series connecto Rugged, gold plated contacts. Rate 600 V rms, 5 amps. May be ordere with contact omitted for keying.

Contact Types

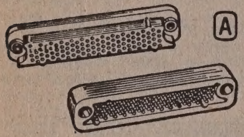
-21—Double Tail, solder type.

-03—Single Side Mount, pin type.

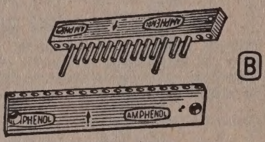
Stock Number Identification: No. 133-022-21 indicates 133 Series 22 contacts, 21 contact tail (double tail, solder type).

No. 133-	Contacts	Net Each, Lots of 1-49	50-99	100-249	250-999	1M-2499
006-21	6	$2.25	$1.87	$1.58	$1.35	$1.2
010-21	10	1.93	1.61	1.35	1.16	1.0
012-21	12	2.33	1.95	1.64	1.41	1.2
015-21	15	2.70	2.26	1.90	1.62	1.4
018-21	18	2.79	2.33	1.96	1.68	1.4
022-21	22	3.17	2.66	2.22	1.91	1.6
006-03	6	2.04	1.71	1.43	1.23	1.0
010-03	10	1.66	1.38	1.17	.99	.8
012-03	12	2.04	1.71	1.43	1.23	1.0
015-03	15	2.27	1.90	1.59	1.36	1.2
018-03	18	2.33	1.95	1.64	1.41	1.2
022-03	22	2.56	2.15	1.80	1.54	1.3

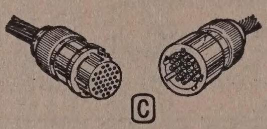
SERIES 220 THRU 223 MICRO-MINIATURE CONNECTORS, CONTACTS AND GUIDE PINS



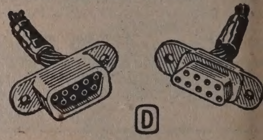
A



B



C



D

SERIES 220 MICRO-RAC® CONNECTORS (FIG. A)

Rack and panel connectors with monoblock body of polycarbonate resin. Polarization through trapezoidal mating area; molded-in slot-and-key arrangement. Float-mounted connectors. **52-Contact:** 1.888″ x .677″; 1.492″ mtg. ctrs. **104-Contact:** 3.017″ x .677″; 2.611″ mtg. ctrs. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

Amphenol No.	Contacts	Description	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
220-1N052	52	Plug	$1.93	$1.55	$1.35	$1.16	$1.00
220-2N052	52	Receptacle	1.68	1.34	1.18	1.00	.87
220-5	....	Cable clamp	1.50	1.20	1.06	.90	.78
220-1N104	104	Plug	2.40	1.92	1.68	1.44	1.25
220-2N104	104	Receptacle	2.08	1.67	1.46	1.25	1.08
220-6	.....	Cable clamp	1.56	1.24	1.09	.94	.81

SERIES 221 MULTI-PURPOSE STRIP CONNECTORS (FIG. B)

Economical connectors with highly versatile adaptability. May be used full 4″ or 6″ length or cut with scissors and stacked to any configuration desired. Material, black nylon; polycarbonate available on request. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

221-1560*	60	6″ plug	$0.82	$0.70	$0.61	$0.58	$0.51
221-1660*	60	6″ recept.	.68	.58	.51	.48	.43
221-2553†	53	4″ plug	.72	.62	.53	.50	.45
221-2653†	53	4″ recept.	.62	.52	.47	.44	.39
221-3580‡	80	4″ plug	.83	.71	.62	.58	.52
221-3680‡	80	4″ recept.	.82	.70	.61	.58	.51

Spacing: *.100″; †.075″; ‡.050″.

SERIES 222 MIGHTY-MITE® CABLE CONNECTORS (FIG. C)

Reliable, low cost connectors for cable-to-cable and cable-to-chassis application. Molded one-piece polycarbonate. **Spacing:** .085″ centers. Size: **19-Contact,** .621″ dia. x 2.618″ lg.; **31-Contact,** .746″ dia. x 2.948″ lg.; **61-Contact,** .996″ dia. x 3.530″ lg. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

Amphenol No.	Contacts	Description	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
222-11N19	19	Plug	$1.09	$0.90	$0.73	$0.62	$0.55
222-12N19	19	Receptacle	.87	.73	.59	.50	.44
222-518	.....	Cable clamp	1.83	1.52	1.23	1.05	.92
222-11N31	31	Plug	1.09	.89	.72	.62	.53
222-12N31	31	Receptacle	.87	.72	.59	.50	.44
222-519	.....	Cable clamp	1.96	1.61	1.31	1.11	.97
222-11N61	61	Plug	1.18	.97	.78	.66	.58
222-12N61	61	Receptacle	.93	.77	.62	.53	.47
222-520	.....	Cable clamp	4.47	3.70	2.99	2.54	2.22

SERIES 223 TINY TIM® NYLON CONNECTORS (FIG. D)

Screw-mount rack and panel connectors ideal for circuit module either potted or surface mounted and for cable-to-cable use. Meet MIL-C-8384B requirements. Trapezoidal mating for polarizatio Contact spacing, .100″ centers each row. Overall length: **5-Contact,** .843″; **9-Contact,** 1.043″; **17-Contact,** 1.443″; **25-Contac** 1.843″; **33-Contact,** 2.243″. Supplied less contacts. See "Wire-Form" and "Relia-Tac" contacts.

Amph. No.	Contacts	Description	Mtg. Ctrs.	Net Each, Lots of 1-9	10-49	50-99	100-249	250-499
223-1505	5	Plug	.593″	$0.49	$0.46	$0.41	$0.36	$0.3
223-1605	5	Receptacle	.593″	.49	.46	.41	.36	.3
223-1509	9	Plug	.793″	.51	.48	.44	.38	.3
223-1609	9	Receptacle	.793″	.51	.48	.44	.38	.3
223-1517	17	Plug	1.193″	.56	.51	.47	.40	.3
223-1617	17	Receptacle	1.193″	.56	.51	.47	.40	.3
223-1525	25	Plug	1.593″	.60	.56	.50	.44	.3
223-1625	25	Receptacle	1.593″	.60	.56	.50	.44	.3
223-1533	33	Plug	1.993″	.61	.57	.51	.45	.4
223-1633	33	Receptacle	1.993″	.61	.57	.51	.45	.4

INDIVIDUAL "WIRE-FORM" AND "RELIA-TAC" CONTACTS

For Amphenol Series 220–223 connectors. Current rating, 3 amp Both take 24, 26, 28 gauge solid wire; 24, 26, 28 gauge strande wire. **Wire-Form:** 4-member spring design. Gold clad copper allo wire in gold plated copper sleeves; .413″ long. **Relia-Tac:** Gol over-nickel on copper alloy body. Male, .388″ long; female, .40 long. Does not mate with Wire-Form. **Ask about solder-tail con tacts, special adapters, Ultra-Tac crimp contacts, special con tacts, guide pins and strain reliefs also available.**

Amph. No.	Description	Net Each, Lots of 1-99	100-999	1M-4999	5M-9999	10M-24,999
220-P01	Wire-Form male	$0.104	$0.082	$0.072	$0.06	$0.05
220-S01	Wire-Form female	.044	.036	.033	.027	.02
220-P02	Relia-Tac male	.086	.069	.06	.051	.04
220-S02	Relia-Tac female	.216	.172	.15	.13	.11
221-759*	Relia-Tac male	.144	.12	.112	.105	.09
221-760†	Relia-Tac female	.327	.276	.255	.228	.21

*For 221-3680 strips. †For 221-3580 strips. ***25M Up On Reques**

GUIDE PINS

Poke-Home® guide pins for polarizing, keying or connector alig ment. Supplement the keyed slots; can be used in conjunctio with either Relia-Tac or Wire-Form contacts. Insert into plu

Amph. No.	Type	Net Each, Lots of 1-9	10-49	50-99	100-249	250-4
221-535	Std. guide pin	$0.327	$0.18	$0.147	$0.131	$0.09
221-590	Groove retention	.556	.305	.251	.229	.16

AMPHENOL Miniature Connectors

MINNI-E® SERIES 67 MINIATURE CONNECTORS

Quick disconnect, multi-contact, miniature bayonet connectors are environment sealed with unitized back end grommet or provision for potting. Shells are polarized for easy mating alignment; single key on 12, 14 and 18 sizes, 5 keys for sizes 20 and 22. Spring-loaded coupling ring for positive locking action in bayonet slot; stainless steel slots and pins. Hooded contacts resist test prod damage. Contacts gold plated over silver. Visual engagement indicator built-in. Face seal gasket has individual barriers; hard insert dielectric. **Insulation Resistance:** "E" type following altitude-moisture resistance test, 1000 megs min.; MIL-C-5015 minimum following type "E" test, 100 megs. **Test Voltage:** 1500 V rms. 70,000 ft. on sealed connectors. **Vibration:** 10–2,000 Hz at 20 G's per Method 204 of MIL-STD-202A. **Temperature Cycling:** Per MIL-C-5015, Para. 4.5.3 increased to 257° F max., −67° F, min. Diallyl phthalate dielectric except hermetically sealed type. **Type P:** Potting mold meets MIL-C-5015. Indicated by P in number (example: 67-01**P**12-7S). Comes with disposable polyethylene potting form. **Type E:** Meets MIL-C-5015. With unitized grommet and clamp; individual wire seal. **Type J:** For use with jacketed cables; has waterproofing type cable clamp. **Type C:** General duty construction has standard type cable clamp to provide strong support for jacketed cables or unjacketed individual wire leads. When potted, meets requirements of "E" performance while providing a mechanical cable support. **Type H:** Glass dielectric hermetically sealed. **For X or W Positioning:** Specify by adding appropriate suffix, and **20c** (1–24), **18c** (25–99) or **15c** (100–199) to net price shown.

CABLE-TO-CABLE RECEPTACLES

WITH FORM FOR POTTING SEAL

o. on- cts	Pin Contacts				Socket Contacts			
	Amph. No. 67-01-	Net Each, Lots of 1-24	25-99	100-199	Amph. No. 67-01-	Net Each, Lots of 1-24	25-99	100-199
7	P12-7P	$10.70	$ 9.35	$ 8.00	P12-7S	$12.78	$11.16	$ 9.55
3	P12-60P	10.54	9.21	7.87	P12-60S	11.70	10.22	8.74
5	P14-5P	8.74	7.63	6.53	P14-5S	9.96	8.70	7.44
9	P14-9P	9.30	8.12	6.95	P14-9S	10.97	9.59	8.20
12	P14-12P	9.41	8.22	7.03	P14-12S	11.47	10.02	8.57
9	P14-61P	10.70	9.35	8.00	P14-61S	15.78	13.79	11.79
5	P14-63P	9.85	8.60	7.36	P14-63S	11.30	9.87	8.45
24	P18-24P	10.54	9.21	7.87	P18-24S	15.42	13.47	11.52
20	P18-62P	12.39	10.83	9.26	P18-62S	22.55	19.70	16.85
14	P18-64P	11.99	10.48	8.96	P18-64S	13.36	11.67	9.98
11	P18-65P	13.20	11.53	9.86	P18-65S	12.39	10.83	9.26
37	P20-37P	15.94	13.93	11.91	P20-37S	22.93	20.03	17.14
19	P20-66P	13.52	11.81	10.10	P20-66S	18.02	15.74	13.46
48	P22-48P	17.75	15.50	13.26	P22-48S	26.35	23.02	19.69
25	P22-67P	15.31	13.37	11.44	P22-67S	21.26	18.57	15.88
38	P22-68P	16.51	14.42	12.34	P22-68S	23.93	20.91	17.88
42	P22-69P	17.27	15.09	12.91	P22-69S	24.66	21.54	18.43

WITH INDIVIDUAL WIRE SEAL GROMMET

7	E12-7P	$13.60	$11.88	$10.16	E12-7S	$15.71	$13.72	$11.74
3	E12-60P	13.60	11.88	10.16	E12-60S	14.74	12.88	11.02
5	E14-5P	11.90	10.40	8.89	E14-5S	13.16	11.50	9.83
9	E14-9P	12.49	10.91	9.33	E14-9S	14.16	12.37	10.58
12	E14-12P	12.32	10.76	9.21	E14-12S	14.34	12.53	10.72
9	E14-61P	14.41	12.59	10.77	E14-61S	19.51	17.04	14.58
5	E14-63P	12.87	11.24	9.62	E14-63S	14.65	12.80	10.95
24	E18-24P	14.67	12.82	10.96	E18-24S	19.53	17.06	14.59
20	E18-62P	17.64	15.41	13.18	E18-62S	27.81	24.30	20.78
14	E18-64P	15.63	13.66	11.68	E18-64S	18.18	15.88	13.59
11	E18-65P	16.71	14.60	12.48	E18-65S	15.89	13.88	11.87
37	E20-37P	19.47	17.01	14.55	E20-37S	26.32	22.99	19.67
19	E20-66P	16.14	14.10	12.06	E20-66S	20.60	18.00	15.40
48	E22-48P	19.47	17.01	14.55	E22-48S	28.06	24.52	20.97
25	E22-67P	17.62	15.39	13.16	E22-67S	23.59	20.61	17.63
38	E22-68P	19.20	16.77	14.35	E22-68S	26.57	23.21	19.86
42	E22-69P	19.47	17.01	14.55	E22-69S	26.88	23.48	20.09

WITH CLAMP FOR JACKETED CABLE

7	J12-7P	$10.88	$ 9.51	$ 8.13	J12-7S	$12.99	$11.35	$ 9.71
3	J12-60P	10.76	9.40	8.04	J12-60S	11.90	10.40	8.89
5	J14-5P	17.64	15.41	13.18	J14-5S	18.86	16.47	14.09
9	J14-9P	18.20	15.90	13.60	J14-9S	19.86	17.35	14.84
12	J14-12P	18.33	16.01	13.70	J14-12S	20.35	17.78	15.20
9	J14-61P	19.58	17.11	14.63	J14-61S	24.68	21.56	18.44
5	J14-63P	18.44	16.11	13.78	J14-63S	20.26	17.70	15.14
24	J18-24P	11.52	10.06	8.61	J18-24S	16.38	14.31	12.24
20	J18-62P	13.34	11.65	9.97	J18-62S	23.48	20.51	17.54
14	J18-64P	12.94	11.30	9.67	J18-64S	14.34	12.53	10.72
11	J18-65P	14.16	12.37	10.58	J18-65S	13.34	11.65	9.97
37	J20-37P	22.62	19.76	16.90	J20-37S	29.48	25.76	22.03
19	J20-66P	20.18	17.63	15.08	J20-66S	24.66	21.54	18.43
48	J22-48P	25.33	22.13	18.93	J22-48S	33.92	29.64	25.35
25	J22-67P	22.88	19.99	17.10	J22-67S	28.83	25.19	21.54
38	J22-68P	24.10	21.05	18.01	J22-68S	31.45	27.48	23.50
42	J22-69P	24.86	21.72	18.58	J22-69S	32.20	28.13	24.06

WITH STANDARD CABLE CLAMP

7	C12-7P	$12.74	$11.13	$ 9.52	C12-7S	$14.81	$12.94	$11.07
3	C12-60P	12.59	11.00	9.41	C12-60S	13.76	12.02	10.28
5	C14-5P	11.83	10.34	8.84	C14-5S	13.03	11.38	9.74
9	C14-9P	12.39	10.83	9.26	C14-9S	14.07	12.29	10.51
12	C14-12P	12.50	10.92	9.34	C14-12S	14.54	12.70	10.87
9	C14-61P	13.80	12.05	10.31	C14-61S	18.86	16.47	14.09
5	C14-63P	12.65	11.05	9.45	C14-63S	14.41	12.59	10.77
24	C18-24P	13.25	11.58	9.90	C18-24S	18.09	15.80	13.52
20	C18-62P	15.07	13.17	11.26	C18-62S	25.21	22.02	18.84
14	C18-64P	14.67	12.82	10.96	C18-64S	16.07	14.04	12.01
11	C18-65P	15.87	13.86	11.86	C18-65S	15.07	13.17	11.26
37	C20-37P	21.86	19.10	16.33	C20-37S	25.81	22.55	19.28
19	C20-66P	16.47	14.39	12.31	C20-66S	20.98	18.33	15.68
48	C22-48P	20.46	17.87	15.29	C22-48S	29.07	25.39	21.72
25	C22-67P	18.02	15.74	13.46	C22-67S	23.97	20.94	17.91
38	C22-68P	19.24	16.81	14.38	C22-68S	26.61	23.25	19.88
42	C22-69P	20.00	17.47	14.95	C22-69S	27.39	23.93	20.47

PLUGS

WITH FORM FOR POTTING SEAL

No. Contacts	Pin Contacts				Socket Contacts			
	Amph. No. 67-06-	Net Each, Lots of 1-24	25-99	100-199	Amph. No. 67-06-	Net Each, Lots of 1-24	25-99	100-199
7	P12-7P	$10.06	$ 8.79	$ 7.52	P12-7S	$12.18	$10.64	$ 9.10
3	P12-60P	9.94	8.68	7.43	P12-60S	11.08	9.68	8.28
5	P14-5P	8.46	7.39	6.32	P14-5S	9.68	8.46	7.24
9	P14-9P	8.99	7.85	6.72	P14-9S	10.70	9.35	8.00
12	P14-12P	9.08	7.93	6.79	P14-12S	11.12	9.71	8.31
9	P14-61P	10.43	9.11	7.79	P14-61S	15.49	13.53	11.57
5	P14-63P	9.28	8.11	6.94	P14-63S	11.34	9.91	8.47
24	P18-24P	10.54	9.21	7.87	P18-24S	15.42	13.47	11.52
20	P18-62P	12.39	10.83	9.26	P18-62S	22.55	19.70	16.85
14	P18-64P	11.99	10.48	8.96	P18-64S	13.36	11.67	9.98
11	P18-65P	13.20	11.53	9.86	P18-65S	12.39	10.83	9.26
37	P20-37P	16.03	14.01	11.98	P20-37S	22.90	20.00	17.11
19	P20-66P	13.58	11.86	10.15	P20-66S	18.07	15.79	13.50
48	P22-48P	17.31	15.12	12.93	P22-48S	25.97	22.69	19.41
25	P22-67P	14.89	13.01	11.12	P22-67S	23.19	20.26	17.33
38	P22-68P	16.13	14.09	12.05	P22-68S	23.48	20.51	17.54
42	P22-69P	16.87	14.74	12.61	P22-69S	24.26	21.19	18.13

WITH INDIVIDUAL WIRE SEAL GROMMET

7	E12-7P	$12.99	$11.35	$ 9.71	E12-7S	$15.09	$13.18	$11.27
3	E12-60P	12.99	11.35	9.71	E12-60S	15.42	13.47	11.52
5	E14-5P	11.61	10.14	8.68	E14-5S	12.83	11.21	9.59
9	E14-9P	12.65	11.05	9.45	E14-9S	14.34	12.53	10.72
12	E14-12P	11.99	10.48	8.96	E14-12S	14.05	12.27	10.50
9	E14-61P	14.14	12.35	10.57	E14-61S	19.24	16.81	14.38
5	E14-63P	12.59	11.00	9.41	E14-63S	14.38	12.56	10.74
24	E18-24P	14.67	12.82	10.96	E18-24S	19.53	17.06	14.59
20	E18-62P	17.64	15.41	13.18	E18-62S	27.81	24.30	20.78
14	E18-64P	15.63	13.66	11.68	E18-64S	17.02	14.87	12.72
11	E18-65P	16.71	14.60	12.48	E18-65S	15.89	13.88	11.87
37	E20-37P	19.51	17.04	14.58	E20-37S	26.39	23.06	19.72
19	E20-66P	16.20	14.15	12.10	E20-66S	20.66	18.05	15.44
48	E22-48P	19.04	16.63	14.23	E22-48S	27.70	24.20	20.70
25	E22-67P	17.22	15.04	12.87	E22-67S	23.19	20.26	17.33
38	E22-68P	18.76	16.39	14.02	E22-68S	26.19	22.88	19.57
42	E22-69P	19.04	16.63	14.23	E22-69S	26.44	23.10	19.76

WITH CLAMP FOR JACKETED CABLE

7	J12-7P	$10.23	$ 8.94	$ 7.64	J12-7S	$11.52	$10.06	$ 8.61
3	J12-60P	10.36	9.05	7.74	J12-60S	11.52	10.06	8.61
5	J14-5P	12.07	10.54	9.02	J14-5S	13.30	11.62	9.94
9	J14-9P	12.61	11.02	9.42	J14-9S	14.32	12.51	10.70
12	J14-12P	12.74	11.13	9.52	J14-12S	14.74	12.88	11.02
9	J14-61P	14.01	12.24	10.47	J14-61S	19.11	16.70	14.28
5	J14-63P	12.87	11.24	9.62	J14-63S	14.65	12.80	10.95
24	J18-24P	11.52	10.06	8.61	J18-24S	16.38	14.31	12.24
20	J18-62P	13.83	12.08	10.34	J18-62S	24.01	20.97	17.94
14	J18-64P	13.47	11.77	10.06	J18-64S	14.81	12.94	11.07
11	J18-65P	14.65	12.80	10.95	J18-65S	13.83	12.08	10.34
37	J20-37P	20.24	17.68	15.12	J20-37S	27.08	23.66	20.24
19	J20-66P	17.76	15.52	13.27	J20-66S	22.28	19.46	16.65
48	J22-48P	22.93	20.03	17.14	J22-48S	31.54	27.55	23.57
25	J22-67P	20.48	17.89	15.30	J22-67S	26.44	23.10	19.76
38	J22-68P	21.69	18.95	16.21	J22-68S	29.10	25.42	21.75
42	J22-69P	22.44	19.60	16.77	J22-69S	29.87	26.09	22.32

WITH STANDARD CABLE CLAMP

7	C12-7P	$12.10	$10.57	$ 9.04	C12-7S	$14.21	$12.42	$10.62
3	C12-60P	11.96	10.45	8.94	C12-60S	13.16	11.50	9.83
5	C14-5P	11.54	10.08	8.62	C14-5S	12.76	11.15	9.53
9	C14-9P	12.08	10.56	9.03	C14-9S	13.80	12.05	10.31
12	C14-12P	12.23	10.68	9.14	C14-12S	14.23	12.43	10.64
9	C14-61P	13.50	11.80	10.09	C14-61S	18.58	16.23	13.89
5	C14-63P	12.36	10.80	9.23	C14-63S	14.14	12.35	10.57
24	C18-24P	13.25	11.58	9.90	C18-24S	18.09	15.80	13.52
20	C18-62P	15.07	13.17	11.26	C18-62S	25.21	22.02	18.84
14	C18-64P	14.67	12.82	10.96	C18-64S	16.07	14.04	12.01
11	C18-65P	15.87	13.86	11.86	C18-65S	15.07	13.17	11.26
37	C20-37P	19.00	16.60	14.20	C20-37S	25.90	22.63	19.35
19	C20-66P	16.54	14.45	12.36	C20-66S	21.04	18.38	15.72
48	C22-48P	20.06	17.52	14.99	C22-48S	28.61	24.99	21.38
25	C22-67P	17.58	15.36	13.14	C22-67S	23.55	20.57	17.60
38	C22-68P	18.82	16.44	14.06	C22-68S	26.23	22.91	19.60
42	C22-69P	19.57	17.09	14.62	C22-69S	26.97	23.56	20.16

Continued on following page.

BUNKER RAMO AMPHENOL Miniature Connectors

MINNI-E® SERIES 67 MINIATURE CONNECTORS (CONTINUED)

WALL RECEPTACLES

WITH FORM FOR POTTING SEAL

	Pin Contacts				Socket Contacts			
No. Contacts	Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199	Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199
7	P12-7P	$10.77	$ 9.41	$ 8.05	P12-7S	$12.87	$11.24	$ 9.62
3	P12-60P	10.63	9.29	7.94	P12-60S	11.79	10.30	8.81
5	P14-5P	9.81	8.57	7.33	P14-5S	11.03	9.64	8.24
9	P14-9P	10.37	9.06	7.75	P14-9S	12.07	10.54	9.02
12	P14-12P	10.50	9.17	7.85	P14-12S	12.52	10.94	9.36
9	P14-61P	11.78	10.29	8.80	P14-61S	16.87	14.74	12.61
5	P14-63P	10.63	9.29	7.94	P14-63S	12.41	10.84	9.28
24	P18-24P	11.58	10.11	8.65	P18-24S	16.43	14.36	12.28
20	P18-62P	13.40	11.70	10.01	P18-62S	23.55	20.57	17.60
14	P18-64P	13.01	11.37	9.72	P18-64S	14.40	12.58	10.76
11	P18-65P	14.21	12.42	10.62	P18-65S	13.40	11.70	10.01
37	P20-37P	17.18	15.01	12.84	P20-37S	24.04	21.00	17.97
19	P20-66P	14.71	12.85	10.99	P20-66S	19.20	16.77	14.35
48	P22-48P	20.64	18.03	15.42	P22-48S	29.28	25.58	21.88
25	P22-67P	18.20	15.90	13.60	P22-67S	24.19	21.13	18.07
38	P22-68P	19.44	16.98	14.52	P22-68S	26.83	23.44	20.05
42	P22-69P	20.18	17.63	15.08	P22-69S	27.57	24.09	20.60

WITH INDIVIDUAL WIRE SEAL GROMMET

7	E12-7P	$13.67	$11.94	$10.21	E12-7S	$15.78	$13.79	$11.79
3	E12-60P	13.67	11.94	10.21	E12-60S	14.87	12.99	11.11
5	E14-5P	12.99	11.35	9.71	E14-5S	14.21	12.42	10.62
9	E14-9P	14.01	12.24	10.47	E14-9S	15.71	13.72	11.74
12	E14-12P	13.36	11.67	9.98	E14-12S	15.42	13.47	11.52
9	E14-61P	15.49	13.53	11.57	E14-61S	20.58	17.98	15.38
5	E14-63P	13.92	12.16	10.40	E14-63S	15.72	13.74	11.75
24	E18-24P	15.71	13.72	11.74	E18-24S	20.57	17.97	15.37
20	E18-62P	18.67	16.31	13.95	E18-62S	28.83	25.19	21.54
14	E18-64P	16.65	14.55	12.44	E18-64S	18.04	15.76	13.48
11	E18-65P	17.75	15.50	13.26	E18-65S	16.93	14.79	12.65
37	E20-37P	20.64	18.03	15.42	E20-37S	27.50	24.02	20.55
19	E20-66P	17.31	15.12	12.93	E20-66S	21.80	19.05	16.29
48	E22-48P	22.37	19.54	16.71	E22-48S	31.01	27.09	23.17
25	E22-67P	20.55	17.95	15.35	E22-67S	26.50	23.15	19.80
38	E22-68P	22.11	19.32	16.52	E22-68S	29.48	25.76	22.03
42	E22-69P	22.37	19.54	16.71	E22-69S	28.61	24.99	21.38

WITH STANDARD CABLE CLAMP

	Pin Contacts				Socket Contacts			
No. Contacts	Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199	Amph. No. 67-00-	Net Each, Lots of 1-24	25-99	100-199
7	C12-7P	$12.81	$11.19	$ 9.57	C12-7S	$14.91	$13.02	$11.14
3	C12-60P	12.67	11.07	9.47	C12-60S	13.83	12.08	10.34
5	C14-5P	12.90	11.27	9.64	C14-5S	14.14	12.35	10.57
9	C14-9P	13.47	11.77	10.06	C14-9S	15.16	13.24	11.33
12	C14-12P	13.58	11.86	10.15	C14-12S	15.62	13.64	11.67
9	C14-61P	14.87	12.99	11.11	C14-61S	19.98	17.46	14.93
5	C14-63P	13.72	11.99	10.25	C14-63S	15.49	13.53	11.57
24	C18-24P	14.23	12.43	10.64	C18-24S	19.11	16.70	14.28
20	C18-62P	16.11	14.07	12.04	C18-62S	26.24	22.93	19.61
14	C18-64P	15.71	13.72	11.74	C18-64S	17.05	14.90	12.74
11	C18-65P	16.89	14.76	12.62	C18-65S	16.11	14.07	12.04
37	C20-37P	20.13	17.59	15.04	C20-37S	27.01	23.60	20.18
19	C20-66P	17.69	15.45	13.22	C20-66S	22.15	19.35	16.55
48	C22-48P	23.37	20.42	17.46	C22-48S	31.98	27.94	23.90
25	C22-67P	20.91	18.27	15.63	C22-67S	26.90	23.50	20.10
38	C22-68P	22.13	19.33	16.54	C22-68S	29.52	25.70	22.06
42	C22-69P	22.90	20.00	17.11	C22-69S	30.28	26.46	22.63

PANEL RECEPTACLES WITH 4-HOLE MOUNT

AND INDIVIDUAL WIRE SEAL GROMMET

	Pin Contacts				Socket Contacts			
No. Contacts	Amph. No. 67-02-	Net Each, Lots of 1-24	25-99	100-199	Amph. No. 67-02-	Net Each, Lots of 1-24	25-99	100-199
7	E12-7P	$ 7.84	$6.85	$ 5.86	E12-7S	$ 9.94	$ 8.68	$ 7.
3	E12-60P	7.66	6.69	5.73	E12-60S	8.92	7.79	6.
5	E14-5P	6.90	6.03	5.15	E14-5S	8.06	7.04	6.
9	E14-9P	7.50	6.55	5.60	E14-9S	9.15	8.00	6.
12	E14-12P	7.55	6.60	5.64	E14-12S	10.10	8.82	7.
9	E14-61P	8.88	7.76	6.64	E14-61S	14.01	12.24	10.
5	E14-63P	7.72	6.74	5.77	E14-63S	9.52	8.32	7.
24	E18-24P	9.32	8.14	6.96	E18-24S	14.05	12.27	10.
20	E18-62P	10.54	9.21	7.87	E18-62S	17.80	15.55	13.
14	E18-64P	10.01	8.75	7.48	E18-64S	11.50	10.05	8.
11	E18-65P	11.34	9.91	8.47	E18-65S	10.52	9.19	7.
37	E20-37P	15.65	13.67	11.70	E20-37S	20.60	18.00	15.
19	E20-66P	11.87	10.37	8.87	E20-66S	11.28	9.86	8.
48	E22-48P	16.71	14.60	12.48	E22-48S	24.95	21.80	18.
25	E22-67P	13.83	12.08	10.34	E22-67S	19.86	17.35	14.
38	E22-68P	15.38	13.44	11.49	E22-68S	22.93	20.03	17.
42	E22-69P	16.11	14.07	12.04	E22-69S	23.81	20.80	17.

ROUND FLANGE RECEPTACLES

REAR MOUNT WITH HEX NUT

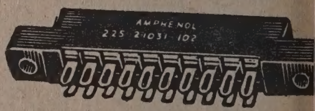
	Pin Contacts				Socket Contacts			
No. Contacts	Amph. No. 67-03-	Net Each, Lots of 1-24	25-99	100-199	Amph. No. 67-03-	Net Each, Lots of 1-24	25-99	100-199
7	E12-7P	$ 8.92	$ 7.79	$ 6.66	E12-7S	$11.01	$ 9.62	$ 8.
3	E12-60P	8.74	7.63	6.53	E12-60S	18.71	16.35	13.
5	E14-5P	7.64	6.68	5.71	E14-5S	8.83	7.71	6.
9	E14-9P	8.21	7.17	6.13	E14-9S	9.90	8.65	7.
12	E14-12P	8.28	7.23	6.19	E14-12S	10.81	9.44	8.
9	E14-61P	9.61	8.40	7.18	E14-61S	14.72	12.86	11.
5	E14-63P	8.46	7.39	6.32	E14-63S	10.23	8.94	7.
24	E18-24P	10.12	8.84	7.56	E18-24S	14.89	13.01	11.
20	E18-62P	11.36	9.92	8.49	E18-62S	18.66	16.30	13.
14	E18-64P	10.81	9.44	8.08	E18-64S	12.32	10.76	9.
11	E18-65P	12.18	10.64	9.10	E18-65S	11.34	9.91	8.
37	E20-37P	16.73	14.61	12.50	E20-37S	21.75	19.00	16.
19	E20-66P	12.92	11.29	9.66	E20-66S	17.45	15.25	13.
48	E22-48P	18.86	16.47	14.09	E22-48S	27.14	23.71	20.
25	E22-67P	16.03	14.01	11.98	E22-67S	22.08	19.29	16.
38	E22-68P	17.53	15.31	13.10	E22-68S	25.19	22.01	18.
42	E22-69P	18.27	15.96	13.65	E22-69S	25.97	22.69	19.

HERMETICALLY-SEALED, PIN CONTACT

		Hex Nut Front Mount Type			Stake-On Solder Flange Type*		
No. Contacts	Amph. No. 67-04-	Net Each, Lots of 1-24	25-99	100-199	Net Each, Lots of 1-24	25-99	100-1
7	H12-7P	$ 53.76	$48.32	$22.22	$13.06	$11.75	$10.42
12	H14-12P	25.79	23.18	20.57	18.98	17.07	15.14
9	H14-61P	28.83	25.90	22.98	22.32	20.05	17.79
24	H18-24P	....	....	....	24.99	22.46	19.92
20	H18-62P	102.78	92.38	49.55	28.03	25.19	22.35
37	H20-37P	68.64	61.69	54.74	52.75	47.40	42.06
48	H22-48P	67.54	60.70	53.86	53.05	47.68	42.31

*Add suffix (105) when ordering—example: 67-04-H12-7P (105)-stake-on solder flange type.

SERIES 225 PRINTED CIRCUIT CONNECTORS



Gold plated bifurcated ribbon contacts with eyelet, straight pin or right angle solder type terminations. Rated 5 amps at 600 VAC rms. Large mating surface provides low contact resistance. Centers .156″ for .154″ to .170″ PC boards. Glass filled diallyl phthalate. Meets MIL-C-21097C. Polarizing key assures contact positioning. Straight pin is .406″, Screw mount on 0.128″ clearance hole.

WITH 2 ROWS OF INDEPENDENT CONTACTS

Amphenol No. 225-	Contacts	Tail Style	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999	1000-2499
20621-101	12	Eyelet	$1.79	$1.49	$1.25	$1.12	$1.02	$0.96
21021-101	20	Eyelet	2.35	1.97	1.66	1.47	1.35	1.25
21521-101	30	Eyelet	2.81	2.35	1.97	1.75	1.61	1.50
21821-101	36	Eyelet	3.13	2.62	2.19	1.95	1.79	1.68
22221-101	44	Eyelet	3.78	3.17	2.66	2.37	2.17	2.02
22521-101	50	Eyelet	4.81	4.02	3.38	3.01	2.75	2.56
22821-101	56	Eyelet	5.31	4.44	3.73	3.31	3.03	2.83
23621-101	72	Eyelet	6.93	5.80	4.87	4.34	3.97	3.71
24321-101	86	Eyelet	7.71	6.45	5.41	4.82	4.41	4.11
20621-103	12	Pin	1.79	1.49	1.25	1.12	1.02	.96
21021-103	20	Pin	2.35	1.97	1.66	1.47	1.35	1.25
21521-103	30	Pin	2.81	2.35	1.97	1.75	1.61	1.50
21821-103	36	Pin	3.13	2.62	2.19	1.95	1.79	1.68
22221-103	44	Pin	3.78	4.17	2.66	2.37	2.17	2.02
22521-103	50	Pin	4.81	4.02	3.38	3.01	2.75	2.56
22821-103	56	Pin	5.31	4.44	3.73	3.31	3.03	2.83

Amphenol No. 225-	Contacts	Tail Style	Net Each, Lots of 1-49	50-99	100-249	250-499	500-999	1000-249
20621-105	12	Pin*	$1.99	$1.67	$1.40	$1.24	$1.14	$1.07
21021-105	20	Pin*	2.70	2.26	1.90	1.69	1.55	1.44
21521-105	30	Pin*	3.34	2.79	2.34	1.08	1.91	1.78
21821-105	36	Pin*	3.74	3.13	2.62	2.34	2.14	1.99
22221-105	44	Pin*	4.53	3.79	3.18	2.83	2.59	2.42
22821-105	56	Pin*	6.26	5.23	4.39	3.91	3.58	3.34

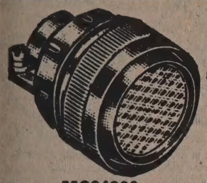
WITH 2 ROWS BRIDGED CONTACTS (TWO TAILS)

20631-101	6	Eyelet	$1.79	$1.49	$1.25	$1.12	$1.02	$ .9
21031-101	10	Eyelet	2.35	1.97	1.66	1.47	1.35	1.2
21531-101	15	Eyelet	2.81	2.35	1.97	1.75	1.61	1.5
21831-101	18	Eyelet	3.13	2.62	2.19	1.95	1.79	1.6
22231-101	22	Eyelet	3.78	3.17	2.66	2.37	2.17	2.0
22831-101	28	Eyelet	5.31	4.44	3.73	3.31	3.03	2.8

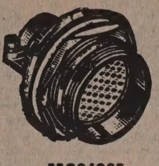
*Right angle.

BUNKER RAMO AMPHENOL Miniature Connectors

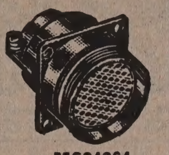
SERIES 48 MINIATURE MIL-C-26500 CONNECTORS



MS24266



MS24265



MS24264

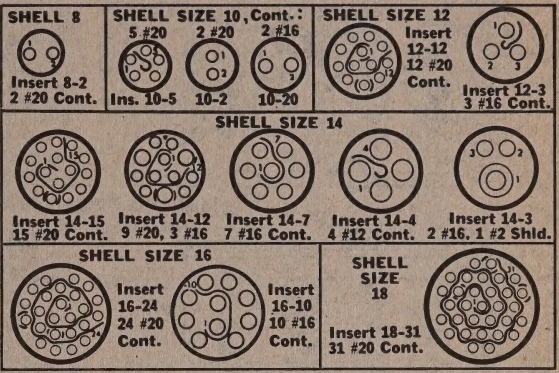
WITH POKE HOME® CONTACTS

iniature MIL-C-26500 (USAF) connectors meet missile and ircraft standards with 200° C environmental resistance. Assure tmost reliability at highest altitudes and widest range of temeratures. Corrosion and ozone resistant; moisture resistant with inimum insulation resistance of 1000 megohms. Sand and dust esistant per MIL-E-5272. Withstand shock cycling −55° C to 260° C. Support 1500 V rms from sea level to 350,000 ft. when ated. Poke Home® contacts to MIL-C-26636 have standardized rimped wire termination; rhodium-over-silver plating for high onductivity and long life. Construction features: Impact exruded aluminum shells; anti-deflection disk; integral insert and rommet; face seal, insert rim seal and shell peripheral seal; rommet double sealing risers for wire; visual, full engagement dicators; reversion-resistant silicone rubber inserts; metal-toetal bottoming of mated shells. Available in threaded or bayonet oupling, with or without contacts, and in hermetic type.

mphenol No., in price tables following, indicates shell size nd contacts per diagrams on this and the following page; .g., No. 48-00R8-2P indicates shell size 8 with two #20 contacts. inal suffix **P** (e.g., 48-00R8-2P) indicates plug type; **S,** socket.

TOOLS FOR SERIES 48

Amphenol Number	Description	Net Each, Lots of 1-24
294-57	Universal crimping kit	$160.00
294-126	Crimp tool, 4 indent #20, #16, #12 contacts	108.46
294-88	Insertion tool for #20 contacts	9.38
294-96	Insertion tool for #16 contacts	15.75
294-72	Insertion tool for #12 contacts	17.28
294-73	Removal tool for #12 contacts	10.73
294-89	Removal tool for #20 contacts	9.49
294-97	Removal tool for #16 contacts	8.86

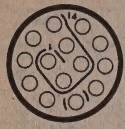


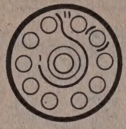
THREADED COUPLING MS24264 FLANGE MOUNTED						THREADED COUPLING MS24265 SINGLE HOLE MOUNTING						CONNECTORS WITHOUT CONTACTS			
MS No.* MS-24264R-	Amphenol No.* 48-	Net Each, Lots of 1-9	10-24	25-99	100-249	MS No.* MS-24265R	Amphenol No.* 48-	Net Each, Lots of 1-9	10-24	25-99	100-249	DEDUCT From Prices 1-9	10-24	25-99	100-249
....	00R8-2P	$19.66	$17.66	$15.67	$13.06	....	03R8-2P	$34.97	$31.42	$27.88	$23.24	$ 0.65	$ 0.58	$ 0.52	$ 0.43
....	00R8-2S	20.90	18.79	16.67	13.89	....	03R8-2S	36.26	32.59	28.92	24.10	1.60	1.43	1.27	1.06
....	00R10-2P	14.46	12.99	11.53	9.61	....	03R10-2P	17.66	15.88	14.09	11.74	.65	.58	.52	.43
....	00R10-2S	15.71	14.11	12.52	10.44	....	03R10-2S	18.94	17.03	15.11	12.59	1.60	1.43	1.27	1.06
10T5P	00R10-5P	14.52	13.05	11.58	9.65	10T5P	03R10-5P	18.12	16.29	14.45	12.04	1.60	1.43	1.27	1.06
10T5S	00R10-5S	17.84	16.03	14.23	11.85	10T5S	03R10-5S	21.46	19.28	17.11	14.26	4.14	3.72	3.30	2.75
....	00R10-20P	15.61	14.03	12.45	10.37	....	03R10-20P	17.84	16.03	14.23	11.85	.77	.70	.62	.51
....	00R10-20S	16.64	14.95	13.27	11.06	....	03R10-20S	19.66	17.66	15.67	13.06	1.67	1.51	1.34	1.11
12T3P	00R12-3P	17.17	15.44	13.70	11.41	12T3P	03R12-3P	21.44	19.27	17.10	14.25	1.50	1.35	1.20	1.00
12T3S	00R12-3S	19.72	17.72	15.72	13.10	12T3S	03R12-3S	23.98	21.56	19.13	15.94	3.38	3.04	2.70	2.25
12T12P	00R12-12P	16.78	15.08	13.38	11.15	12T12P	03R12-12P	19.75	17.75	15.75	13.13	2.56	2.30	2.04	1.70
12T12S	00R12-12S	22.96	20.63	18.31	15.26	12T12S	03R12-12S	25.93	23.30	20.68	17.23	7.33	6.59	5.85	4.87
14T3P	00R14-3P	24.40	21.92	19.45	16.21	14T3P	03R14-3P	25.74	23.13	20.53	17.10	6.60	5.94	5.27	4.39
14T3S	00R14-3S	26.34	23.67	21.00	17.50	14T3S	03R14-3S	27.76	24.95	22.14	18.45	8.11	7.28	6.46	5.39
14T4P	00R14-4P	21.09	18.96	16.82	14.02	14T4P	03R14-4P	24.85	22.34	19.82	16.52	3.32	2.98	2.65	2.21
14T4S	00R14-4S	23.38	21.02	18.65	15.54	14T4S	03R14-4S	27.18	24.42	21.67	18.06	4.98	4.47	3.97	3.31
14T7P	00R14-7P	17.71	15.92	14.12	11.77	14T7P	03R14-7P	21.46	19.28	17.11	14.26	2.29	2.06	1.83	1.52
14T7S	00R14-7S	21.80	19.60	17.39	14.49	14T7S	03R14-7S	25.49	22.90	20.32	16.94	5.34	4.80	4.26	3.55
....	00R14-12P	24.14	21.70	19.25	16.04	....	03R14-12P	25.45	22.88	20.30	16.92	3.56	3.20	2.84	2.36
....	00R14-12S	31.47	28.29	25.10	20.92	....	03R14-12S	32.77	29.45	26.13	21.78	9.21	8.28	7.35	6.12
14T15P	00R14-15P	17.70	15.90	14.11	11.76	14T15P	03R14-15P	19.64	17.65	15.66	13.05	3.02	2.71	2.41	2.01
14T15S	00R14-15S	25.09	22.55	20.01	16.67	14T15S	03R14-15S	27.03	24.30	21.56	17.97	8.69	7.81	6.93	5.78
....	00R16-10P	21.65	19.45	17.26	14.39	....	03R16-10P	25.11	22.56	20.02	16.68	2.84	2.56	2.27	1.89
....	00R16-10S	26.97	24.24	21.51	17.92	....	03R16-10S	30.45	27.36	24.28	20.23	6.84	6.15	5.46	4.55
16T24P	00R16-24P	20.41	18.35	16.28	13.57	16T24P	03R16-24P	22.91	20.59	18.27	15.23	4.38	3.93	3.49	2.91
16T24S	00R16-24S	31.06	27.92	24.77	20.64	16T24S	03R16-24S	33.56	30.16	26.76	22.30	13.00	11.69	10.37	8.64
18T8P	00R18-8P	27.07	24.32	21.58	17.99	18T8P	03R18-8P	30.59	27.49	24.39	20.33	4.83	4.35	3.86	3.21
18T8S	00R18-8S	30.76	27.65	24.53	20.44	18T8S	03R18-8S	34.25	30.79	27.32	22.76	7.57	6.80	6.04	5.03
18T11P	00R18-11P	29.39	26.41	23.44	19.53	18T11P	03R18-11P	31.76	28.54	25.33	21.11	8.47	7.61	6.75	5.63
18T11S	00R18-11S	35.34	31.77	28.19	23.49	18T11S	03R18-11S	37.73	33.91	30.09	25.07	13.08	11.76	10.43	8.69
18T14P	00R18-14P	23.04	20.70	18.37	15.31	18T14P	03R18-14P	26.47	23.79	21.11	17.59	3.56	3.20	2.84	2.36
18T14S	00R18-14S	29.85	26.82	23.80	19.83	18T14S	03R18-14S	33.27	29.91	26.54	22.11	8.80	7.91	7.02	5.85
18T31P	00R18-31P	22.96	20.63	18.31	15.26	18T31P	03R18-31P	26.23	23.57	20.92	17.43	5.37	4.83	4.28	3.57
18T31S	00R18-31S	35.96	32.32	28.68	23.90	18T31S	03R18-31S	39.20	35.23	31.26	26.05	16.18	14.54	12.90	10.75
....	00R20-16P	21.55	19.37	17.19	14.32	....	03R20-16P	28.17	25.32	22.47	18.72	3.93	3.54	3.14	2.61
....	00R20-16S	29.21	26.26	23.30	19.41	....	03R20-16S	36.37	32.69	29.01	24.17	9.78	8.79	7.80	6.50
....	00R20-25P	37.18	33.41	29.65	24.71	....	03R20-25P	44.18	39.70	35.23	29.36	7.57	6.80	6.04	5.03
....	00R20-25S	48.57	43.65	38.73	32.28	....	03R20-25S	55.54	49.91	44.29	36.91	17.02	15.29	13.57	11.31
....	00R20-28P	38.05	34.19	30.34	25.28	....	03R20-28P	44.97	40.41	35.86	29.88	7.60	6.83	6.06	5.05
....	00R20-28S	50.67	45.54	40.41	33.67	....	03R20-28S	57.53	51.70	45.88	38.23	17.87	16.06	14.25	11.88
....	00R20-39P	39.74	35.71	31.69	26.41	....	03R20-39P	46.42	41.72	37.02	30.85	7.28	6.55	5.81	4.84
....	00R20-39S	56.00	50.32	44.65	37.21	....	03R20-39S	62.66	56.32	49.97	41.64	21.11	18.97	16.83	14.03
....	00R20-41P	26.24	23.59	20.93	17.44	....	03R20-41P	32.94	29.61	26.27	21.89	7.02	6.30	5.59	4.66
....	00R20-41S	43.18	38.81	34.44	28.70	....	03R20-41S	49.83	44.79	39.74	33.12	21.31	19.16	17.00	14.16
22T12P	00R22-12P	32.45	29.17	25.88	21.57	22T12P	03R22-12P	35.99	32.35	28.70	23.92	6.51	5.85	5.19	4.33
22T12S	00R22-12S	37.45	33.65	29.86	24.89	22T12S	03R22-12S	40.91	36.76	32.62	27.18	10.06	9.05	8.03	6.69
22T19P	00R22-19P	26.29	23.63	20.97	17.47	22T19P	03R22-19P	29.70	26.70	23.69	19.74	4.52	4.06	3.60	3.00
22T19S	00R22-19S	35.08	31.52	27.97	23.31	22T19S	03R22-19S	38.55	34.65	30.74	25.62	11.25	10.11	8.97	7.48
....	00R22-32P	41.85	37.62	33.38	27.81	....	03R22-32P	44.86	40.31	35.77	29.81	8.66	7.78	6.90	5.75
....	00R22-32S	48.76	43.82	38.88	32.40	....	03R22-32S	51.75	46.51	41.27	34.39	20.05	18.02	15.99	13.32
22T55P	00R22-55P	29.07	26.13	23.18	19.32	22T55P	03R22-55P	32.17	28.91	25.65	21.38	9.57	8.61	7.64	6.36
22T55S	00R22-55S	51.03	45.87	40.70	33.92	22T55S	03R22-55S	54.08	48.61	43.13	35.94	28.99	26.06	23.12	19.27
....	00R24-43P	45.38	40.78	36.19	30.16	....	03R24-43P	52.36	47.06	41.76	34.80	8.69	7.81	6.93	5.78
....	00R24-43S	64.13	57.64	51.14	42.62	....	03R24-43S	71.04	63.84	56.65	47.21	24.06	21.63	19.19	15.99
....	00R24-57P	55.85	50.20	44.54	37.12	....	03R24-57P	62.44	56.12	49.80	41.50	10.95	9.84	8.73	7.28
....	00R24-57S	78.37	70.43	62.50	52.08	....	03R24-57S	84.99	76.38	67.78	56.48	31.03	27.89	24.75	20.62
....	00R24-61P	37.00	33.26	29.51	24.59	....	03R24-61P	42.20	37.93	33.65	28.05	10.44	9.39	8.33	6.94
....	00R24-61S	59.46	53.43	47.41	39.51	....	03R24-61S	64.65	58.11	51.56	42.97	31.73	28.51	25.30	21.08

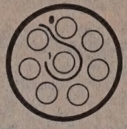
*For types **without** contacts, add suffix **-105**: MS24264R10T5P-**105**; 48-00R10-5P-**105**; MS24265R10T5P-**105**; 48-03R10-5P-**105**.

SERIES 48 MINIATURE MIL-C-26500 CONNECTORS (CONT'D)

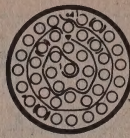
SHELL SIZE 18

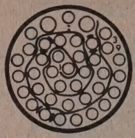

Insert 18-14
14 #16 Cont.

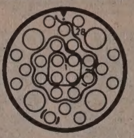

Insert 18-11
10 #16, 1 #2 Shld.

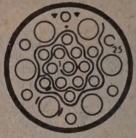

Insert 18-8
8 #12 Cont.

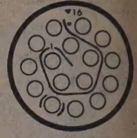
SHELL SIZE 20


Insert 20-41
41 #20 Cont.

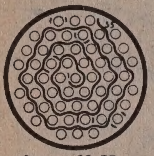

Insert 20-39
37 #20, 2 #16

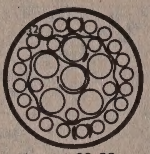

Insert 20-28
24 #20, 4 #12

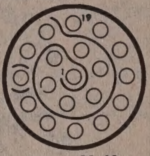

Insert 20-25
19 #20, 6 #12

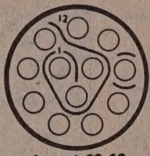

Insert 20-16
16 #16 Cont.

SHELL SIZE 22

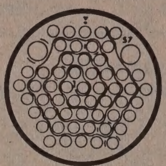

Insert 22-55
55 #20 Cont.

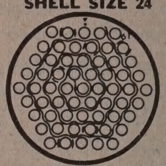

Insert 22-32
26 #20, 6 #12

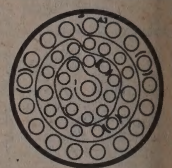

Insert 22-19
19 #16 Cont.


Insert 22-12
12 #12 Cont.

SHELL SIZE 24


Insert 24-57
2 #12, 55 #20 Cont.


Insert 24-61
61 #20 Cont.


Insert 24-43
23 #20, 20 #16 Cont.

ALTERNATE SHELL POSITIONS

Available at no extra charge. Incorporate special shell polarizing key and keyways.

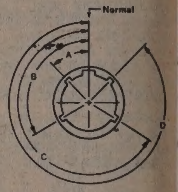
FOR SIZE 8 AND 10 CONNECTORS

Position	A	B	C	D
Normal	105°	140°	215°	265°
6	102°	132°	248°	320°
7	80°	118°	230°	312°
8	35°	140°	205°	275°
9	64°	155°	234°	304°
10*	25°	115°	220°	270°

*Size 8 not available.

FOR SIZES 12 THRU 24 CONNECTORS

Position	A	B	C	D
Normal	105°	140°	215°	265°
6	18°	149°	192°	259°
7	92°	152°	222°	342°
8	84°	152°	204°	334°
9	24°	135°	199°	240°
10	98°	152°	268°	338°



THREADED COUPLING MS24266 STRAIGHT CABLE CONNECTOR						BAYONET COUPLING MS24264 FLANGE MOUNTED						CONNECTORS WITHOUT CONTACTS* DEDUCT From Prices			
MS No.* MS-24266R-	Amphenol No.* 48-	Net Each, Lots of 1-9	10-24	25-99	100-249	MS No.* MS-24264	Amphenol No.* 48-	Net Each, Lots of 1-9	10-24	25-99	100-249	1-9	10-24	25-99	100-249
....	06R8-2P	$33.76	$30.35	$26.93	$22.44	....	10R8-2P	$20.24	$18.19	$16.14	$13.45	$ 0.65	$ 0.58	$ 0.52	$ 0.43
....	06R8-2S	35.08	31.52	27.97	23.31	....	10R8-2S	21.50	19.33	17.15	14.29	1.60	1.43	1.27	1.06
....	06R10-2P	17.13	15.39	13.66	11.38	....	10R10-2P	16.76	15.07	13.37	11.14	.65	.58	.52	.43
....	06R10-2S	18.38	16.51	14.65	12.21	....	10R10-2S	21.14	19.00	16.86	14.05	1.60	1.43	1.27	1.06
10T5P	06R10-5P	16.20	14.56	12.92	10.76	10B5P	10R10-5P	15.01	13.49	11.97	9.98	1.60	1.43	1.27	1.06
10T5S	06R10-5S	19.59	17.61	15.62	13.02	10B5S	10R10-5S	18.36	16.50	14.64	12.20	4.14	3.72	3.30	2.75
....	06R10-20P	17.54	15.76	13.99	11.65	....	10R10-20P	15.83	14.23	12.63	10.52	.77	.70	.62	.51
....	06R10-20S	19.07	17.14	15.21	12.67	....	10R10-20S	17.06	15.34	13.61	11.34	1.67	1.51	1.34	1.11
12T3P	06R12-3P	19.53	17.55	15.57	12.98	12B3P	10R12-3P	19.72	17.72	15.72	13.10	1.50	1.35	1.20	1.00
12T3S	06R12-3S	22.09	19.85	17.61	14.68	12B3S	10R12-3S	22.20	19.95	17.70	14.75	3.38	3.04	2.70	2.25
12T12P	06R12-12P	19.10	17.17	15.23	12.69	12B12P	10R12-12P	19.21	17.27	15.32	12.77	2.56	2.30	2.04	1.70
12T12S	06R12-12S	25.28	22.72	20.16	16.80	12B12S	10R12-12S	25.41	22.83	20.26	16.88	7.33	6.59	5.85	4.87
14T3P	06R14-3P	26.23	23.57	20.92	17.43	14B3P	10R14-3P	25.80	23.19	20.58	17.15	6.60	5.94	5.27	4.39
14T3S	06R14-3S	28.23	25.38	22.52	18.76	14B3S	10R14-3S	27.76	24.95	22.14	18.45	8.11	7.28	6.46	5.39
14T4P	06R14-4P	23.08	20.75	18.41	15.34	14B4P	10R14-4P	22.85	20.53	18.22	15.18	3.32	2.98	2.65	2.21
14T4S	06R14-4S	25.39	22.82	20.25	16.87	14B4S	10R14-4S	24.82	22.31	19.79	16.50	4.98	4.47	3.97	3.31
14T7P	06R14-7P	20.82	18.72	16.61	13.84	14B7P	10R14-7P	19.12	17.18	15.25	12.71	2.29	2.06	1.83	1.52
14T7S	06R14-7S	24.85	22.34	19.82	16.52	14B7S	10R14-7S	23.13	20.79	18.45	15.37	5.34	4.80	4.26	3.55
....	06R14-12P	26.10	23.46	20.82	17.35	....	10R14-12P	25.53	22.95	20.36	16.97	3.56	3.20	2.84	2.36
....	06R14-12S	33.37	29.99	26.61	22.18	....	10R14-12S	32.85	29.52	26.20	21.83	9.21	8.28	7.35	6.12
14T15P	06R14-15P	19.59	17.61	15.62	13.02	14B15P	10R14-15P	19.07	17.14	15.21	12.67	3.02	2.71	2.41	2.01
14T15S	06R14-15S	26.97	24.24	21.51	17.92	14B15S	10R14-15S	26.47	23.79	21.11	17.59	8.69	7.81	6.93	5.78
....	06R16-10P	24.17	21.73	19.28	16.07	....	10R16-10P	22.21	19.97	17.72	14.76	2.84	2.56	2.27	1.89
....	06R16-10S	29.51	26.53	23.54	19.61	....	10R16-10S	27.56	24.76	21.97	18.31	6.84	6.15	5.46	4.55
16T24P	06R16-24P	22.82	20.50	18.19	15.16	16B24P	10R16-24P	20.97	18.84	16.72	13.93	4.38	3.93	3.49	2.91
16T24S	06R16-24S	33.46	30.08	26.69	22.24	16B24S	10R16-24S	31.63	28.43	25.23	21.02	13.00	11.69	10.37	8.64
18T8P	06R18-8P	30.27	27.21	24.14	20.12	18B8P	10R18-8P	28.25	25.39	22.53	18.77	4.83	4.35	3.86	3.21
18T8S	06R18-8S	33.97	30.53	27.09	22.58	18B8S	10R18-8S	32.00	28.76	25.52	21.26	7.57	6.80	6.04	5.03
18T11P	06R18-11P	34.25	30.79	27.32	22.76	18B11P	10R18-11P	31.88	28.66	25.43	21.19	8.47	7.61	6.75	5.63
18T11S	06R18-11S	40.15	36.08	32.02	26.68	18B11S	10R18-11S	37.73	33.91	30.09	25.07	13.08	11.76	10.43	8.69
18T14P	06R18-14P	27.60	24.81	22.01	18.34	18B14P	10R18-14P	24.21	21.75	19.30	16.09	3.56	3.20	2.84	2.36
18T14S	06R18-14S	34.43	30.94	27.46	22.88	18B14S	10R18-14S	30.98	27.85	24.71	20.59	8.80	7.91	7.02	5.85
18T31P	06R18-31P	25.99	23.36	20.73	17.27	18B31P	10R18-31P	24.06	21.63	19.19	15.99	5.37	4.83	4.28	3.57
18T31S	06R18-31S	38.98	35.03	31.08	25.90	18B31S	10R18-31S	37.05	33.30	29.55	24.62	16.18	14.54	12.90	10.75
....	06R20-16P	26.77	24.05	21.34	17.79	....	10R20-16P	22.39	20.12	17.85	14.88	3.93	3.54	3.14	2.61
....	06R20-16S	34.37	30.89	27.41	22.84	....	10R20-16S	30.07	27.02	23.98	19.98	9.78	8.79	7.80	6.50
....	06R20-25P	41.90	37.66	33.42	27.85	....	10R20-25P	38.01	34.17	30.32	25.26	7.57	6.80	6.04	5.03
....	06R20-25S	53.20	47.81	42.42	35.35	....	10R20-25S	48.28	43.40	38.51	32.09	17.02	15.29	13.57	11.31
....	06R20-28P	42.71	38.38	34.06	28.38	....	10R20-28P	38.87	34.93	31.00	25.83	7.60	6.83	6.06	5.05
....	06R20-28S	55.27	49.67	44.07	36.73	....	10R20-28S	51.49	46.28	41.06	34.22	17.87	16.06	14.25	11.88
....	06R20-39P	44.19	39.72	35.24	29.37	....	10R20-39P	40.53	36.42	32.32	26.93	7.28	6.55	5.81	4.84
....	06R20-39S	60.48	54.36	48.23	40.19	....	10R20-39S	56.77	51.02	45.27	37.73	21.11	18.97	16.83	14.03
....	06R20-41P	30.68	27.58	24.47	20.39	....	10R20-41P	27.03	24.30	21.56	17.97	7.02	6.30	5.59	4.60
....	06R20-41S	47.64	42.81	37.99	31.66	....	10R20-41S	43.97	39.52	35.07	29.22	21.31	19.16	17.00	14.10
22T12P	06R22-12P	35.53	31.94	28.34	23.61	22B12P	10R22-12P	32.82	29.49	26.17	21.81	6.51	5.85	5.19	4.33
22T12S	06R22-12S	40.46	36.37	32.27	26.89	22B12S	10R22-12S	38.24	34.36	30.49	25.41	10.06	9.05	8.03	6.69
22T19P	06R22-19P	30.73	27.62	24.51	20.42	22B19P	10R22-19P	27.16	24.41	21.66	18.05	4.52	4.06	3.60	3.00
22T19S	06R22-19S	39.56	35.56	31.55	26.29	22B19S	10R22-19S	35.93	32.29	28.65	23.88	11.25	10.11	8.97	7.48
....	06R22-32P	45.77	41.14	36.50	30.42	....	10R22-32P	42.77	38.44	34.11	28.42	8.66	7.78	6.90	5.75
....	06R22-32S	52.72	47.39	42.05	35.04	....	10R22-32S	56.58	50.85	45.12	37.60	20.05	18.02	15.99	13.3
22T55P	06R22-55P	31.74	28.53	25.31	21.09	22B55P	10R22-55P	29.89	26.87	23.84	19.87	9.57	8.61	7.64	6.30
22T55S	06R22-55S	53.67	48.24	42.80	35.67	22B55S	10R22-55S	51.81	46.56	41.32	34.43	28.99	26.06	23.12	19.2
....	06R24-43P	53.31	47.91	42.51	35.43	....	10R24-43P	46.64	41.92	37.20	31.00	8.69	7.81	6.93	5.7
....	06R24-43S	71.42	64.18	56.95	47.46	....	10R24-43S	64.73	58.18	51.62	43.02	24.06	21.63	19.19	15.9
....	06R24-57P	62.99	56.62	50.24	41.86	....	10R24-57P	56.75	51.01	45.26	37.72	10.95	9.84	8.73	7.2
....	06R24-57S	85.94	77.23	68.53	57.11	....	10R24-57S	79.27	71.24	63.21	52.68	31.03	27.89	24.75	20.6
....	06R24-61P	42.66	38.34	34.02	28.35	....	10R24-61P	37.54	33.74	29.94	24.95	10.44	9.39	8.33	6.9
....	06R24-61S	65.10	58.50	51.91	43.26	....	10R24-61S	60.04	53.96	47.88	39.90	31.73	28.51	25.30	21.0

*For types **without** contacts, add suffix **-105**: MS24266R10T5P-**105**; 48-06R10-5P-**105**; MS2426410B5P-**105**; 48-10R10-5P-**105**.

SERIES 48 MINIATURE MIL-C-26500 CONNECTORS (CONT'D)

BAYONET COUPLING MS24265 SINGLE HOLE MOUNTING						BAYONET COUPLING MS24266 CABLE CONNECTOR						CONNECTORS WITHOUT CONTACTS *			
MS No.* MS-24265R-	Amphenol No.* 48-	Net Each, Lots of				MS No.* MS-24266R-	Amphenol No.* 48-	Net Each, Lots of				DEDUCT From Prices			
		1-9	10-24	25-99	100-249			1-9	10-24	25-99	100-249	1-9	10-24	25-99	100-249
....	13R8-2P	$35.55	$31.95	$28.35	$23.63	....	16R8-2P	$34.37	$30.89	$27.41	$22.84	$ 0.65	$ 0.58	$ 0.52	$ 0.43
....	13R8-2S	36.86	33.13	29.40	24.50	....	16R8-2S	35.68	32.06	28.45	23.71	1.60	1.43	1.27	1.06
....	13R10-2P	18.52	16.64	14.77	12.31	....	16R10-2P	20.15	18.11	16.07	13.39	.65	.58	.52	.43
....	13R10-2S	20.15	18.11	16.07	13.39	....	16R10-2S	21.98	19.75	17.53	14.61	1.60	1.43	1.27	1.06
10B5P	13R10-5P	18.90	16.98	15.07	12.56	10B5P	16R10-5P	18.58	16.70	14.82	12.35	1.60	1.43	1.27	1.06
10B5S	13R10-5S	22.21	19.97	17.72	14.76	10B5S	16R10-5S	22.03	19.79	17.56	14.64	4.14	3.72	3.30	2.75
....	13R10-20P	20.02	17.99	15.96	13.30	....	16R10-20P	19.42	17.45	15.49	12.90	.77	.70	.62	.51
....	13R10-20S	21.27	19.11	16.96	14.13	....	16R10-20S	20.68	18.59	16.49	13.74	1.67	1.51	1.34	1.11
12B3P	13R12-3P	21.93	19.71	17.49	14.57	12B3P	16R12-3P	22.15	19.91	17.67	14.72	1.50	1.35	1.20	1.00
12B3S	13R12-3S	24.46	21.98	19.50	16.25	12B3S	16R12-3S	24.03	21.60	19.16	15.97	3.38	3.04	2.70	2.25
12B12P	13R12-12P	21.41	19.24	17.07	14.23	12B12P	16R12-12P	21.58	19.40	17.21	14.34	2.56	2.30	2.04	1.70
12B12S	13R12-12S	27.60	24.81	22.01	18.34	12B12S	16R12-12S	27.78	24.96	22.15	18.46	7.33	6.59	5.85	4.87
14B3P	13R14-3P	27.18	24.42	21.67	18.06	14B3P	16R14-3P	28.69	25.79	22.88	19.07	6.60	5.94	5.27	4.39
14B3S	13R14-3S	29.23	26.27	23.31	19.43	14B3S	16R14-3S	30.67	27.56	24.46	20.38	8.11	7.28	6.46	5.39
14B4P	13R14-4P	25.56	22.98	20.39	16.99	14B4P	16R14-4P	25.44	22.86	20.29	16.91	3.32	2.98	2.65	2.21
14B4S	13R14-4S	27.93	25.11	22.28	18.56	14B4S	16R14-4S	27.76	24.95	22.14	18.45	4.98	4.47	3.97	3.31
14B7P	13R14-7P	22.15	19.91	17.67	14.72	14B7P	16R14-7P	23.13	20.79	18.45	15.37	2.29	2.06	1.83	1.52
14B7S	13R14-7S	26.20	23.54	20.89	17.41	14B7S	16R14-7S	27.19	24.44	21.68	18.07	5.34	4.80	4.26	3.55
....	13R14-12P	28.53	25.65	22.76	18.96	....	16R14-12P	28.42	25.55	22.67	18.89	3.56	3.20	2.84	2.36
....	13R14-12S	35.82	32.19	28.56	23.80	....	16R14-12S	35.71	32.09	28.48	23.73	9.21	8.28	7.35	6.12
14B15P	13R14-15P	22.06	19.82	17.59	14.66	14B15P	16R14-15P	21.95	19.72	17.50	14.58	3.02	2.71	2.41	2.01
14B15S	13R14-15S	29.42	26.44	23.46	19.55	14B15S	16R14-15S	29.26	26.30	23.34	19.45	8.69	7.81	6.93	5.78
....	13R16-10P	26.62	23.93	21.23	17.69	....	16R16-10P	26.62	23.93	21.23	17.69	2.84	2.56	2.27	1.89
....	13R16-10S	30.89	27.76	24.63	20.53	....	16R16-10S	31.95	28.71	25.48	21.23	6.84	6.15	5.46	4.55
16B24P	13R16-24P	24.70	22.19	19.69	16.41	16B24P	16R16-24P	25.19	22.63	20.08	16.74	4.38	3.93	3.49	2.91
16B24S	13R16-24S	35.34	31.77	28.19	23.49	16B24S	16R16-24S	35.85	32.22	28.59	23.82	13.00	11.69	10.37	8.64
18B8P	13R18-8P	29.58	26.58	23.59	19.66	18B8P	16R18-8P	31.87	28.64	25.41	21.18	4.83	4.35	3.86	3.21
18B8S	13R18-8S	33.34	29.96	26.59	22.16	18B8S	16R18-8S	35.55	31.95	28.35	23.63	7.57	6.80	6.04	5.03
18B11P	13R18-11P	33.21	29.85	26.49	22.07	18B11P	16R18-11P	35.87	32.23	28.60	23.84	8.47	7.61	6.75	5.63
18B11S	13R18-11S	39.17	35.20	31.24	26.03	18B11S	16R18-11S	41.73	37.50	33.28	27.73	13.08	11.76	10.43	8.69
18B14P	13R18-14P	27.16	24.41	21.66	18.05	18B14P	16R18-14P	29.15	26.20	23.25	19.37	3.56	3.20	2.84	2.36
18B14S	13R18-14S	33.97	30.53	27.09	22.58	18B14S	16R18-14S	35.98	32.33	28.69	23.91	8.80	7.91	7.02	5.85
18B31P	13R18-31P	26.88	24.15	21.43	17.86	18B31P	16R18-31P	27.46	24.68	21.90	18.25	5.37	4.83	4.28	3.57
18B31S	13R18-31S	39.85	35.81	31.78	26.48	18B31S	16R18-31S	40.56	36.45	32.34	26.95	16.18	14.54	12.90	10.75
....	13R20-16P	28.52	25.63	22.74	18.95	....	16R20-16P	27.32	24.55	21.79	18.15	3.93	3.54	3.14	2.61
....	13R20-16S	36.15	32.49	28.83	24.02	....	16R20-16S	35.00	31.45	27.91	23.26	9.78	8.79	7.80	6.50
....	13R20-25P	43.96	39.50	35.05	29.21	....	16R20-25P	42.85	38.51	34.17	28.48	7.57	6.80	6.04	5.03
....	13R20-25S	55.33	49.73	44.13	36.77	....	16R20-25S	54.23	48.73	43.24	36.04	17.02	15.29	13.57	11.31
....	13R20-28P	44.79	40.26	35.72	29.77	....	16R20-28P	43.80	39.36	34.93	29.11	7.60	6.83	6.06	5.05
....	13R20-28S	57.31	51.50	45.70	38.08	....	16R20-28S	56.20	50.51	44.82	37.35	17.87	16.06	14.25	11.88
....	13R20-39P	46.23	41.55	36.87	30.72	....	16R20-39P	45.08	40.51	35.95	29.96	7.28	6.55	5.81	4.84
....	13R20-39S	62.47	56.15	49.82	41.52	....	16R20-39S	61.40	55.18	48.96	40.80	21.11	18.97	16.83	14.03
....	13R20-41P	32.66	29.35	26.04	21.70	....	16R20-41P	31.65	28.44	25.24	21.03	7.02	6.30	5.59	4.66
....	13R20-41S	49.68	44.64	39.61	33.01	....	16R20-41S	48.60	43.68	38.76	32.30	21.31	19.16	17.00	14.16
22B12P	13R22-12P	36.51	32.82	29.12	24.27	22B12P	16R22-12P	38.36	34.48	30.59	25.49	6.51	5.85	5.19	4.33
22B12S	13R22-12S	41.44	37.25	33.05	27.54	22B12S	16R22-12S	43.28	38.89	34.51	28.76	10.06	9.05	8.03	6.69
22B19P	13R22-19P	30.84	27.72	24.60	20.50	22B19P	16R22-19P	32.82	29.49	26.17	21.81	4.52	4.06	3.60	3.00
22B19S	13R22-19S	39.61	35.60	31.59	26.32	22B19S	16R22-19S	41.60	37.39	33.18	27.65	11.25	10.11	8.97	7.48
....	13R22-32P	46.44	41.73	37.03	30.86	....	16R22-32P	48.76	43.82	38.88	32.40	8.66	7.78	6.90	5.75
....	13R22-32S	60.21	54.12	48.02	40.02	....	16R22-32S	62.60	56.26	49.92	41.60	20.05	18.02	15.99	13.32
22B55P	13R22-55P	33.13	29.78	26.42	22.02	22B55P	16R22-55P	34.19	30.73	27.27	22.72	9.57	8.61	7.64	6.36
22B55S	13R22-55S	55.09	49.52	43.94	36.61	22B55S	16R22-55S	56.17	50.48	44.79	37.33	28.99	26.06	23.12	19.27
....	13R24-43P	53.15	47.77	42.39	35.32	....	16R24-43P	53.99	48.52	43.05	35.88	8.69	7.81	6.93	5.78
....	13R24-43S	71.27	64.06	56.84	47.37	....	16R24-43S	72.10	64.79	57.49	47.91	24.06	21.63	19.19	15.99
....	13R24-57P	63.28	56.87	50.46	42.05	....	16R24-57P	64.27	57.77	51.26	42.71	10.95	9.84	8.73	7.28
....	13R24-57S	85.79	77.11	68.42	57.02	....	16R24-57S	86.79	78.00	69.21	57.68	31.03	27.89	24.75	20.62
....	13R24-61P	44.38	39.89	35.39	29.49	....	16R24-61P	43.91	39.46	35.02	29.18	10.44	9.39	8.33	6.94
....	13R24-61S	66.79	60.02	53.26	44.38	....	16R24-61S	60.85	54.68	48.52	40.44	31.73	28.51	25.30	21.08

HERMETIC RECEPTACLES WITH CONTACTS

THREADED COUPLING

Made to MS24265XXXTXXX. One hole mounting.

Amphenol No.† 48-	Flat, Pierced Cont. Net Each, Lots of			Solder Cup Cont.† Net Each, Lots of		
	1-9	10-24	25-99	1-9	10-24	25-99
03H10-2P	$17.88	$16.69	$14.90	$18.65	$17.40	$15.54
03H10-5P	18.38	17.15	15.31	20.27	18.91	16.89
03H12-3P	18.99	17.72	15.83	20.91	19.52	17.43
03H12-12P	20.00	18.66	16.66	24.56	22.92	20.46
03H14-3P	24.62	22.97	20.51	25.44	23.74	21.20
03H14-4P	19.97	18.63	16.64	22.98	21.45	19.15
03H14-7P	20.34	18.98	16.95	24.90	23.24	20.75
03H14-15P	21.57	20.13	17.98	27.30	25.48	22.75
03H16-24P	23.91	22.32	19.93	33.03	30.83	27.53
03H18-8P	22.46	20.96	18.71	28.13	26.25	23.44
03H18-11P	26.87	25.07	22.39	32.87	30.67	27.49
03H18-14P	22.94	21.41	19.11	31.97	29.83	26.64
03H18-31P	24.96	23.30	20.80	36.75	34.30	30.63
03H22-12P	25.14	23.46	20.95	33.63	31.39	28.03
03H22-19P	26.25	24.50	21.88	38.58	36.01	32.15
03H22-55P	32.13	29.99	26.78	53.04	49.50	44.20

Made to MS27034XXXTXXP. Solder flange mounting.

05H10-2P	$ 9.17	$ 8.55	$ 7.64	$ 9.93	$ 9.27	$ 8.28
05H10-5P	9.65	9.00	8.04	11.55	10.78	9.63
05H12-3P	10.17	9.49	8.48	12.12	11.31	10.10
05H12-12P	11.21	10.46	9.34	15.74	14.69	13.11
05H14-3P	15.33	14.31	12.78	16.16	15.08	13.46
05H14-4P	10.91	10.18	9.09	13.58	12.67	11.31
05H14-7P	11.07	10.33	9.23	15.65	14.60	13.04
05H14-15P	12.35	11.52	10.29	18.03	16.83	15.03
05H16-24P	13.86	12.94	11.55	22.94	21.41	19.11
05H18-8P	13.44	12.54	11.20	19.13	17.85	15.94
05H18-11P	18.23	17.01	15.19	23.87	22.27	19.89
05H18-14P	13.95	13.02	11.63	22.95	21.42	19.13
05H18-31P	15.93	14.87	13.28	27.74	25.89	23.11
05H22-12P	14.97	13.97	12.48	23.43	21.87	19.53
05H22-19P	16.07	14.99	13.39	28.38	26.49	23.65
05H22-55P	21.95	20.48	18.29	42.87	40.01	35.73

BAYONET COUPLING

Made to MS24265XXXBXXX. One hole mounting.

Amphenol No.† 48-	Flat, Pierced Cont. Net Each, Lots of			Solder Cup Cont.† Net Each, Lots of		
	1-9	10-24	25-99	1-9	10-24	25-99
13H10-2P	$17.78	$16.59	$14.81	$18.56	$17.32	$15.46
13H10-5P	16.07	14.99	13.39	18.30	17.08	15.25
13H12-3P	19.34	18.05	16.11	21.29	19.87	17.74
13H12-12P	20.37	19.01	16.98	24.90	23.24	20.75
13H14-3P	24.51	22.88	20.43	25.34	23.65	21.11
13H14-4P	20.07	18.73	16.73	22.92	21.39	19.10
13H14-7P	20.25	18.90	16.88	24.83	23.17	20.69
13H14-15P	21.51	20.08	17.93	27.21	25.40	22.68
13H16-24P	23.75	22.16	19.79	32.87	30.67	27.39
13H18-8P	23.42	21.85	19.51	27.17	25.35	22.64
13H18-11P	27.80	25.94	23.16	33.83	31.57	28.19
13H18-14P	23.88	22.29	19.90	32.94	30.74	27.45
13H18-31P	25.91	24.18	21.59	37.70	35.18	31.41
13H22-12P	25.68	23.97	21.40	34.17	31.89	28.48
13H22-19P	26.81	25.02	22.34	39.11	36.50	32.59
13H22-55P	32.72	30.53	27.26	53.61	50.04	44.68

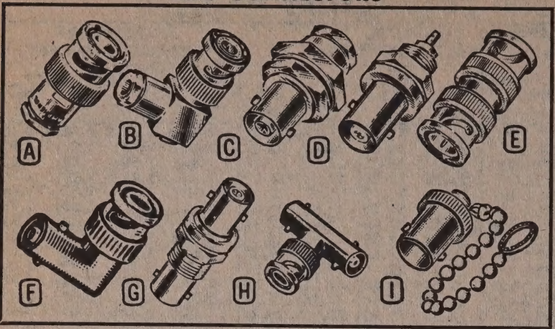
Made to MS27034XXXBXXP. Solder flange mounting.

15H10-2P	$11.40	$10.64	$ 9.50	$12.17	$11.35	$10.14
15H10-5P	11.90	11.10	9.91	13.80	12.88	11.50
15H12-3P	12.44	11.61	10.36	14.37	13.41	11.98
15H12-12P	13.44	12.54	11.20	18.00	16.80	15.00
15H14-3P	17.58	16.41	14.65	18.41	17.18	15.34
15H14-4P	13.14	12.26	10.95	15.99	14.92	13.33
15H14-7P	13.32	12.43	11.10	17.76	16.58	14.80
15H14-15P	14.60	13.62	12.16	19.14	17.86	15.95
15H16-24P	16.13	15.05	13.44	25.73	24.01	21.44
15H18-8P	15.69	14.64	13.08	21.35	19.92	17.79
15H18-11P	20.09	18.75	16.74	26.12	24.37	21.76
15H18-14P	16.19	15.11	13.49	25.28	23.59	21.06
15H18-31P	18.18	16.97	15.15	30.00	28.00	25.00
15H22-12P	17.21	16.06	14.34	25.68	23.97	21.40
15H22-19P	18.33	17.11	15.28	30.63	28.59	25.53
15H22-55P	24.21	22.60	20.18	45.11	42.10	37.59

*For types **without** contacts, add suffix **-105**: MS24265R10B5P-**105**; 48-13R10-5P-**105**. †For **Solder Cup Contacts**, add suffix **-108**: 48-03H10-2P-**108**; 48-13H10-2P-**108**.

BUNKER RAMO AMPHENOL RF Connectors

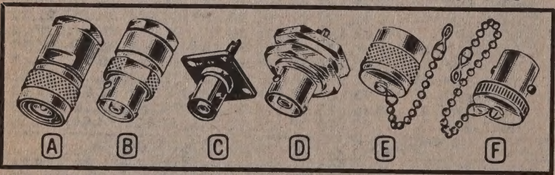
BNC CONNECTORS



Bayonet coupling coax connectors designed for RG-58, RG-59 and other cable as indicated. Use to 10,000 MHz, 500 V maximum. Also available with non-tarnish **ASTROplate®** finish. **ASTROplate** resists corrosion and abrasion; can take constant handling and high temperatures without wear-off. Mates with silver without corrosion; has equal solderability. Ideal for high temperature application (up to 2500° F).

Amphenol No.	UG/U No.	Fig.	Description	Imped. Ohms	RG Cable
31-002*	88	A	Plug	....	55, 58
31-012*	260	A	Plug	....	59, 62, 71
31-018*	88B	A	Plug	....	55, 58
31-021*	260A	A	Plug	....	59, 62, 71
31-202*	88C	A	Plug	50	55, 58
31-212*	260B	A	Plug	....	59, 62, 71
31-204	913	B	Angle Plug	....	55, 58
31-850	....	B	Angle Plug	....	59, 62, 71
31-005*	89	....	Jack	....	55, 58
31-015	261	....	Jack	....	59, 62, 71
31-019	89A	....	Jack	....	55, 58
31-022	261A	....	Jack	....	59, 62, 71
31-205	89B	....	Jack	50	55, 58
31-215	261B	....	Jack	....	59, 62, 71
31-001*	291	....	Panel Jack	....	55, 58
31-011	262	....	Panel Jack	....	59, 62, 71
31-020	291A	....	Panel Jack	....	55, 58
31-023	262A	....	Panel Jack	....	59, 62, 71
31-201	291B	....	Panel Jack	50	55, 58
31-211	262B	....	Panel Jack	....	59, 62, 71
31-206	909	C	Blkhd. Jack	50	55, 58
31-207	910	C	Blkhd. Jack	....	59, 62, 71
2075	624	C	Blkhd. Jack	....	59, 62, 71
31-003*	290	....	Panel Recpt.	....	....
31-105	....	....	Panel Recpt.	....	....
31-203*	290A	....	Panel Recpt.	50	....
31-817	447	....	Panel Recpt.	....	....
31-842	....	....	Panel Recpt.	....	....
4500	185	....	Panel Recpt.	....	....
31-222	1098	....	Angle Recpt.	50	....
31-016	254A	D	Blkhd. Recpt.	....	....
31-102*	657	D	Blkhd. Recpt.	....	....
31-221*	1094	D	Blkhd. Recpt.	50	....
31-236*	625B	D	Blkhd. Recpt.	50	....
31-218*	491A	E	Adapter	50	....
31-219*	914	E	Adapter	50	....
31-009*	306	F	Angle Adapter	....	....
31-209*	306A	F	Angle Adapter	50	....
31-220*	492A	G	Blkhd. Adapter	50	....
47000	414	G	Blkhd. Adapter	....	....
31-008*	274	H	"T" Adapter	....	....
31-208*	274A	H	"T" Adapter	50	....
31-006	CW-123	....	Cap & Chain	....	....
31-007*	CW-155	....	Cap & Chain	....	....
31-017	CW-159	....	Cap & Chain	....	....
31-026*	CW-123A	....	Cap & Chain	....	....
31-027	CW-155A	....	Cap & Chain	....	....
31-210	CW-282	I	Cap & Chain	....	....

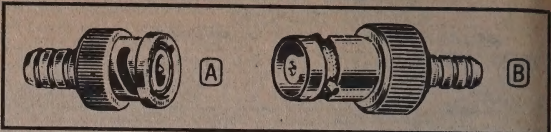
SERIES 82 TYPE C COAXIAL CONNECTORS



Low VSWR to 10,000 MHz, 1,500 V peak. Also used with cables other than 50 ohms. Meets applicable portions of MIL-C-3989.

Amphenol No.	UG/U No.	Fig.	Description	RG Cable
82-530	573A	A	Plug	8, 9
82-532	628A	A	Plug	8, 9A
82-534	709A	A	Plug	55, 58
82-531	710A	....	Angle Plug	8, 9
82-503	572	B	Panel Jack	8, 9
82-504	568	C	Panel Recpt.	....
82-515	634	D	Blkhd. Recpt.	....
82-535	567A	....	Angle Adapter	....
82-512	MX-1142	E	Male Cap & Chain	....
82-513	MX-1143	F	Female Cap & Chain	....

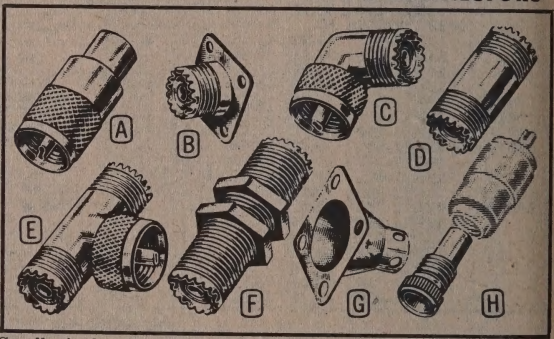
QUICK-CRIMP BNC



Exclusive design with optional crimp or solder center contact. Even with center contact crimped, connector maintains constant impedance. Non-impedance match connector when used with cables other than 50 ohm. VSWR identical to standard solder type BNC connectors, 1.25 to 1, over a frequency range to 10,000 MHz.

Amphenol No.	Like No. UG	Fig.	Description	RG/U Cable
36775*	88E	A	Plug	58, 58A, 58C, 141
36875*	88E	A	Plug	55, 55A, 142, 223
36800	89C	B	Cable Jack	58, 58A, 58C, 141
36900	89C	B	Cable Jack	55, 55A, 142, 223
34625	260B	A	Plug	71
68175*	260B	A	Plug	59, 59A, 59B, 62, 62A, 62C, 140
68150	261C	B	Cable Jack	59, 59A, 59B, 62, 62A, 62C, 140
95700	909B	....	Blkhd. Jack	55, 55A, 142, 223
95725	909B	....	Blkhd. Jack	58, 58A, 58C, 141
95750	910B	....	Blkhd. Jack	59, 59A, 59B, 62, 62A. 62C, 140
95800	910B	....	Blkhd. Jack	122, 180A, 195, Amphenol 21-597
95575	913A	....	Right Angle Plug	55, 55A, 142, 223
95600	913A	....	Right Angle Plug	58, 58A, 58C, 141
95625	913A	....	Right Angle Plug	59, 59A, 59B, 62, 62A, 62C, 140
95650	913A	....	Right Angle Plug	71
95675	913A	....	Right Angle Plug	122, 180A, 195, Amphenol 21-597
36650	1033	A	Plug	122, 180A, 195, Amphenol 21-597
36675*	1056	B	Cable Jack	122, 180A, 195, Amphenol 21-597

SERIES 83 UHF TYPE COAXIAL CONNECTORS



Small, single contact, general purpose connectors of non-constant impedance. Meet military specifications and also available with non-tarnish **ASTROplate** finish.

Amphenol No.	UG/U No.	Fig.	Description	RG/U Cable
83-1SP*	PL259	A	Plug	8, 11
83-1SPN*	PL259A	A	Plug	8, 11
83-750*	111	A	Plug	59, 62
83-850	....	A	Plug	11
83-851	....	A	Plug	8
83-59	....	......	Angle Plug	8, 11
83-1R*	SO239	B	Panel Recpt.	....
83-1RTY*	SO239	B	Panel Recpt.	....
83-716	....	B	Panel Recpt.	....
83-798*	SO239A	......	Panel Recpt.	....
83-1F*	363	F	Straight Adapter	....
83-1J*	PL258	D	Straight Adapter	....
83-1AP*	646	C	Angle Adapter	....
83-1T*	....	E	"T" Adapter	....
83-168*	176	H	Reducing Adapter	59, 62, 71
83-185*	175	H	Reducing Adapter	55, 58
83-1H*	106	G	Hood	8, 11
83-1HP	372	G	Hood	8, 11
83-765*	177	G	Hood	55, 58
83-877*	....	......	Double Male Adpt.	....
83-878*	....	......	Single Hole Recpt.	....

BN TYPE COAXIAL CONNECTORS

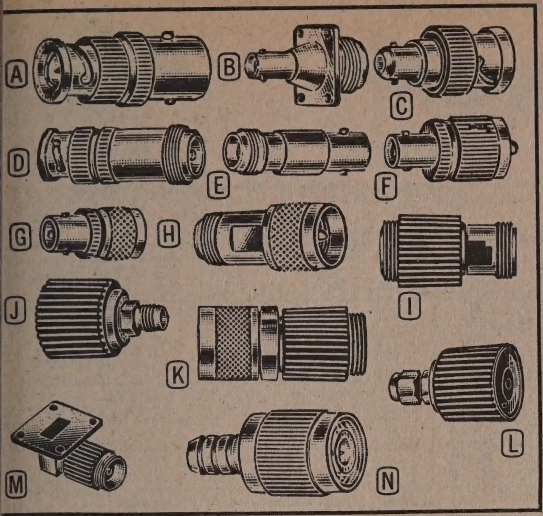
Non-impedance, low power connectors for use up to 200 MHz. Threaded coupling. 250 V maximum.

Amphenol No.	UG/U No.	Description	RG Cable
82-21	85	Plug	58, 59, 62
82-42	87	Receptacle	....

*Available with **ASTROplate** finish. Add suffix **1050** to part no. Other part numbers available in **ASTROplate** on special order.

PRICES ON REQUEST

BUNKER RAMO AMPHENOL RF Connectors



BETWEEN SERIES ADAPTERS

APC, BNC, C, HN, MB, N, SMA, TNC, UHF

mphenol No.	UG/U No.	Fig.	Mates with Plug	Mates with Recpt.	Mates with Plug	Mates with Recpt.	Imp., Ohms
83175	635	A	....	BNC	C	....	50
83200	636A	A	BNC	....	....	C	50
8900	309	B	BNC	....	....	HN	50
32750	....	B	....	BNC	HN	....	.....
47200	....	C	BNC	....	MB	....	50
47250	....	C	BNC	....	....	MB	50
47275	....	C	....	BNC	MB	....	50
31-216•	201A	D	BNC	....	....	N	.....
31-217•	349A	D	....	BNC	N	....	.....
31-830	201	D	BNC	....	....	N	.....
2800*	....	D	BNC	....	N	....	50
2975	349	D	....	BNC	N	....	50
3025†	335	D	....	BNC	N	....	50
4900	....	D	....	BNC	....	N	50
5225•	1034	D	....	BNC	....	N	50
5850‡	....	D	BNC	....	N	....	50
21850†	....	D	BNC	....	N	....	50
79025	....	E	....	BNC	TNC	....	50
79675•	....	E	BNC	....	....	TNC	50
31-028•	273	F	BNC	....	....	UHF	.....
2900•	255	F	....	BNC	UHF	....	50
12025	....	F	BNC	....	....	UHF	50
82-508	564	G	C	....	....	N	50
82-540	565A	G	....	C	N	....	50
4400•	146	H	....	N	UHF	....	.....
14000	83	H	N	....	....	UHF	.....
26700	318	H	....	N	....	UHF	.....
131-1025	....	I	APC-7		....	N	50
131-1026	....	....	APC-7		....	BNC	50
131-1027	....	....	APC-7		....	OSM	50
131-1028	....	J	APC-7		....	SMA	50
131-1035	....	K	APC-7		N	....	50
131-1036	....	....	APC-7		TNC	....	50
131-1037	....	....	APC-7		BNC	....	50
131-1038	....	L	APC-7		SMA	....	50
131-1201	....	M	APC-7		WR-62 wavegd.		.....
131-1202	....	M	APC-7		WR-90 wavegd.		.....

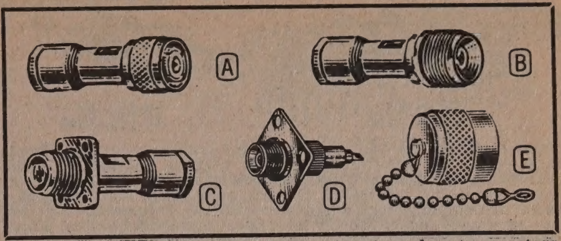
*Angle, flange mount †Bulkhead mount. ‡Pressurized, bulkhead mount. •Available with **ASTROplate**® finish. Mates with silver without corrosion; has equal solderability. Rated to 2500° F. To order, add suffix **1050** to part number.

QUICK-CRIMP TNC SERIES CONNECTORS

Exclusive design has optional crimp or solder center contact. Maintains constant impedance even when center contact is crimped. Non-impedance match connector when used with cables other than 50 ohms. VSWR is identical to standard solder type TNC connectors, 1.25 to 1, over frequency range to 10,000 MHz.

Amphenol No.	Fig.	Description	RG/U Cable
36825	N	Plug	58, 58A, 58C, 141
36925	N	Plug	55, 55B, 142, 223
34825	N	Plug	71
69350	N	Plug	59, 59A, 59B, 62, 62A, 62C, 140
97750	....	Blkhd. Jack	55, 55B, 142, 223
97775	....	Blkhd. Jack	58, 58A, 58C, 141
97825	....	Blkhd. Jack	71
97875	....	Right Angle Plug	55, 55B, 142, 223
97900	....	Right Angle Plug	58, 58A, 58C, 141
97925	....	Right Angle Plug	59, 59A, 59B, 62, 62A, 62C, 140

TYPE HN COAXIAL CONNECTORS

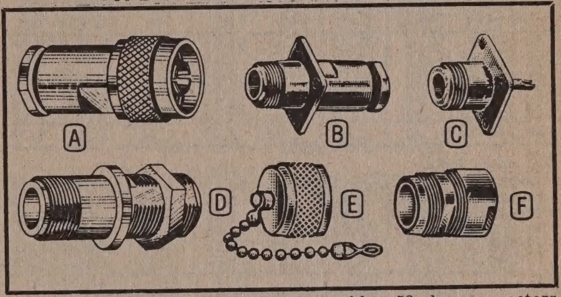


Medium size, high voltage, 50-ohm constant impedance connectors with threaded coupling. Meets applicable sections of MIL-C-3643. Low VSWR to 10,000 MHz. 1,500 V maximum.

Amphenol No.	UG/U No.	Fig.	Description	RG/U Cable
82-38*	59A	A	Straight Plug	8, 9, 10
82-111	495A	A	Straight Plug	17, 18
82-804	59B	A	Straight Plug	8, 9, 10
82-816	....	A	Straight Plug	54A
82-833	....	.....	Angle Plug	8, 9, 10
82-856	....	.....	Angle Plug	8, 9, 10
82-39	60A	B	Straight Jack	8, 9, 10
82-107	333A	B	Straight Jack	17, 18
82-814	60B	B	Straight Jack	8, 9, 10, 87
82-40	61A	C	Panel Jack	8, 9, 10
82-92	496	D	Panel Recpt.	....
82-805	560	D	Panel Recpt.	....
82-91*	212A	.....	Angle Adapter	....
82-130	....	E	Cap & Chain	....

*For **ASTROplate** finish add suffix **1050** to part no. Other numbers also available in **ASTROplate** on special order.

TYPE N COAXIAL CONNECTORS



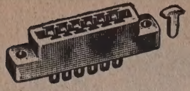
Impedance matched to 50 or 70-ohm cables. 50-ohm connectors **will not** mate with 75-ohm connectors. Frequency range, 0–10,000 MHz. 500 V maximum. Threaded coupling. Also available with non-tarnish **ASTROplate**® finish. **ASTROplate** resists corrosion and abrasion; can take constant handling and high temperatures without wear-off. Mates with silver without corrosion; has equal solder ability. Ideal for high temp. application (up to 2500° F).

Amphenol No.	UG/U No.	Fig.	Description	Imped. Ohms	RG/U Cable
82-61*	21B	A	Plug	50	8, 9, 10
82-84	94A	A	Plug	70	11, 12, 13
82-86	18B	A	Plug	50	5, 6, 21
82-96	21C	A	Plug	50	8, 9, 10
82-104	167A	....	Plug	50	17, 18
82-202*	21D	A	Plug	50	8, 9, 10
82-203	18C	A	Plug	50	5, 6, 21
82-204	941A	A	Plug	50	10, 12
34000*	536	A	Plug	50	58, 141
82-835	....	....	Angle Plug	50	8, 9, 10, 87A
82-63	23B	B	Jack	50	8, 9, 10
82-88	20B	B	Jack	50	5, 6, 21
82-89	95A	B	Jack	70	11, 12, 13
82-209	23D	B	Jack	50	8, 9, 10
82-212	940A	B	Jack	50	10, 12
82-62	22B	B	Panel Jack	50	8, 9, 10
82-87	19B	B	Panel Jack	50	5, 6, 21
82-90	96A	B	Panel Jack	70	11, 12, 13
35500	593	B	Panel Jack	50	59, 62, 71
82-67	160A	....	Blkhd. Jack	50	8, 9, 10
82-93	160B	....	Blkhd. Jack	50	8, 9, 10
82-24*	58	C	Panel Recpt.	50	....
82-97*	58A	C	Panel Recpt.	50	....
82-112	....	C	Panel Recpt.	70	....
82-811*	680	....	Blkhd. Recpt.	50	....
82-65	29A	D	Adapter	50	....
82-100*	57B	D	Adapter	50	....
82-101	29B	D	Adapter	50	....
82-64	27A	....	Angle Adapter	50	....
82-98	27B	....	Angle Adapter	50	....
82-213	27C	....	Angle Adapter	50	....
82-66	30	....	Blkhd. Adapter	50	....
82-36	107A	....	"T" Adapter	50	....
82-99	28A	....	"T" Adapter	50	....
82-102	107B	....	"T" Adapter	50	....
82-106*	MX913	E	Cap & Chain	....	....

*For **ASTROplate** finish, add suffix **1050** to part no. Other numbers also available in **ASTROplate** on special order.

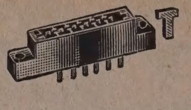
PRICES ON REQUEST

CINCH PC Edge Connectors

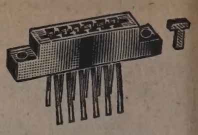


50-6A-20
50-6A-20M

50-12A-30
50-12A-30M



50-12B-10
50-12B-10M



50-12B-20

Printed circuit connectors designed for minimum printed circuit card wear, low insertion force and positive contact with the printed circuit board. Units with solder tab or dip solder terminations utilize bifurcated contacts permitting two flexing surfaces instead of one for positive contact. Bifurcated contacts are especially recommended for added contact reliability where vibration or printed circuit board irregularities would otherwise cause trouble. Types meeting MIL spec MIL-C-21097B are also available as indicated. **Termination:** Bifurcated contacts with conventional 0.115″ x 0.050″ slot solder tabs. **Mounting:** Available with 0.128″ dia. holes for standard mounting, molded-in bushings or floating bushings. Diameter of 0.142″ also available on request. **Insulator Material:** Green glass-filled diallyl phthalate type SDG-F per MIL-M-14. **Contacts:** Phosphor bronze with 30 micro-inches gold finish; beryllium copper with 50 micro-inches gold to meet MIL-C-21097B as specified. **Polarizing Keys:** Ordered separately as follows: No. 50-PK-1 for in-contact polarization made of diallyl phthalate; No. 50-PK-2 for between-contact polarization made of glass epoxy. **Voltage Rating:** 830 VAC rms at sea level. **Current:** Rated 5.0 amps. **Contact Resistance:** 0.005 ohm at rated current. **Insulation Resistance:** 5,000 megohms. **Temperature Cycling:** 5 continuous cycles per Method 107B, Test Condition B. Beryllium copper, −65° C to +125° C; phosphor bronze, −65° C to +105° C.

COMMERCIAL TYPES

SINGLE READOUT WITHOUT BUSHINGS

Conventional solder tails.

Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-6A-20	6	$1.33	$1.06	$0.90	$0.71	$0.67	$0.64
50-10A-20	10	1.78	1.43	1.18	.96	.92	.85
50-12A-20	12	2.02	1.69	1.34	1.07	1.02	.97
50-15A-20	15	2.36	1.87	1.58	1.26	1.18	1.12
50-18A-20	18	2.70	2.15	1.79	1.43	1.37	1.30
50-22A-20	22	3.15	2.52	2.10	1.67	1.60	1.51
50-25A-20	25	3.76	3.00	2.50	2.01	1.91	1.79

Dip solder tails.

50-6B-10	6	$1.33	$1.06	$0.90	$0.71	$0.67	$0.64
50-10B-10	10	1.78	1.43	1.18	.96	.92	.85
50-15B-10	15	2.36	1.87	1.58	1.26	1.18	1.12
50-18B-10	18	2.70	2.15	1.79	1.43	1.37	1.30
50-22B-10	22	3.15	2.52	2.10	1.67	1.60	1.51
50-25B-10	25	3.76	3.00	2.50	2.01	1.91	1.79

DOUBLE READOUT WITHOUT BUSHINGS

Conventional solder tails.

50-12A-30	6	$1.33	$1.06	$0.90	$0.71	$0.67	$0.64
50-20A-30	10	1.78	1.43	1.18	.96	.92	.85
50-24A-30	12	2.02	1.69	1.34	1.07	1.02	.97
50-30A-30	15	2.36	1.87	1.58	1.26	1.18	1.12
50-36A-30	18	2.70	2.15	1.79	1.43	1.38	1.30
50-44A-30	22	3.15	2.52	2.10	1.67	1.60	1.51
50-50A-30	25	3.76	3.00	2.50	2.01	1.91	1.79

Dip solder tails.

50-12B-10	6	$1.33	$1.06	$0.90	$0.71	$0.67	$0.64
50-20B-10	10	1.78	1.43	1.18	.96	.92	.85
50-24B-10	12	2.02	1.69	1.34	1.07	1.02	.97
50-30B-10	15	2.36	1.87	1.58	1.26	1.18	1.12
50-36B-10	18	2.70	2.15	1.79	1.43	1.37	1.30
50-44B-10	22	3.15	2.52	2.10	1.67	1.60	1.51
50-50B-10	25	3.76	3.00	2.50	2.01	1.91	1.79

Wrap post tails.

Cinch Number	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
50-12B-20	6	$3.23	$2.60	$2.16	$1.73	$1.65	$1.56
50-20B-20	10	4.06	3.24	2.71	2.16	2.06	1.96
50-24B-20	12	4.47	3.57	2.98	2.38	2.26	2.14
50-30B-20	15	5.07	4.06	3.39	2.71	2.58	2.44
50-36B-20	18	5.69	4.54	3.79	3.04	2.87	2.73
50-44B-20	22	6.49	5.20	4.33	3.46	3.29	3.12

MIL-C-21097B PC CONNECTORS

SINGLE READOUT

With conventional wiring tails, no bushings.

Cinch Number 50-	MIL No. M21097/	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
6A-20M	1-001	6	$1.71	$1.37	$1.13	$0.91	$0.87	$0.82
10A-20M	1-037	10	2.39	1.91	1.60	1.28	1.21	1.14
15A-20M	1-073	15	3.23	2.59	2.16	1.73	1.65	1.56
18A-20M	1-109	18	3.76	3.00	2.50	2.01	1.91	1.79
22A-20M	1-145	22	4.44	3.55	2.95	2.36	2.25	2.13

With conventional wiring tails, molded-in bushings.

6A-20MB	1-004	6	$3.80	$3.04	$2.53	$2.03	$1.92	$1.67
10A-20MB	1-040	10	4.41	3.53	2.95	2.36	2.24	1.98
15A-20MB	1-076	15	5.21	4.17	3.48	2.78	2.64	2.35
18A-20MB	1-112	18	5.65	4.53	3.78	3.02	2.86	2.55
22A-20MB	1-148	22	6.26	5.01	4.18	3.34	3.17	2.86

With conventional wiring tails, floating bushings.

6A-20MFB	1-007	6	$2.25	$1.80	$1.50	$1.19	$1.13	$1.08
10A-20MFB	1-043	10	2.93	2.35	1.96	1.56	1.48	1.41
15A-20MFB	1-079	15	3.78	3.03	2.52	2.02	1.92	1.81
18A-20MFB	1-115	18	4.30	3.44	2.86	2.29	2.17	2.06
22A-20MFB	1-151	22	4.97	3.98	3.32	2.66	2.53	2.39

DOUBLE READOUT

With conventional wiring tails, no bushings.

Cinch Number 50-	MIL No. M21097/	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
12A-30M	1-019	6	$1.71	$1.37	$1.13	$0.91	$0.87	$0.82
20A-30M	1-055	10	2.39	1.91	1.60	1.28	1.21	1.14
30A-30M	1-091	15	3.23	2.59	2.16	1.73	1.65	1.56
36A-30M	1-127	18	3.76	3.00	2.50	2.01	1.91	1.79
44A-30M	1-163	22	4.44	3.55	2.95	2.37	2.25	2.13

With conventional wiring tails, molded-in bushings.

12A-30MB	1-022	6	$3.80	$3.04	$2.53	$2.03	$1.92	$1.67
20A-30MB	1-058	10	4.41	3.53	2.95	2.36	2.24	1.98
30A-30MB	1-094	15	5.21	4.17	3.48	2.78	2.64	2.35
36A-30MB	1-130	18	5.65	4.53	3.78	3.02	2.86	2.55
44A-30MB	1-166	22	6.26	5.01	4.18	3.34	3.17	2.86

With conventional wiring tails, floating bushings.

Cinch Number 50-	MIL No. M21097/	Contact Pos.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
12A-30MFB	1-025	6	$2.25	$1.80	$1.50	$1.19	$1.13	$1.08
20A-30MFB	1-061	10	2.93	2.35	1.96	1.56	1.48	1.41
30A-30MFB	1-097	15	3.78	3.03	2.52	2.02	1.92	1.81
36A-30MFB	1-133	18	4.30	3.44	2.86	2.29	2.17	2.06
44A-30MFB	1-169	22	4.97	3.98	3.32	2.66	2.53	2.39

With dip solder tails, no bushings.

12B-10M	1-028	6	$1.71	$1.37	$1.13	$0.91	$0.87	$0.82
20B-10M	1-064	10	2.39	1.91	1.60	1.28	1.21	1.14
30B-10M	1-100	15	3.23	2.59	2.16	1.73	1.65	1.56
36B-10M	1-136	18	3.76	3.00	2.50	2.01	1.91	1.79
44B-10M	1-172	22	4.44	3.55	2.95	2.37	2.25	2.13

POLARIZING KEYS

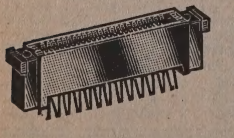
Cinch No. 50-	Polarization	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
PK-1	In-contact	$0.069	$0.055	$0.046	$0.037	$0.035	$0.033
PK-2	Between contact	.064	.051	.043	.037	.034	.031

CARD GUIDE

For use with edge connectors with 0.156″ spacing or with 0.100 centers, 1/16″ boards.

PK-3	....	$0.069	$0.055	$0.046	$0.037	$0.035	$0.033

TYKON MINIATURE EDGE CONNECTORS



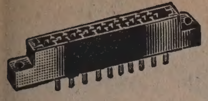
High density edge connectors with .050″ centers for use with double-sided .062″ printed circuit boards. Conventional wiring tails. Insulator is diallyl phthalate, type SDG-F per MIL-M-14F. Contacts are beryllium copper with .00003″ gold plate per MIL-G-45204 Type II. Carbon steel mounting clip for use in semi-flush printed circuit mounting, and cellulose acetate polarizing key available as separate items.

Cinch Number 50-	Cont. Pos.	No. of Cont.	*Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500 Up
12A-40	6	12	$3.63	$2.89	$2.41	$1.93	$1.83	$1.74
20A-40	10	20	4.47	3.57	2.98	2.38	2.26	2.14
30A-40	15	30	5.52	4.43	3.69	2.94	2.80	2.67
40A-40	20	40	6.58	5.26	4.38	3.50	3.33	3.16
50A-40	25	50	7.63	6.10	5.08	4.08	3.86	3.66
MC	Mounting Clip		.22	.16	.14	.13	.12	.10
PK	Polarizing Key		.19	.15	.14	.13	.12	.11

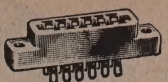
★DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

CINCH PC BOARD EDGE CONNECTORS

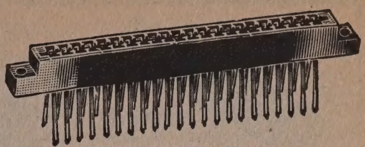
PC BOARD EDGE CONNECTORS



Extended Tail Dip Solder



Card Extender



Wire Wrap Terminal

Three series of 0.156″ centers PC edge connectors have special purpose terminals which make them particularly well-suited in special applications.

Extended Tail Dip Solder Terminal Series: These connectors have 15/64″ terminations that are long enough to pass through two or three 1/16″ PC boards. The connector can be used to connect two PC boards at right angles to third or to provide the equivalent of a double-sided or multilayer board by making a sandwich of two or three boards. Can also be used where a component is to be soldered to the underside of the board at the connector. Connectors designed for minimum card wear, low insertion force and incorporate bifurcated phosphor bronze contacts with 30 micro-inches gold plating for positive electric contact even under high vibration conditions or printed circuit board irregularities. Insulator is glass-filled diallyl phthalate type SDG-F per MIL-M-14. Connectors are available in both single and double read-out.

Card Extender Series: Permit end-to-end connection of PC boards. The solder tabs terminals are formed so that there is 0.050″ spacing between rows. Insertion of a standard 1/16″ board between the rows allows soldering of terminals to the printed circuit conductor paths to form a permanent, vibration-proof attachment. Designed for minimum card wear, low insertion force and incorporate beryllium copper contacts with 30 micro-inches gold plating for positive electric contact. Insulator is glass-filled diallyl phthalate type SDG-F per MIL-M-14.

Wire Wrap* Terminal Series: Economical, high quality printed circuit board terminals have cantilever contact construction which provides a simple dependable design capable of handling 1/16″ thick single or double sided boards. Contacts are preloaded against an insulator stop to provide gap uniformity and assure rapid build-up of force to the PC board. Construction combines minimum insertion force with maximum contact pressure. Comb contact formation permits simultaneous insertion of contacts for consistency of assembly and increased speed. Wire Wrap tails are available in lengths of .550″, .750″ and 1.051″ to accommodate Wire Wrap equipment and popular clip-on connections. Contact is automatically inserted, locked in position and is preloaded in one operation. Bifurcated phosphor bronze contacts with 30 micro-inches gold plating are designed so that contact pressure is independent of depth of PC board insertion. Selective gold plating permits concentration of gold in area of contact at substantially reduced cost. Wire Wrap termination of 0.031″ x 0.062″, between contact polarizing. Insulator is of general purpose impact phenolic and black color. **Models 50-30W-10 and 50-44W-10** have .045″ square tail Wire Wrap terminals on .156″ spacing, double read-out for 1/16″ printed circuit boards, and have .128″ diameter mounting holes. **Model 50-80W-20** has .025″ square tail Wire Wrap terminals on .125″ centers; .156″ diameter mounting holes. **Polarizing Key 50-PK-2** is used for these connectors and must be ordered separately.

*Registered Gardner-Denver trademark.

EXTENDED TAIL DIP SOLDER TERMINAL SERIES

Single read-out connectors.

Cinch Number	Contact Pos.	Net Each, Lots of*					
		1-24	25-49	50-99	100-249	250-499	500-Up
50-6S-10	6	$1.33	$1.06	$0.90	$0.71	$0.67	$0.64
50-10S-10	10	1.78	1.43	1.18	.96	.92	.85
50-12S-10	12	2.02	1.69	1.34	1.07	1.02	.97
50-15S-10	15	2.36	1.87	1.58	1.26	1.18	1.12
50-18S-10	18	2.70	2.15	1.79	1.43	1.37	1.30
50-22S-10	22	3.15	2.52	2.10	1.67	1.60	1.51
50-25S-10	25	3.76	3.00	2.50	2.01	1.91	1.79

Double read-out connectors.

Cinch Number	Contact Pos.	1-24	25-49	50-99	100-249	250-499	500-Up
50-12S-20	6	$1.33	$1.06	$0.90	$0.71	$0.67	$0.64
50-20S-20	10	1.78	1.43	1.18	.96	.92	.85
50-24S-20	12	2.02	1.69	1.34	1.07	1.02	.97
50-30S-20	15	2.36	1.87	1.58	1.26	1.18	1.12
50-36S-20	18	2.70	2.15	1.79	1.43	1.37	1.30
50-44S-20	22	3.15	2.52	2.09	1.67	1.60	1.51
50-50S-20	25	4.41	3.53	2.95	2.36	2.24	1.98

CARD EXTENDER SERIES

Double read-out connectors.

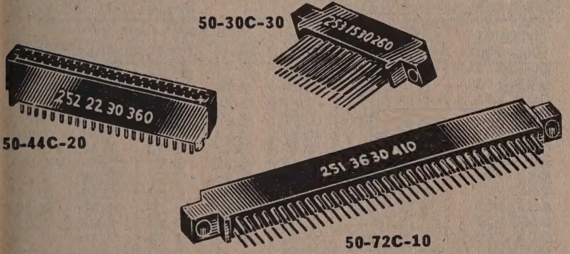
Cinch Number	Contact Pos.	Net Each, Lots of*					
		1-24	25-49	50-99	100-249	250-499	500-Up
50-12S-30	6	$1.69	$1.36	$1.11	$0.90	$0.84	$0.80
50-20S-30	10	2.00	1.65	1.40	1.28	1.12	1.07
50-24S-30	12	2.35	1.87	1.57	1.26	1.18	1.12
50-30S-30	15	2.93	2.35	1.96	1.56	1.48	1.41
50-36S-30	18	3.24	2.62	2.19	1.77	1.69	1.62
50-44S-30	22	3.83	3.08	2.58	2.07	1.98	1.86
50-50S-30	25	4.51	3.63	3.05	2.45	2.34	2.07

WIRE WRAP TERMINAL SERIES

Double read-out connectors.

Cinch Number	Contact Pos.	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-Up
50-30W-10	15/30	$5.34	$4.27	$3.56	$2.84	$2.55	$1.73
50-44W-10	22/44	7.25	5.80	4.74	3.87	3.68	3.48
50-44E-10	22/44	4.08	3.27	2.72	2.17	2.06	1.96
50-44F-10	22/44	4.08	3.27	2.72	2.17	2.06	1.96
50-44G-10	22/44	4.08	3.27	2.72	2.17	2.06	1.96
50-80W-20	40/80	7.88	6.30	5.25	4.20	4.00	3.78

PRECISION DOUBLE READ-OUT EDGE CONNECTORS WITH 0.100 INCH CENTERS, 1/16″ BOARDS



Unique bifurcated cantilever contact construction provides simple, dependable design capable of handling 1/16″ thick printed circuit boards. Contacts pre-loaded against an insulator stop to provide gap uniformity and assure rapid build-up of force to the PC board. Contacts are grade A phosphor bronze, gold plated with 30 micro-inches of gold over 50 micro-inches of nickel in contact area and 10 micro-inches minimum gold on remainder of contact, per MIL-G-45204, Type II. Insulation, glass-filled diallyl phthalate, Type SDG-F per MIL-M-14. **Polarizing Key: No. 50-PK-3,** ordered separately. **Card Guide: No. 50-GP-1,** must also be ordered separately.

Conventional solder tails.

Cinch Number	Contact Pos.	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-Up
50-30C-10	15	$3.37	$2.70	$2.25	$1.79	$1.70	$1.62
50-44C-10	22	3.98	3.17	2.65	2.12	2.00	1.91
50-72C-10	36	5.18	4.14	3.45	2.76	2.61	2.48
50-80C-10	40	5.46	4.37	3.64	2.90	2.75	2.62
50-86C-10	43	5.80	4.64	3.86	3.09	2.91	2.78
50-100C-10	50	6.37	5.09	4.24	3.40	3.22	3.05

Dip solder tails.

Cinch Number	Contact Pos.	1-24	25-49	50-99	100-249	250-499	500-Up
50-30C-20	15	$3.37	$2.70	$2.25	$1.79	$1.70	$1.62
50-44C-20	22	3.98	3.17	2.65	2.12	2.00	1.91
50-72C-20	36	5.18	4.14	3.45	2.76	2.61	2.48
50-80C-20	40	5.46	4.37	3.64	2.90	2.75	2.62
50-86C-20	43	5.80	4.64	3.86	3.09	2.91	2.78
50-100C-20	50	6.37	5.09	4.24	3.40	3.22	3.05

Wire Wrap tails.

Cinch Number	Contact Pos.	1-24	25-49	50-99	100-249	250-499	500-Up
50-30C-30	15	$3.42	$2.75	$2.30	$1.84	$1.75	$1.67
50-44C-30	22	4.03	3.22	2.70	2.17	2.05	1.96
50-72C-30	36	5.23	4.19	3.50	2.81	2.66	2.53
50-80C-30	40	5.51	4.42	3.69	2.96	2.80	2.67
50-86C-30	43	5.85	4.69	3.91	3.14	2.97	2.83
50-100C-30	50	6.49	5.19	4.33	3.46	3.27	2.11

POLARIZING KEYS

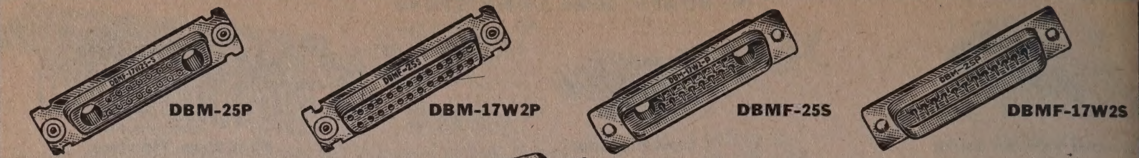
Cinch Number	Std. Pkg.	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500 Up
50-PK-3	500	$0.069	$0.055	$0.046	$0.037	$0.035	$0.033
50-PK-2	500	.064	.051	.043	.037	.034	.031

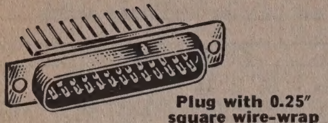
CARD GUIDE

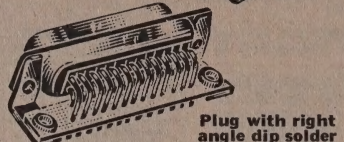
Cinch Number	Std. Pkg.	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500 Up
50-GP-1	10	$0.28	$0.227	$0.191	$0.155	$0.148	$0.142

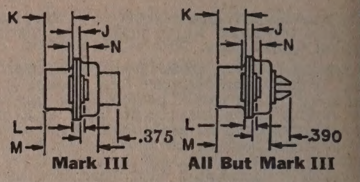
★DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

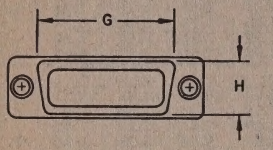
CINCH D-SUBMINIATURE CONNECTORS*

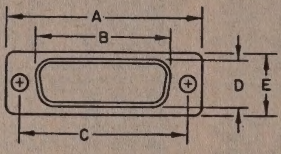



Plug with 0.25″ square wire-wrap terminations


Plug with right angle dip solder PC terminations







Five basic shell sizes cover a full array of contact configurations for most rack and panel applications. Solder pot contacts rated 5 amps (1.5 amps, MIL) are standard; crimp-on contacts available. Cadmium-plated steel shell has yellow chromate coating. Insulators glass filled diallyl phthalate per MIL-M-14F, Type SDG in monobloc construction; or, two-piece nylon insulator. Pins and sockets are #20 AWG; coaxial contacts and high voltage contacts available. **Voltage:** 1700 VAC rms, 60 Hz at sea level, average flashover; 1250 volts, test. D-H series, 1000 VAC rms, 60 Hz at sea level, flashover; 750 volts, test. **Insulation:** 5,000 megohms, MIL-STD-202A, Method 302. **Contact Voltage Drop:** 2.67 mV max. per amp, MIL-C-8384B, Para. 4.6.4. **Contact Separation Force:** 1–8 oz. **Environment:** MIL-STD-202A, Meth. 106, moisture; Meth. 204, vibration; Meth. 202A, shock; Meth. 101A, Cond. B, 50-hr. salt spray; Meth. 301, high potential; Meth. 102A, Cond. D, temp. cycling. All referenced in MIL-C-8384B.

Cinch No. by Shell Size	Dimension Key, Inches											
	A	B‡	C†	D‡	E	G	H	J	K	L	M	N
DE*-9P	1.213	.697	.984	.360	.494	.759	.422	.030	.236	.045	.422	.120
DE*-9S	1.213	.640	.984	.308	.494	.759	.422	.030	.243	.045	.429	.120
DA*-15P	1.541	1.025	1.312	.360	.494	1.083	.422	.030	.236	.045	.422	.120
DA*-15S	1.541	.968	1.312	.308	.494	1.083	.422	.030	.243	.045	.429	.120
DB*-25P	2.088	1.583	1.852	.378	.494	1.625	.422	.039	.231	.060	.426	.129
DB*-25S	2.088	1.508	1.852	.308	.494	1.625	.422	.030	.243	.045	.429	.120
DC*-37P	2.729	2.231	2.500	.378	.494	2.272	.422	.039	.231	.060	.426	.129
DC*-37S	2.729	2.156	2.500	.308	.494	2.272	.422	.030	.243	.045	.429	.120
DD*-50P	2.635	2.127	2.406	.484	.605	2.178	.534	.039	.231	.060	.426	.129
DD*-50S	2.635	2.062	2.406	.420	.605	2.178	.534	.030	.243	.045	.429	.120

*Refer to ordering code for insulator type designation. †.120″ dia. holes, standard units; .086″ dia., float mount units. ‡Measured as outside dimensions at bottom of the draw.

HOW TO ORDER

D E SM F -9 P

Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ

Ⓐ **Prefix:** Indicates Cinch Series **D.**

Ⓑ **Shell Size:** Five basic sizes determined by insert arrangement. See table of dimensions for sizes: **E, A, B, C** and **D.**

Ⓒ **Insulator Type:** If **none,** insulator is two-piece nylon; **M,** monobloc diallyl phthalate with solder pot contacts; **MA,** same as M, but with snap-in, removable, crimp, rear release assembly; **SM,** same as M, but crimp, snap-in contacts.

Ⓓ **Float Mount:** Float-mounting shell type available for all standard connectors. Has stainless steel washers and rivets.

Ⓔ **Insert Arrangement:** Choice of 9, 15, 20, 37 or 50 contacts, standard. Combination layouts available with coaxial cavities in Mark I Golden "D" series (see listing). High voltage cavities also available; details on request.

Ⓕ **Contact Type: P,** Pin; **S,** Socket.

MARK III ROYAL "D" CONNECTOR

Snap-in, removable crimp contacts with rear release assembly. Contacts not interchangeable but units will mate and are interchangeable with all other D Series. Insulator diallyl phthalate, glass fiber filled, per MIL-P-19833, Type GDK-30F, royal purple color, monobloc construction. **Contacts:** Pin, leaded copper, gold plate over silver plate; socket, copper alloy, gold plate over silver plate with stainless steel sleeves.

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DEMA-9P	9	Pin	$ 6.21	$ 5.59	$ 4.67	$ 3.72	$ 3.42
DEMAF-9P	9	Pin	6.92	6.23	5.19	4.15	3.81
DEMA-9S	9	Socket	6.40	5.76	4.79	3.84	3.51
DEMAF-9S	9	Socket	7.11	6.40	5.34	4.26	3.90
DAMA-15P	15	Pin	7.91	7.12	5.92	4.75	4.35
DAMAF-15P	15	Pin	8.62	7.76	6.47	5.17	4.74
DAMA-15S	15	Socket	8.90	8.01	6.67	5.35	4.90
DAMAF-15S	15	Socket	9.61	8.66	7.21	5.77	5.28
DBMA-25P	25	Pin	10.62	9.56	7.97	6.37	5.84
DBMAF-25P	25	Pin	11.41	10.28	8.56	6.85	6.27
DBMA-25S	25	Socket	12.95	11.65	9.71	7.77	7.12
DBMAF-25S	25	Socket	13.74	12.36	10.31	8.24	7.56
DCMA-37P	37	Pin	13.87	12.49	10.40	8.33	7.63
DCMAF-37P	37	Pin	14.67	13.17	11.00	8.81	8.06
DCMA-37S	37	Socket	17.76	15.99	13.33	10.65	9.76
DCMAF-37S	37	Socket	18.55	16.70	13.91	11.12	10.20
DDMA-50P	50	Pin	17.35	15.61	13.01	10.40	9.54
DDMAF-50P	50	Pin	18.14	16.32	13.61	10.88	9.97
DDMA-50S	50	Socket	22.93	20.63	17.20	13.76	12.61
DDMAF-50S	50	Socket	23.72	21.35	17.79	14.23	13.04

MARK III MIL-C-24308 VERSIONS

Cinch Number	Description	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
M24308/2-1	**DEMA-9S**	$ 6.80	$ 5.95	$ 4.99	$ 4.04	$ 3.71
M24308/2-2	**DAMA-15S**	9.37	8.34	6.99	5.67	5.22
M24308/2-3	**DBMA-25S**	13.53	12.18	10.25	8.30	7.65
M24308/2-4	**DCMA-37S**	18.85	16.79	14.12	11.45	10.57
M24308/2-5	**DDMA-50S**	24.16	21.71	18.28	14.84	13.69
M24308/4-1	**DEMA-9P**	6.50	5.81	4.88	3.93	3.64
M24308/4-2	**DAMA-15P**	8.26	7.40	6.21	5.03	4.62
M24308/4-3	**DBMA-25P**	11.08	9.95	8.36	6.76	6.23
M24308/4-4	**DCMA-37P**	14.72	13.13	11.04	8.96	8.27
M24308/4-5	**DDMA-50P**	18.33	16.40	13.79	11.19	10.32

*Manufactured under license agreement with ITT Cannon.

ORIGINAL "D" CONNECTORS

Two-piece construction utilizes Zytel® casting material; keystone shape assures proper polarization. Friction coupling is standard; locking accessories and floating mount shells also available. **Temp. Range:** −65° F to +250° F. **Contacts:** Pin, gold plate over silver-plated brass; socket, gold plate over silver-plated phosphor bronze. ® DuPont trademark.

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DE-9P	9	Pin	$1.28	$1.15	$0.98	$0.77	$0.71
DE-9S	9	Socket	1.84	1.65	1.38	1.10	1.01
DEF-9P	9	Pin	2.03	1.84	1.53	1.23	1.12
DEF-9S	9	Socket	2.60	2.33	1.95	1.56	1.42
DA-15P	15	Pin	1.81	1.63	1.37	1.09	1.00
DA-15S	15	Socket	2.68	2.42	2.01	1.60	1.47
DAF-15P	15	Pin	2.58	2.32	1.93	1.53	1.41
DAF-15S	15	Socket	3.44	3.09	2.59	2.08	1.90
DB-25P	25	Pin	2.63	2.36	1.97	1.57	1.44
DB-25S	25	Socket	4.11	3.70	3.08	2.47	2.26
DBF-25P	25	Pin	3.46	3.11	2.61	2.09	1.91
DBF-25S	25	Socket	4.94	4.46	3.71	2.98	2.72
DC-37P	37	Pin	3.57	3.21	2.67	2.15	1.97
DC-37S	37	Socket	5.83	5.24	4.37	3.49	3.21
DCF-37P	37	Pin	4.41	3.97	3.31	2.64	2.43
DCF-37S	37	Socket	6.66	6.00	5.00	4.01	3.68
DD-50P	50	Pin	4.66	4.18	3.48	2.80	2.56
DD-50S	50	Socket	7.68	6.91	5.77	4.59	4.22
DDF-50P	50	Pin	5.48	4.93	4.12	3.30	3.02
DDF-50S	50	Socket	8.51	7.66	6.40	5.11	4.69

ORIGINAL "D" CONNECTORS .025″ X .025″ WIRE WRAP TAILS, ⅜″ LONG

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DE-9P-F179	9	Pin	$ 2.09	$1.69	$1.47	$1.29	$1.23
DE-9S-F179	9	Socket	3.79	3.02	2.51	2.01	1.84
DA-15P-F179	15	Pin	2.71	2.15	1.89	1.69	1.59
DA-15S-F179	15	Socket	5.18	4.13	3.44	2.75	2.52
DB-25P-F179	25	Pin	4.25	3.39	2.93	2.45	2.33
DB-25S-F179	25	Socket	6.03	4.84	4.24	3.79	3.55
DC-37P-F179	37	Pin	5.80	4.61	4.06	3.50	3.31
DC-37S-F179	37	Socket	8.03	6.44	6.13	5.82	5.51
DD-50P-F179	50	Pin	6.88	5.49	4.83	4.35	4.11
DD-50S-F179	50	Socket	10.58	8.46	8.04	7.58	7.07

D-SUBMINIATURE CONNECTORS★ (CONT'D)

MARK I GOLDEN "D" CONNECTORS

Monobloc insulator design of glass-filled diallyl phthalate (FS-5) er MIL-M-14F, Type SGD. Keystone cornered shell provides roper polarization. Friction coupling is standard; locking accesories are available. Floating mount shells also available. **Temerature Range:** −65° F to +300° F. **Contacts:** Pin contacts, old plate over silver-plated brass; female contacts, gold plate ver silver-plated phosphor bronze.

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DEM-9P	9	Pin	$ 2.54	$ 2.29	$ 1.91	$1.52	$1.39
DEM-9S	9	Socket	3.50	3.15	2.64	2.12	1.94
DEMF-9P	9	Pin	3.30	2.97	2.46	1.98	1.80
DEMF-9S	9	Socket	4.26	3.84	3.20	2.56	2.36
DAM-15P	15	Pin	3.67	3.30	2.74	2.19	2.01
DAM-15S	15	Socket	5.20	4.69	3.90	3.11	2.86
DAMF-15P	15	Pin	4.42	3.98	3.32	2.65	2.44
DAMF-15S	15	Socket	5.96	5.36	4.47	3.57	3.28
DBM-25P	25	Pin	5.40	4.85	4.06	3.24	2.98
DBM-25S	25	Socket	8.01	7.20	6.02	4.80	4.40
DBMF-25P	25	Pin	6.23	5.61	4.68	3.74	3.43
DBMF-25S	25	Socket	8.85	7.96	6.63	5.30	4.85
DCM-37P	37	Pin	7.54	6.78	5.65	4.52	4.14
DCM-37S	37	Socket	11.41	10.28	8.56	6.84	6.28
DCMF-37P	37	Pin	8.38	7.54	6.28	5.03	4.60
DCMF-37S	37	Socket	12.25	11.02	9.18	7.34	6.74
DDM-50P	50	Pin	9.76	8.80	7.32	5.87	5.37
DDM-50S	50	Socket	14.97	13.47	11.23	8.98	8.23
DDMF-50P	50	Pin	10.61	9.55	7.95	6.36	5.84
DDMF-50S	50	Socket	15.81	14.22	11.87	9.49	8.68

MARK I GOLDEN "D" CONNECTORS—RIGHT ANGLE PC CONTACTS

Pins are 0.040″ nominal diameter and extend 0.093″ below the 90° bracket. A terminal alignment strip, held on by means of the brackets, is supplied with each connector.

DEM-9PA	9	Pin	$ 7.49	$ 7.36	$ 6.70	$ 6.03	$ 5.36
DAM-15PA	15	Pin	10.63	9.66	8.05	7.32	6.71
DBM-25PA	25	Pin	15.92	14.47	13.15	11.83	10.60
DCM-37PA	37	Pin	17.51	15.91	14.86	13.79	13.43

MARK I GOLDEN "D" COAXIAL CONNECTORS
SHELL ASSEMBLIES

Insulator is diallyl phthalate (FS-5) per MIL-M-14F, Type SGD. Includes 5-amp contacts assembled, but not coaxial contacts which are ordered separately, (see below). **Suffix: S,** socket; **P,** pin plug.

Cinch Number	Number of		Net Each, Lots of				
	Cavities	Contacts	1-9	10-49	50-99	100-249	250-499
DEM-5W1P	1	4	$2.18	$1.96	$1.64	$1.31	$1.21
DEM-5W1S	1	4	2.51	2.25	1.88	1.50	1.38
DAM-3W3P	3	None	1.69	1.51	1.26	1.02	.92
DAM-3W3S	3	None	1.69	1.51	1.26	1.02	.92
DAMF-3W3S	3	None	2.44	2.20	1.84	1.47	1.35
DAM-11W1P	1	10	3.15	2.84	2.36	1.90	1.74
DAM-11W1S	1	10	3.96	3.57	2.98	2.37	2.18
DAMF-11W1P	1	10	3.91	3.51	2.95	2.35	2.16
DAMF-11W1S	1	10	4.72	4.24	3.53	2.83	2.60
DAM-7W2P	2	5	2.40	2.17	1.81	1.45	1.33
DAM-7W2S	2	5	2.81	2.54	2.12	1.69	1.55
DAMF-7W2S	2	5	3.57	3.21	2.67	2.15	1.96
DBM-13W3P	3	10	3.36	3.02	2.52	2.00	1.85
DBM-13W3S	3	10	4.15	3.74	3.11	2.50	2.29
DBM-9W4P	4	5	2.61	2.34	1.95	1.56	1.44
DBM-9W4S	4	5	3.01	2.71	2.26	1.80	1.65
DBMF-9W4P	4	5	3.44	3.09	2.59	2.07	1.90
DBMF-9W4S	4	5	3.84	3.46	2.88	2.31	2.12
DBM-17W2P	2	15	4.10	3.69	3.07	2.45	2.25
DBM-17W2S	2	15	5.30	4.77	3.98	3.18	2.93
DBMF-17W2P	2	15	4.93	4.45	3.71	2.97	2.72
DBMF-17W2S	2	15	6.14	5.53	4.59	3.69	3.38
DBM-21W1P	1	20	4.84	4.36	3.65	2.90	2.66
DBM-21W1S	1	20	6.45	5.81	4.84	3.86	3.54
DCM-13W6P	6	7	3.14	2.83	2.36	1.88	1.74
DCM-13W6S	6	7	3.71	3.34	2.77	2.22	2.03

COAXIAL CONTACTS

Use with above coaxial shell assemblies. **Prefix: 53740**—Straight solder terminal plug; **53741**—Right-angle solder terminal plug; **53742**—Straight solder terminal receptacle; **53743**—Right-angle solder terminal receptacle; **53744**—High voltage plug; **53745**—High voltage receptacle.

Cinch Number	For Cable RG-	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
DM-53740-5000†	196/U	$1.82	$1.68	$1.51	$1.37	$1.22
DM-53740-5001	187, 188/U	1.80	1.66	1.56	1.35	1.21
DM-53740-5002	195/U	1.86	1.71	1.56	1.41	1.25
DM-53740-5008	196/U	1.82	1.68	1.51	1.37	1.22
DM-53741-5000	196/U	2.03	1.85	1.69	1.51	1.35
DM-53741-5001	187, 188/U	2.18	2.01	1.82	1.64	1.45
DM-53742-5000	196/U	1.92	1.75	1.59	1.43	1.28
DM-53742-5001	187, 188/U	1.82	1.68	1.51	1.37	1.22
DM-53742-5002	195/U	1.96	1.80	1.64	1.47	1.31
DM-53742-5004	58/U	2.69	2.42	2.21	2.01	1.81
DM-53743-5000	196/U	2.43	2.23	2.03	1.82	1.63
DM-53743-5001	187, 188/U	2.39	2.19	2.00	1.79	1.61
DM-53744-0000‡	#20 wire	1.29	1.17	1.07	.97	.87
DM-53744-5000*	#20 wire	1.61	1.46	1.34	1.20	1.07
DM-53745-0000‡	#20 wire	1.14	1.06	.96	.87	.76
DM-53745-5000*	#20 wire	1.80	1.66	1.56	1.41	1.25

*Right-angle. †Short type plug. ‡Straight.

MARK II GOLDEN "D" CONNECTORS

Snap-in, crimp type contacts eliminate soldering; cut assembly and maintenance time. Monobloc insulator is diallyl phthalate, asbestos filled, (FS-6) per MIL-M-14F, Type MDG. Keystone shaped shells provide proper polarization. Friction coupling is standard; locking accessories are available. Floating mount shells also available. Not interchangeable with other "D" series. **Temperature Range:** −65° F to +300° F. **Contacts:** Gold plate over silver-plated, leaded copper. Contacts supplied, but unassembled.

Cinch Number	Contacts		Net Each, Lots of				
	No.	Type	1-9	10-49	50-99	100-249	250-499
DESM-9P	9	Pin	$ 3.61	$ 3.39	$ 3.01	$ 2.69	$ 2.40
DESM-9S	9	Socket	4.25	3.90	3.55	3.20	2.84
DESMF-9P	9	Pin	4.34	4.06	3.57	3.14	2.81
DESMF-9S	9	Socket	4.99	4.56	4.10	3.65	3.24
DASM-15P	15	Pin	5.49	5.03	4.57	4.12	3.66
DASM-15S	15	Socket	6.66	6.11	5.56	5.00	4.45
DASMF-15P	15	Pin	6.23	5.69	5.14	4.56	4.06
DASMF-15S	15	Socket	7.40	6.78	6.11	5.45	4.84
DBSM-25P	25	Pin	8.34	7.28	6.63	5.61	5.03
DBSM-25S	25	Socket	10.06	9.22	8.39	6.83	6.06
DBSMF-25P	25	Pin	9.07	7.94	7.18	6.06	5.43
DBSMF-25S	25	Socket	10.79	9.89	8.94	7.28	6.46
DCSM-37P	37	Pin	9.69	8.88	8.12	7.28	6.46
DCSM-37S	37	Socket	13.83	12.69	11.53	9.88	9.05
DCSMF-37P	37	Pin	10.42	9.55	8.66	7.73	6.86
DCSMF-37S	37	Socket	14.56	13.36	12.09	10.32	9.46
DDSM-50P	50	Pin	14.99	13.71	12.29	9.65	8.85
DDSM-50S	50	Socket	18.65	17.10	15.55	12.88	11.70
DDSMF-50S	50	Socket	19.39	17.77	16.10	13.32	12.10

MARK II CONTACTS (D-SM)

Contact terminations in standard crimp contacts. Standard package, quantity 100.

Cinch Number	Type	Std. Pkg.	Net Each, Lots of	
			100-4999	5000-24,999
031-0932-004	Pin	100	$0.226	$0.188
031-0931-006	Socket	100	.309	.254

MARK III CONTACTS (D-MA)

Contact terminations have standard crimp contacts, commercial and military types. Standard package, quantity 100.

Cinch Number		Type	Std. Pkg.	Net Each, Lots	
Commercial	Military			100-4999	5000-24,999
330-5291-000	....	Pin	100	$0.149	$0.127
031-1007-000	....	Socket	100	.225	.19
....	M-24308/11-1	Pin	100	.16	.138
....	M-24308/10-1	Socket	100	.237	.20

"DATAPHONE" CONNECTORS AND HOODS

Insulators are diallyl phthalate (FS-4) per MIL-M-19833, Type GDI-30. Hoods gray melamine, fit plug or socket connector.

Cinch Number	Description	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
DA-19603-404	15-cont. sckt.	$ 6.54	$6.00	$5.50	$4.91	$4.37
DB-19604-433	25-cont. sckt.	10.25	9.38	8.53	7.68	6.83
DA-19603-403	15-pin plug	2.90	2.72	2.45	2.18	2.10
DB-19604-432	25-pin plug	4.01	3.74	3.36	2.96	2.83
DA-51225-1	15-size hood	1.46	1.31	1.05	.96	.88
DB-51226-1	25-size hood	1.61	1.36	1.08	.99	.90

D-SUBMINIATURE CONNECTOR ACCESSORIES
JUNCTION SHELLS

Cinch Number	Type & Size	Net Each, Lots of				
		1-9	10-49	50-99	100-249	250-499
DA-J/S 19678-1	Straight A	$1.12	$1.02	$0.84	$0.68	$0.62
DB-J/S 19678-2	Straight, B	1.33	1.19	1.01	.80	.73
DC-J/S 19678-3	Straight, C	1.58	1.43	1.19	.95	.87
DD-J/S 19678-4	Straight C	1.74	1.56	1.29	1.04	.95
DA-90°J/S 19977-1	Rt.-angle, A	1.46	1.31	1.09	.87	.80
DB-90°J/S 19977-2	Rt.-angle, B	1.60	1.45	1.21	.96	.88
DC-90°J/S 19977-3	Rt.-angle, C	1.70	1.52	1.27	1.02	.92
DD-90°J/S 19977-4	Rt.-angle, D	1.84	1.65	1.38	1.10	1.01
DE-90°J/S 19977-5	Rt.-angle, E	1.86	1.68	1.41	1.11	1.02
DE-24657	Straight, E*	2.09	1.92	1.60	1.28	1.16
DA-24658	Straight, A*	2.06	1.90	1.57	1.25	1.18
DB-24659	Straight, B*	1.65	1.50	1.25	1.02	.95
DC-24660	Straight, C*	1.73	1.57	1.30	1.05	.98
DD-24661	Straight, D*	1.94	1.82	1.52	1.22	1.11

*Deep, straight clamp junction shell.

SCREW LOCK ASSEMBLIES

D-20418-2	Female, A–E	0.44	$0.40	$0.35	$0.27	$0.25
D-20419-0	Male, A–C, E	.27	.24	.21	.17	.16
D-20420-0	Male, D	.41	.38	.30	.25	.23

CLEAR POLYPROPYLENE DUST COVERS

DA-, DB-, DC-, DD-, or DE-59-20-SKT	For sockets	$.182	$.159	$.137	$.113	$.103
DA-, DB-, DC-, DD-, or DE-60-20-PLG	For plugs	.182	.159	.137	.113	.103

SLIDING LOCK ASSEMBLIES

DE-51224-1	1.392″ long	$0.89	$0.81	$0.68	$0.54	$0.48
DA-51220-1	1.720″ long	.47	.44	.38	.30	.28
DB-51221-1	2.260″ long	.47	.43	.37	.29	.27
DC-51222-1	2.908″ long	.61	.57	.47	.39	.36
DD-51223-1	2.814″ long	.76	.69	.58	.45	.43

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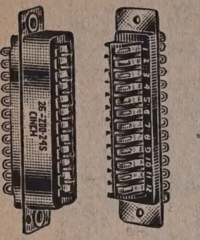
*Manufactured under license agreement with ITT Cannon.

CINCH RACK, PANEL & HINGE CONNECTORS

BLUE RIBBON* CONNECTORS



Ideal and used universally in a wide variety of applications. Proven reliability combines with smooth, easy insertion action. Self-wiping and self-cleaning contacts available in linear arrays up to 32 per unit. Barrier-type polarization and interlocking mating of dielectric bodies gives easy alignment without visual aid. Ribbon contacts can't bend. Rectangular body for easy layout. Corrosion resistant, passivated stainless steel mounting plates are molded in. **Current:** 5 amps. **Voltage:** 800 VDC at sea level; 300 VDC at 70,000 ft. **Insulator:** Diallyl phthalate per MIL-M-14F, Type MDG. **Plug Contacts:** Gold per MIL-G-14204 over silver per QQ-S-365 on copper per ASTM-B-152, Type ETP. **Receptacle Contacts:** Gold per MIL-G-14204 over silver per QQ-S-365 on phosphor bronze per ASTM-B-103-51, MIL-B-892, Grade A. **Size:** (Other than shown in table below): Body ¾″ w. x ⅜″ d. below mtg. plate, socket; 25/64″ d., plug. Mtg. plate ⅞″ wide. Plug mtg. holes .125″ dia., with ctrs. 1 1/64″ from plate ends; socket, in bushing, .116″ dia. **Code:** Suffix indicates number of contacts (**-8, -16,** etc.); **S,** socket; **P,** plug.

Cinch Number 26-	Dimensions, In.		Net Each, Lots of					
	Plate Lgth.	Body Lgth.	1-9	10-49	50-99	100-249	250-999	1000-2499
4100-8P	1 23/32	1 1/32	$1.17	$0.99	$0.80	$0.72	$0.60	$0.54
4200-8S	1 23/32	1 1/32	1.93	1.63	1.33	1.18	.97	.87
4100-16P	2 15/32	1 25/32	2.20	1.85	1.50	1.36	1.10	1.01
4200-16S	2 15/32	1 25/32	2.81	2.37	1.92	1.73	1.41	1.29
4100-24P	3 7/32	2 17/32	2.66	2.24	1.81	1.63	1.34	1.21
4200-24S	3 7/32	2 17/32	3.32	2.80	2.27	2.04	1.68	1.51
4100-32P	3 31/32	3 9/32	3.09	2.60	2.10	1.90	1.56	1.40
4200-32S	3 31/32	3 9/32	3.97	3.33	2.71	2.43	2.01	1.80

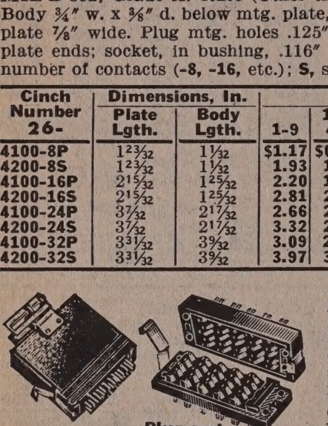
MICRO-RIBBON* CONNECTORS

Extremely small, ribbon-contact connectors suited for airborne and computer applications with high reliability. Shell type polarization; easily inserted or withdrawn without visual aid; self-wiping, self-cleaning contacts in units up to 50 per connector. Float-mounted receptacle prevents misalignment. **Current:** 5 amps. **Voltage:** 700 VDC at sea level; 200 VDC at 70,000 ft. **Insulator:** Diallyl phthalate per MIL-M-14F, Type MDG. **Contacts:** Gold plate per MIL-G-45204 over silver plate per QQ-S-365 on cadmium bronze, ASTM-B-105. **Shells:** Cadmium-plated brass (ASTM-B-36, Alloy 6) with clear chromate finish. 10500, 20500-6, -7 have additional insulator between opposite rows of contacts. Dimensions on request. Cable plugs with hoods, chassis-mounted sockets with spring latches.

Cinch No. 57-	Type	Contacts	Net Each, Lots of					
			1-9	10-49	50-99	100-249	250-999	1000-2499
10140	R & P Plug	14	$2.06	$1.73	$1.40	$1.28	$1.04	$0.94
10240	R & P Plug	24	2.75	2.32	2.00	1.69	1.39	1.27
10360	R & P Plug	36	3.15	2.66	2.15	1.93	1.58	1.43
10500	R & P Plug	50	4.16	3.51	2.83	2.53	2.09	1.87
10500-6	R & P Plug	50	4.21	3.56	2.88	2.58	2.14	1.92
10500-7	R & P Plug	50	4.74	4.01	3.24	2.85	2.37	2.13
20140	R & P Sckt.	14	2.12	1.78	1.43	1.31	1.06	.96
20240	R & P Sckt.	24	2.81	2.37	1.93	1.73	1.41	1.29
20360	R & P Sckt.	36	3.23	2.72	2.20	1.99	1.63	1.47
20500	R & P Sckt.	50	4.20	3.55	2.87	2.58	2.12	1.91
20500-6	R & P Sckt.	50	4.39	3.72	3.00	2.71	2.21	2.00
20500-7	R & P Sckt.	50	4.97	4.22	3.41	3.03	2.49	2.26
30140	Cable Plug	14	3.96	3.32	2.70	2.42	2.00	1.79
30240	Cable Plug	24	4.35	3.65	2.95	2.66	2.17	1.98
30360	Cable Plug	36	5.31	4.48	3.62	3.24	2.68	2.41
30500	Cable Plug	50	5.82	4.90	3.99	3.57	2.93	2.64
40140	Chassis Skt.	14	2.60	2.19	1.78	1.60	1.32	1.18
40240	Chassis Skt.	24	3.10	2.60	2.12	1.90	1.56	1.40
40360	Chassis Skt.	36	3.34	2.81	2.27	2.04	1.68	1.51
40500	Chassis Skt.	50	4.37	3.68	2.97	2.67	2.19	1.99

*Registered Bunker-Ramo trademark.

HINGE CONNECTORS



Plug and socket bodies showing contact arrangement.

No contact damage due to insertion and extraction. Maximum contact in minimum space; engaged with normal pressure. Simple locking device insures positive contact. Spring action contacts separate units after releasing the lock. Wiping contact action for clean contacts at all times. Castings are of black phenolic, type CFG. Contacts are of phosphor bronze, cadmium plated (.0001). Current rating is 4.5 amps. **Alternate Lock:** For more secure locking, order Alternate Lock No. 37AL separately. It has a special device to prevent accidental unlocking. **Caps:** Formed fiber liners, nickel-plated cable clamps. Designed to take the alternate lock when required. Black wrinkle finish.

PLUG WITH LOCK*

Cinch No.	Contacts	Mtg. Ctrs., In.	Over-all Size, In.	Net Each, Lots of				
				1-24	25-49	50-99	100-249	250-499*
37-M20L	20	1.375	1.750	$3.35	$2.67	$2.23	$1.79	$1.69
37-M30L	30	1.812	2.187	3.96	3.14	2.64	2.11	2.02
37-M40L	40	2.250	2.625	4.56	3.64	3.02	2.43	2.32
37-M50L	50	2.687	3.062	5.16	4.12	3.43	2.76	2.61
37-M60L	60	3.125	3.500	5.74	4.59	3.83	3.07	2.91
37-M70L	70	3.562	3.937	6.35	5.07	4.23	3.39	3.22
37-M80L	80	4.000	4.375	6.95	5.54	4.62	3.72	3.53
37-M90L	90	4.438	4.812	7.55	6.04	5.04	4.02	3.83
37-M100L	100	4.875	5.250	8.15	6.52	5.44	4.35	4.13

*To order **Socket With Lock,** change letter **M** in Cinch No. to **F** (e.g., 37-**F**20L). Dimensions and prices are the same.

***LARGER QUANTITY PRICING AVAILABLE ON REQUEST**

PLUG WITHOUT LOCK*

Cinch No.	Contacts	Mtg. Ctrs., In.	Over-all Size, In.	Net Each, Lots of				
				1-24	25-49	50-99	100-249	250-499*
37-M20	20	1.375	1.750	$3.01	$2.40	$2.02	$1.60	$1.52
37-M30	30	1.812	2.187	3.60	2.88	2.40	1.92	1.82
37-M40	40	2.250	2.625	4.21	3.37	2.80	2.25	2.14
37-M50	50	2.687	3.062	4.81	3.84	3.20	2.56	2.43
37-M60	60	3.125	3.500	5.42	4.33	3.60	2.88	2.73
37-M70	70	3.562	3.937	6.01	4.81	4.00	3.20	3.03
37-M80	80	4.000	4.375	6.62	5.29	4.40	3.53	3.36
37-M90	90	4.438	4.812	7.20	5.76	4.81	3.84	3.66
37-M100	100	4.875	5.250	7.80	6.25	5.21	4.16	3.96

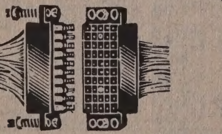
*To order **Socket Without Lock** change letter **M** in Cinch No. to **F** (e.g., 37-**F**20). Dimensions and prices are the same.

Cinch No. 37AL Alternate Lock—For above series.
Net Each, Lots of: 1–24 . . . . **$0.74**; 25–49 . . . . **$0.60**
Lots: 50–99 . . . **$0.49**; 100–249 . . . **$0.40**; 250–599* . . **.39**

CAPS FOR PLUGS OR SOCKETS

Cinch No.	For Casting with No. of Contacts	Hole Size, Inches	Net Each, Lots of				
			1-24	25-49	50-99	100-249	250-499*
37-C20	20	¾	$4.65	$3.73	$3.11	$2.49	$2.37
37-C30	30	13/16 x 1	4.70	3.76	3.13	2.51	2.39
37-C40	40	13/16 x 1	4.76	3.80	3.16	2.54	2.42
37-C50	50	13/16 x 1	4.81	3.84	3.20	2.56	2.43
37-C60	60	13/16 x 1½	4.85	3.89	3.24	2.58	2.46
37-C70	70	13/16 x 1½	4.91	3.92	3.27	2.63	2.49
37-C80	80	13/16 x 1½	4.95	3.97	3.29	2.65	2.51
37-C90	90	13/16 x 1½	5.01	4.00	3.35	2.67	2.54
37-C100	100	13/16 x 1½	5.06	4.03	3.38	2.69	2.56

"MINI-JONES" CRIMP-ON, SNAP-IN CONNECTORS



Space saving connector provides contact density of 25 contacts per sq. inch. No tools required for inserting contacts. Pin and contact terminations accommodate either one AWG 18, 20, 22, or 24; or two AWG 22 or 24. Supplied unassembled. Tinned phosphor bronze contacts. Black phenolic insulators. Polarizing pins and lock nuts of cadmium plated brass. **Voltage:** 830 V rms, 1230 VDC. **Current:** 4.0 amperes. **Contact Resistance:** .0065 ohms, max. **Low Level Resistance:** Current flow at 0.1 μvolts; no variation at 6.5 mA and 16.25 mA. **Insulation Resistance:** 1000 megs. Standard or lock type.

STANDARD PLUG

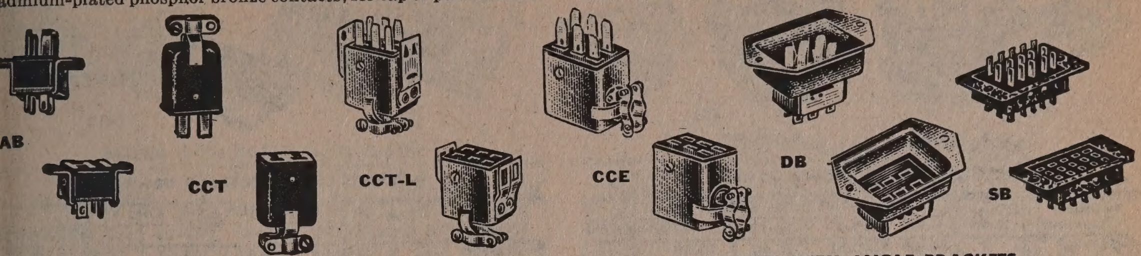
Cinch No.	Contacts	Mtg. Ctrs., In.	Over-all Size, In.	Net Each, Lots of				
				1-24	25-49	50-99	100-249	250-499
MJP-19	19	1.288	1.600	$2.68	$2.14	$1.79	$1.42	$1.35
MJP-29	29	1.688	2.000	3.16	2.52	2.11	1.68	1.60
MJP-39	39	2.088	2.400	3.64	2.91	2.42	1.93	1.83
MJP-48	49	2.488	2.800	4.01	3.29	2.68	2.14	2.04
MJP-58	58	2.888	3.200	4.48	3.59	3.00	2.39	2.28
MJP-68	68	3.288	3.600	4.97	3.97	3.31	2.65	2.52

STANDARD SOCKET

Cinch No.	Contacts	Mtg. Ctrs., In.	Over-all Size, In.	Net Each, Lots of				
				1-24	25-49	50-99	100-249	250-499
MJS-19	19	1.288	1.600	$2.39	$1.91	$1.60	$1.28	$1.22
MJS-29	29	1.688	2.000	2.72	2.17	1.82	1.45	1.38
MJS-39	39	2.088	2.400	3.06	2.45	2.04	1.63	1.55
MJS-48	48	2.488	2.800	3.30	2.64	2.21	1.76	1.67
MJS-58	58	2.888	3.200	3.64	2.91	2.42	1.93	1.83
MJS-68	68	3.288	3.600	3.96	3.17	2.65	2.12	2.02
PLUG CONNECTOR WITH PROVISION FOR LOCK								
MJP-2-19	19	1.288	1.600	$3.82	$3.06	$2.55	$2.04	$1.93
MJP-2-29	29	1.688	2.000	4.32	3.44	2.87	2.29	2.17
MJP-2-39	39	2.088	2.400	4.79	3.82	3.18	2.55	2.42
MJP-2-48	48	2.488	2.800	5.16	4.13	3.44	2.76	2.61
MJP-2-58	58	2.888	3.200	5.64	4.49	3.76	3.01	2.85
MJP-2-68	68	3.288	3.600	6.11	4.88	4.08	3.27	3.09
SOCKET CONNECTOR WITH PROVISION FOR LOCK								
MJS-2-19	19	1.288	1.600	$3.54	$2.82	$2.36	$1.89	$1.80
MJS-2-29	29	1.688	2.000	3.87	3.09	2.58	2.06	1.95
MJS-2-39	39	2.088	2.400	4.20	3.36	2.80	2.25	2.13
MJS-2-48	48	2.488	2.800	4.44	3.55	2.96	2.37	2.26
MJS-2-58	58	2.888	3.200	4.79	3.82	3.18	2.55	2.42
MJS-2-68	68	3.288	3.600	5.10	4.10	3.42	2.72	2.58

CINCH Plugs and Sockets

00 SERIES PLUGS AND SOCKETS from famous "Jones" line, he standard for the electrical and electronic industry for many ears. Small size, with good separation between contacts, for nedium-duty applications. Molded phenolic insulator; 2 to 33 admium-plated phosphor bronze contacts; for cap or panel mounting. Polarized so only common sizes will mate. "Knife-switch" type socket contacts engage both sides of flat plug contacts. Rated 730 V rms, 10 A max. Contact resistance, .016 ohms max. UL Standard #498 rated (all contacts simultaneously) 7.5 amps, 1875 watts for 2–12 contacts; 4.5 amps, 1125 watts, 15–33 contacts.



PLUGS WITH ANGLE BRACKETS

Cinch Number	Contacts	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
-302-AB	2	$0.35	$0.27	$0.24	$0.20	$0.19
-303-AB	3	.39	.30	.26	.22	.21
-304-AB	4	.43	.35	.29	.24	.23
-306-AB	6	.53	.43	.37	.28	.27
-308-AB	8	.62	.48	.41	.34	.32
-310-AB	10	.69	.54	.46	.38	.36
-312-AB	12	.78	.63	.50	.41	.39
-315-AB	15	1.05	.83	.69	.54	.51
-318-AB	18	1.25	1.01	.83	.67	.64
-321-AB	21	1.56	1.25	1.05	.83	.80
-324-AB	24	1.90	1.52	1.26	1.02	.97
-327-AB	27	2.23	1.79	1.49	1.18	1.12
-330-AB	30	2.56	2.03	1.69	1.37	1.28
-333-AB	33	2.87	2.29	1.91	1.52	1.46
PLUGS WITH CABLE CLAMPS/TOP						
-302-CCT	2	$0.70	$0.56	$0.46	$0.38	$0.36
-303-CCT	3	.78	.63	.50	.41	.39
-304-CCT	4	.82	.66	.54	.43	.41
-306-CCT	6	.92	.75	.63	.48	.46
-308-CCT	8	1.02	.81	.68	.53	.50
-310-CCT	10	1.11	.88	.75	.61	.56
-312-CCT	12	1.20	.97	.81	.65	.61
-315-CCT	15	1.60	1.28	1.08	.85	.82
-318-CCT	18	1.88	1.50	1.25	1.01	.93
-321-CCT	21	2.24	1.80	1.50	1.19	1.13
-324-CCT	24	2.63	2.10	1.76	1.41	1.33
-327-CCT	27	3.01	2.39	2.00	1.60	1.52
-330-CCT	30	3.38	2.70	2.26	1.81	1.71
P-333-CCT	33	3.75	3.00	2.50	2.00	1.90
PLUGS WITH CABLE CLAMPS/TOP & LOCKS						
P-302-CCT-L	2	$0.87	$0.70	$0.60	$0.46	$0.44
P-303-CCT-L	3	.93	.76	.64	.49	.47
P-304-CCT-L	4	1.01	.80	.67	.51	.49
P-306-CCT-L	6	1.11	.88	.74	.60	.56
P-308-CCT-L	8	1.18	.93	.80	.64	.61
P-310-CCT-L	10	1.28	1.04	.86	.69	.66
P-312-CCT-L	12	1.37	1.10	.91	.74	.70
P-315-CCT-L	15	1.79	1.44	1.19	.93	.90
P-318-CCT-L	18	2.04	1.63	1.38	1.09	1.05
P-321-CCT-L	21	2.40	1.93	1.61	1.28	1.23
P-324-CCT-L	24	2.79	2.24	1.88	1.50	1.42
P-327-CCT-L	27	3.17	2.55	2.12	1.69	1.61
P-330-CCT-L	30	3.55	2.85	2.37	1.90	1.81
P-333-CCT-L	33	3.92	3.13	2.63	2.10	1.98
PLUGS WITH CABLE CLAMPS/END						
P-306-CCE	6	$0.98	$0.79	$0.66	$0.50	$0.48
P-308-CCE	8	1.06	.84	.70	.56	.53
P-310-CCE	10	1.16	.91	.78	.63	.60
P-312-CCE	12	1.25	1.01	.83	.67	.64
P-315-CCE	15	1.64	1.31	1.10	.87	.83
P-318-CCE	18	1.92	1.53	1.27	1.03	.98
P-321-CCE	21	2.56	2.04	1.71	1.35	1.29
P-324-CCE	24	2.67	2.14	1.79	1.44	1.39
P-327-CCE	27	3.05	2.43	2.03	1.62	1.54
P-330-CCE	30	3.43	2.73	2.28	1.83	1.73
P-333-CCE	33	3.79	3.03	2.54	2.02	1.92
PLUGS WITH DEEP BRACKETS						
P-302-DB	2	$0.84	$0.68	$0.56	$0.44	$0.43
P-303-DB	3	.85	.68	.59	.45	.43
P-304-DB	4	.90	.72	.61	.47	.45
P-306-DB	6	1.02	.80	.67	.53	.49
P-308-DB	8	1.08	.87	.72	.59	.54
P-312-DB	12	1.24	1.01	.83	.66	.64
P-315-DB	15	1.52	1.22	1.03	.81	.78
P-318-DB	18	1.82	1.46	1.22	.99	.91
P-321-DB	21	2.18	1.75	1.46	1.16	1.10
P-324-DB	24	2.56	2.04	1.71	1.37	1.29
P-327-DB	27	2.93	2.34	1.95	1.55	1.49
P-330-DB	30	3.29	2.64	2.21	1.76	1.67
P-333-DB	33	3.64	2.93	2.44	1.94	1.88
PLUGS WITH SHALLOW BRACKETS						
P-315-SB	15	$1.52	$1.22	$1.03	$0.81	$0.78
P-318-SB	18	1.82	1.46	1.22	.99	.91
P-321-SB	21	2.18	1.75	1.46	1.16	1.10
P-324-SB	24	2.56	2.04	1.71	1.37	1.29
P-327-SB	27	2.93	2.34	1.95	1.55	1.49
P-330-SB	30	3.29	2.64	2.21	1.76	1.67
P-333-SB	33	3.64	2.93	2.44	1.94	1.88

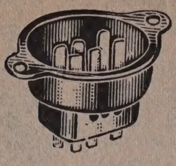
SOCKETS WITH ANGLE BRACKETS

Cinch Number	Contacts	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
S-302-AB	2	$0.37	$0.29	$0.25	$0.21	$0.20
S-303-AB	3	.41	.34	.27	.23	.22
S-304-AB	4	.45	.37	.30	.25	.24
S-306-AB	6	.59	.45	.39	.30	.29
S-308-AB	8	.69	.55	.46	.38	.36
S-310-AB	10	.81	.65	.54	.43	.40
S-312-AB	12	.97	.76	.65	.50	.47
S-315-AB	15	1.22	.98	.81	.65	.62
S-318-AB	18	1.40	1.11	.92	.75	.70
S-321-AB	21	1.72	1.39	1.14	.90	.87
S-324-AB	24	2.04	1.63	1.38	1.08	1.05
S-327-AB	27	2.37	1.90	1.58	1.26	1.20
S-330-AB	30	2.72	2.18	1.82	1.46	1.39
S-333-AB	33	3.05	2.43	2.02	1.61	1.54
SOCKETS WITH CABLE CLAMPS/TOP						
S-302-CCT	2	$0.72	$0.60	$0.48	$0.39	$0.38
S-303-CCT	3	.80	.64	.51	.42	.40
S-304-CCT	4	.84	.68	.56	.44	.43
S-306-CCT	6	.98	.78	.65	.50	.48
S-308-CCT	8	1.09	.86	.72	.60	.54
S-310-CCT	10	1.23	1.00	.82	.66	.63
S-312-CCT	12	1.40	1.11	.91	.74	.70
S-315-CCT	15	1.79	1.44	1.19	.93	.90
S-318-CCT	18	2.02	1.61	1.35	1.08	1.03
S-321-CCT	21	2.39	1.92	1.60	1.27	1.22
S-324-CCT	24	2.77	2.23	1.85	1.48	1.41
S-327-CCT	27	3.14	2.52	2.11	1.68	1.59
S-330-CCT	30	3.55	2.85	2.37	1.90	1.81
S-333-CCT	33	3.92	3.13	2.63	2.10	1.98
SOCKETS WITH CABLE CLAMPS/TOP & KEEPERS						
S-302-CCT-K	2	$0.89	$0.72	$0.62	$0.47	$0.45
S-303-CCT-K	3	.98	.78	.65	.50	.48
S-304-CCT-K	4	1.03	.82	.68	.53	.50
S-306-CCT-K	6	1.14	.90	.76	.62	.59
S-308-CCT-K	8	1.26	1.02	.84	.68	.65
S-310-CCT-K	10	1.41	1.12	.92	.75	.71
S-312-CCT-K	12	1.56	1.25	1.05	.83	.80
S-315-CCT-K	15	1.95	1.56	1.30	1.05	1.00
S-318-CCT-K	18	2.21	1.76	1.47	1.17	1.11
S-321-CCT-K	21	2.58	2.05	1.72	1.38	1.29
S-324-CCT-K	24	2.95	2.36	1.96	1.56	1.50
S-327-CCT-K	27	3.33	2.66	2.23	1.79	1.68
S-330-CCT-K	30	3.74	3.00	2.49	1.98	1.90
S-333-CCT-K	33	4.10	3.28	2.73	2.19	2.07
SOCKETS WITH CABLE CLAMPS/END						
S-306-CCE	6	$1.02	$0.81	$0.69	$0.53	$0.50
S-308-CCE	8	1.13	.89	.76	.62	.59
S-310-CCE	10	1.27	1.03	.86	.68	.65
S-312-CCE	12	1.44	1.14	.97	.76	.72
S-315-CCE	15	1.83	1.47	1.22	.98	.91
S-318-CCE	18	2.05	1.64	1.39	1.10	1.05
S-321-CCE	21	2.44	1.95	1.62	1.29	1.24
S-324-CCE	24	2.81	2.26	1.89	1.50	1.44
S-327-CCE	27	3.18	2.56	2.14	1.71	1.61
S-330-CCE	30	3.58	2.87	2.39	1.92	1.82
S-333-CCE	33	3.96	3.16	2.65	2.12	2.01
SOCKETS WITH DEEP BRACKETS						
S-302-DB	2	$0.86	$0.70	$0.60	$0.46	$0.44
S-303-DB	3	.86	.69	.60	.46	.44
S-304-DB	4	.91	.74	.63	.48	.46
S-306-DB	6	1.05	.83	.70	.54	.51
S-308-DB	8	1.16	.91	.78	.63	.59
S-312-DB	12	1.44	1.13	.97	.76	.72
S-315-DB	15	1.69	1.37	1.13	.89	.85
S-318-DB	18	1.96	1.56	1.30	1.06	1.01
S-321-DB	21	2.34	1.88	1.55	1.24	1.18
S-324-DB	24	2.71	2.17	1.82	1.46	1.38
S-327-DB	27	3.08	2.45	2.04	1.63	1.55
S-330-DB	30	3.47	2.77	2.32	1.85	1.76
S-333-DB	33	3.82	3.07	2.56	2.03	1.94
SOCKETS WITH SHALLOW-BRACKETS						
S-315-SB	15	$1.69	$1.37	$1.13	$0.89	$0.85
S-318-SB	18	1.96	1.56	1.30	1.06	1.01
S-321-SB	21	2.34	1.88	1.55	1.24	1.18
S-324-SB	24	2.71	2.17	1.82	1.46	1.38
S-327-SB	27	3.08	2.45	2.04	1.63	1.55
S-330-SB	30	3.47	2.77	2.32	1.85	1.76
S-333-SB	33	3.82	3.07	2.56	2.03	1.94

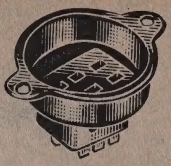
LARGER QUANTITY PRICING AVAILABLE ON REQUEST

CINCH Plugs and Sockets

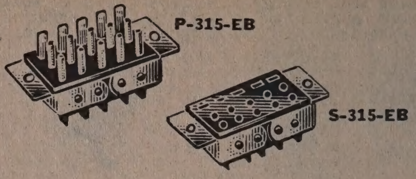
300 SERIES "JONES" PLUGS AND SOCKETS (CONTINUED)



P-306-RP



S-306-RP



PLUGS WITH RECESSED PLATES

Cinch Number	Con-tacts	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
P-302-RP	2	$0.66	$0.51	$0.44	$0.36	$0.35
P-303-RP	2	.69	.54	.46	.38	.36
P-304-RP	4	.74	.60	.48	.40	.38
P-306-RP	6	.85	.68	.53	.44	.43
P-308-RP	8	.98	.78	.65	.50	.48
P-310-RP	10	1.12	.86	.72	.60	.54
P-312-RP	12	1.22	.98	.81	.65	.62

PLUGS WITH END BRACKETS

P-315-EB	15	$1.08	$0.85	$0.71	$0.59	$0.53
P-318-EB	18	1.28	1.04	.85	.68	.66
P-321-EB	21	1.60	1.27	1.07	.85	.81
P-324-EB	24	1.93	1.54	1.28	1.04	1.00
P-327-EB	27	2.26	1.81	1.51	1.20	1.14
P-330-EB	30	2.59	2.05	1.72	1.39	1.30
P-333-EB	33	2.90	2.32	1.93	1.54	1.47

SOCKETS WITH RECESSED PLATES

Cinch Number	Con-tacts	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
S-302-RP	2	$0.69	$0.54	$0.45	$0.37	$0.36
S-303-RP	2	.71	.59	.47	.38	.37
S-304-RP	4	.76	.62	.50	.41	.39
S-306-RP	6	.87	.70	.60	.46	.44
S-308-RP	8	1.05	.83	.70	.56	.51
S-310-RP	10	1.22	.98	.81	.65	.62
S-312-RP	12	1.40	1.11	.92	.75	.70

SOCKETS WITH END BRACKETS

S-315-EB	15	$1.24	$1.01	$0.82	$0.66	$0.64
S-318-EB	18	2.00	1.14	.97	.76	.72
S-321-EB	21	1.76	1.41	1.17	.92	.88
S-324-EB	24	2.07	1.66	1.40	1.11	1.06
S-327-EB	27	2.40	1.93	1.60	1.28	1.22
S-330-EB	30	2.76	2.21	1.84	1.48	1.40
S-333-EB	33	3.08	2.45	2.04	1.63	1.55

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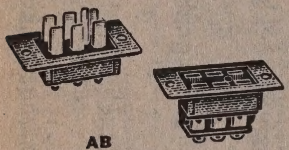
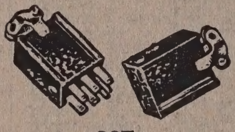
400 SERIES PLUGS AND SOCKETS are rated for duty beyond the range of 300 Series: 1200 V rms at 15 amps. Contact resistance, .001 ohm avg. Polarized and suitable for either cap or panel mounting in 2, 4, 6, 8, 10 and 12 contact sizes. "Knife-switch" type socket contacts of cadmium-plated phosphor bronze engage both sides of flat plug contacts. Plug prongs are cadmium-plated brass ¼" wide, 1/16" thick. Caps finished in black wrinkle and fiber lined.



AB



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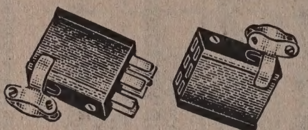
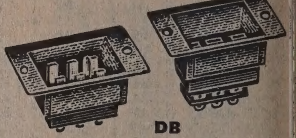


CCE



DB

PLUGS WITH ANGLE BRACKETS

Cinch Number	Con-tacts	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
P-402-AB	2	$0.85	$0.68	$0.57	$0.45	$0.43
P-404-AB	4	1.05	.84	.69	.54	.51
P-406-AB	6	1.23	.98	.83	.66	.63
P-408-AB	8	1.42	1.13	.93	.75	.71
P-410-AB	10	1.60	1.28	1.08	.86	.82
P-412-AB	12	1.80	1.44	1.19	.95	.90

PLUGS WITH CABLE CLAMPS/TOP

P-402-CCT	2	$1.41	$1.13	$0.93	$0.75	$0.71
P-404-CCT	4	1.61	1.29	1.08	.86	.82
P-406-CCT	6	1.85	1.48	1.24	1.00	.93
P-408-CCT	8	2.05	1.63	1.37	1.10	1.05
P-410-CCT	10	2.36	1.89	1.58	1.26	1.19
P-412-CCT	12	2.58	2.06	1.71	1.38	1.30

PLUGS WITH CABLE CLAMPS/END

P-402-CCE	2	$1.46	$1.17	$0.98	$0.78	$0.74
P-404-CCE	4	1.66	1.32	1.11	.88	.84
P-406-CCE	6	1.90	1.52	1.26	1.02	.96
P-408-CCE	8	2.11	1.68	1.40	1.12	1.07
P-410-CCE	10	2.40	1.92	1.61	1.29	1.22
P-412-CCE	12	2.63	2.10	1.75	1.40	1.32

PLUGS WITH DEEP BRACKETS

P-402-DB	2	$1.13	$0.90	$0.75	$0.61	$0.57
P-404-DB	4	1.38	1.10	.91	.72	.70
P-406-DB	6	1.61	1.29	1.08	.86	.82
P-408-DB	8	1.85	1.48	1.24	1.00	.93
P-410-DB	10	2.10	1.67	1.40	1.12	1.07
P-412-DB	12	2.34	1.88	1.56	1.24	1.18

PLUGS WITH SHALLOW BRACKETS

P-402-SB	2	$1.09	$0.87	$0.72	$0.57	$0.54
P-404-SB	4	1.32	1.07	.88	.70	.67
P-406-SB	6	1.56	1.25	1.06	.84	.80
P-408-SB	8	1.82	1.45	1.20	.96	.91
P-410-SB	10	2.05	1.63	1.38	1.10	1.05
P-412-SB	12	2.29	1.82	1.53	1.22	1.16

PLUGS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

P-402-LAB	2	$0.47	$0.39	$0.32	$0.25	$0.24
P-404-LAB	4	.67	.51	.44	.37	.34
P-406-LAB	6	.89	.71	.61	.47	.45
P-408-LAB	8	1.09	.87	.72	.57	.51
P-410-LAB	10	1.38	1.11	.92	.74	.70
P-412-LAB	12	1.60	1.28	1.07	.85	.82

*Except in 2-contact size.

SOCKETS WITH ANGLE BRACKETS

Cinch Number	Con-tacts	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
S-402-AB	2	$1.00	$0.79	$0.66	$0.51	$0.49
S-404-AB	4	1.28	1.02	.85	.68	.65
S-406-AB	6	1.56	1.25	1.06	.84	.80
S-408-AB	8	1.85	1.48	1.23	.99	.92
S-410-AB	10	2.13	1.70	1.42	1.13	1.08
S-412-AB	12	2.42	1.93	1.61	1.29	1.23

SOCKETS WITH CABLE CLAMPS/TOP

S-402-CCT	2	$1.60	$1.28	$1.07	$0.85	$0.82
S-404-CCT	4	1.91	1.53	1.28	1.02	.96
S-406-CCT	6	2.23	1.79	1.48	1.18	1.12
S-408-CCT	8	2.52	2.03	1.69	1.34	1.29
S-410-CCT	10	2.85	2.28	1.91	1.55	1.46
S-412-CCT	12	3.17	2.52	2.11	1.69	1.61

SOCKETS WITH CABLE CLAMPS/END

S-402-CCE	2	$1.64	$1.31	$1.10	$0.88	$0.84
S-404-CCE	4	1.95	1.56	1.31	1.05	1.00
S-406-CCE	6	2.28	1.82	1.52	1.22	1.16
S-408-CCE	8	2.59	2.06	1.72	1.38	1.31
S-410-CCE	10	2.90	2.32	1.93	1.55	1.47
S-412-CCE	12	3.21	2.56	2.14	1.71	1.62

SOCKETS WITH DEEP BRACKETS

S-402-DB	2	$1.28	$1.02	$0.85	$0.68	$0.65
S-404-DB	4	1.61	1.29	1.08	.86	.82
S-406-DB	6	1.95	1.56	1.31	1.06	1.00
S-408-DB	8	2.29	1.84	1.53	1.22	1.16
S-410-DB	10	2.64	2.10	1.75	1.41	1.33
S-412-DB	12	2.98	2.37	1.98	1.59	1.51

SOCKETS WITH SHALLOW BRACKETS

S-402-SB	2	$1.23	$0.98	$0.83	$0.66	$0.63
S-404-SB	4	1.56	1.25	1.06	.84	.80
S-406-SB	6	1.91	1.54	1.28	1.02	.96
S-408-SB	8	2.25	1.81	1.51	1.19	1.13
S-410-SB	10	2.59	2.05	1.72	1.39	1.31
S-412-SB	12	2.92	2.34	1.95	1.56	1.48

SOCKETS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

S-402-LAB	2	$0.62	$0.48	$0.41	$0.32	$0.30
S-404-LAB	4	.90	.71	.61	.48	.46
S-406-LAB	6	1.18	.93	.79	.64	.61
S-408-LAB	8	1.47	1.17	.99	.79	.74
S-410-LAB	10	1.75	1.41	1.17	.92	.89
S-412-LAB	12	2.04	1.63	1.35	1.09	1.04

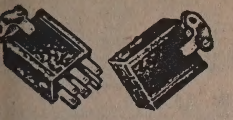
*Except in 2-contact size.

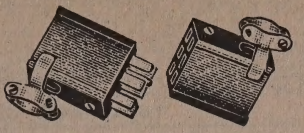
LARGER QUANTITY PRICING AVAILABLE ON REQUEST

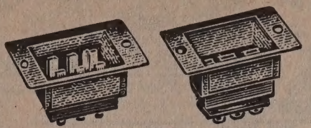
CINCH Plugs and Sockets

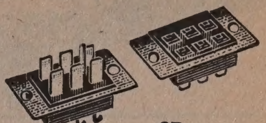
"JONES" PLUGS AND SOCKETS 2400 SERIES

400 SERIES PLUGS AND SOCKETS are designed for excellent ectrical and mechanical performance. Ratings are the same as 400 Series, except for higher (1700 volts) voltage rating. Fully interchangeable with corresponding units of the 400 Series.


CCT


CCE


DB


SB

PLUGS WITH CABLE CLAMPS/TOP

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
-2402-CCT	2	$1.49	$1.19	$1.00	$0.79	$0.75
-2404-CCT	4	1.69	1.34	1.13	.90	.86
-2406-CCT	6	1.90	1.52	1.26	1.02	.96
-2408-CCT	8	2.10	1.68	1.41	1.12	1.07
-2410-CCT	10	2.32	1.85	1.54	1.23	1.17
-2412-CCT	12	2.42	1.94	1.62	1.29	1.22

PLUGS WITH CABLE CLAMPS/END

-2402-CCE	2	$1.53	$1.23	$1.03	$0.82	$0.78
-2404-CCE	4	1.74	1.39	1.16	.92	.88
-2406-CCE	6	1.94	1.55	1.30	1.05	1.00
-2408-CCE	8	2.14	1.71	1.44	1.14	1.09
-2410-CCE	10	2.35	1.90	1.58	1.25	1.19
-2412-CCE	12	2.57	2.05	1.70	1.35	1.30

PLUGS WITH DEEP BRACKETS

-2402-DB	2	$1.17	$0.92	$0.78	$0.63	$0.60
-2404-DB	4	1.35	1.05	.90	.72	.69
-2406-DB	6	1.56	1.24	1.05	.84	.79
-2408-DB	8	1.75	1.41	1.17	.92	.89
-2410-DB	10	1.95	1.56	1.30	1.05	1.00
-2412-DB	12	2.14	1.71	1.44	1.14	1.09

PLUGS WITH SHALLOW BRACKETS

P-2402-SB	2	$1.08	$0.86	$0.71	$0.57	$0.54
P-2404-SB	4	1.28	1.02	.85	.68	.65
P-2406-SB	6	1.47	1.17	.98	.79	.74
P-2408-SB	8	1.67	1.34	1.11	.88	.85
P-2410-SB	10	1.86	1.49	1.24	1.00	.93
P-2412-SB	12	2.08	1.64	1.38	1.10	1.05

PLUGS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

P-2402-LAB	2	$0.61	$0.47	$0.40	$0.30	$0.29
P-2404-LAB	4	.79	.64	.51	.42	.40
P-2406-LAB	6	1.00	.79	.66	.51	.49
P-2408-LAB	8	1.18	.93	.79	.64	.61
P-2410-LAB	10	1.39	1.10	.91	.74	.70
P-2412-LAB	12	1.58	1.26	1.06	.84	.80

*Except in 2 contact size.

SOCKETS WITH CABLE CLAMPS/TOP

Cinch Number	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
S-2402-CCT	2	$1.62	$1.30	$1.09	$0.86	$0.83
S-2404-CCT	4	1.80	1.44	1.19	.95	.90
S-2406-CCT	6	2.01	1.60	1.33	1.08	1.02
S-2408-CCT	8	2.23	1.79	1.48	1.18	1.12
S-2410-CCT	10	2.44	1.94	1.62	1.30	1.23
S-2412-CCT	12	2.65	2.12	1.76	1.41	1.34

SOCKETS WITH CABLE CLAMPS/END

S-2402-CCE	2	$1.67	$1.33	$1.11	$0.88	$0.85
S-2404-CCE	4	1.84	1.47	1.23	.98	.92
S-2406-CCE	6	2.05	1.63	1.38	1.10	1.05
S-2408-CCE	8	2.27	1.82	1.52	1.20	1.14
S-2410-CCE	10	2.48	1.98	1.66	1.32	1.25
S-2412-CCE	12	2.70	2.15	1.81	1.44	1.35

SOCKETS WITH DEEP BRACKETS

S-2402-DB	2	$1.25	$1.01	$0.84	$0.67	$0.64
S-2404-DB	4	1.46	1.17	.98	.78	.74
S-2406-DB	6	1.67	1.33	1.11	.88	.85
S-2408-DB	8	1.88	1.49	1.25	1.01	.93
S-2410-DB	10	2.07	1.66	1.38	1.11	1.06
S-2412-DB	12	2.28	1.83	1.53	1.22	1.16

SOCKETS WITH SHALLOW BRACKETS

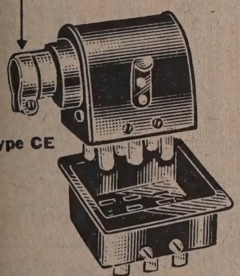
S-2402-SB	2	$1.17	$0.92	$0.78	$0.63	$0.60
S-2404-SB	4	1.37	1.10	.91	.72	.69
S-2406-SB	6	1.58	1.26	1.06	.84	.80
S-2408-SB	8	1.79	1.42	1.19	.95	.90
S-2410-SB	10	2.00	1.59	1.32	1.07	1.01
S-2412-SB	12	2.21	1.75	1.47	1.17	1.11

SOCKETS LESS ANGLE BRACKETS, DRILLED AND TAPPED*

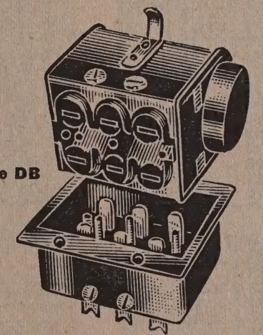
S-2402-LAB	2	$0.68	$0.54	$0.45	$0.37	$0.36
S-2404-LAB	4	.88	.70	.61	.47	.45
S-2406-LAB	6	1.10	.87	.72	.60	.54
S-2408-LAB	8	1.30	1.05	.87	.69	.66
S-2410-LAB	10	1.51	1.20	1.01	.80	.76
S-2412-LAB	12	1.70	1.38	1.14	.90	.86

*Except in 2 contact size.

"JONES" PLUGS AND SOCKETS 500 SERIES



Type CE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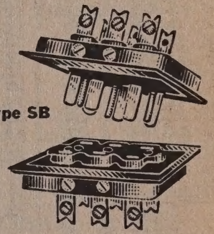

Type SB

500 SERIES PLUGS AND SOCKETS feature three types—**Type DB** with deep bracket for recessed mounting; **Type CE** for cable clamp in end; **Type SB** with shallow bracket for flush mounting. **Rated Voltage:** 3 kV, max. **Rated Current:** 25 amperes per contact. **Power Capacity:** 5 kW, max. **Contacts:** Male, cadmium plated brass; Female, cadmium plated phosphor. **Caps and Brackets:** Parkerized steel.

DEEP BRACKET FOR RECESSED MOUNTING

Cinch Number Plug	Cinch Number Socket	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249
P-502-DB	S-502-DB	2	$10.58	$ 8.49	$ 6.63	$ 5.71
P-504-DB	S-504-DB	4	12.14	9.70	7.86	6.95
P-506-DB	S-506-DB	6	13.59	10.87	9.02	8.11
P-508-DB	S-508-DB	8	14.82	11.87	10.02	9.07
P-510-DB	S-510-DB	10	16.08	12.87	11.04	10.10
P-512-DB	S-512-DB	12	16.97	13.64	11.80	10.87

CABLE CLAMP IN END

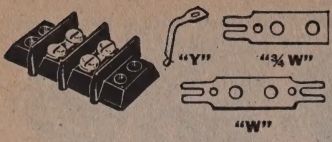
Cinch Number Plug	Cinch Number Socket	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249
P-502-CE	S-502-CE	2	$12.51	$10.01	$ 8.16	$ 7.25
P-504-CE	S-504-CE	4	14.46	11.55	9.70	8.78
P-506-CE	S-506-CE	6	15.80	12.63	10.79	9.86
P-508-CE	S-508-CE	8	16.57	13.24	11.40	10.46
P-510-CE	S-510-CE	10	18.10	14.49	12.63	11.71
P-512-CE	S-512-CE	12	19.26	15.41	13.58	12.63

SHALLOW BRACKET FOR FLUSH MOUNTING

P-502-SB	S-502-SB	2	$10.58	$ 8.49	$ 6.63	$ 5.71
P-504-SB	S-504-SB	4	12.14	9.70	7.86	6.95
P-506-SB	S-506-SB	6	13.59	10.87	9.02	8.11
P-508-SB	S-508-SB	8	14.82	11.87	10.02	9.07
P-510-SB	S-510-SB	10	16.08	12.87	11.04	10.10
P-512-SB	S-512-SB	12	16.97	13.64	11.80	10.87

LARGER QUANTITY PRICING AVAILABLE ON REQUEST

CINCH Barrier Terminal Blocks



Barrier design for high voltage rating and protection against frayed wire. Molded phenolic base with eyelets and binder head screws nickel plated brass. **Terminals:** Hot solder-dipped brass. Available with **Y** or **¾W** as indicated. **W** terminals on special order only.

	Type 140	Type 141	Type 142	Type 150*	Type 151*	Type 152*	Type 164
Size, W. x H.	⅞″ x 13/32″	1⅛″ x ½″	1 5/16″ x ⅝″	1 13/16″ x ¾″	2″ x 15/16″	2½″ x 1⅛″	⅞″ x 13/32″
Barrier Spacing	⅜″	7/16″	9/16″	11/16″	⅞″	1⅛″	⅜″
Mounting Centers	5/16″	27/64″	½″	⅝″	¾″	⅞″	5/16″
Mtg. Hole Dia.	.160″	.175/.185″	.209″	.160″	.180″	.209″	.171/.175″
Screw Size	5-40 x 3/16″	6-32 x ¼″	8-32 x 5/16″	10-32 x 5/16″	12-32 x ⅜″	¼-28 x ½″	6-32 x ¼″

*Have .136″ dia. hole centered between mounting holes.

140 SERIES

Cinch Number	Con-tacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-140	1	$0.21	$0.17	$0.15	$0.13	$0.12	$0.11
2-140	2	.25	.21	.18	.15	.14	.13
3-140	3	.29	.24	.20	.17	.16	.15
4-140	4	.38	.29	.25	.21	.20	.18
5-140	5	.46	.37	.30	.26	.25	.23
6-140	6	.54	.43	.37	.29	.26	.25
7-140	7	.63	.49	.42	.34	.32	.30
8-140	8	.71	.58	.47	.38	.37	.35
9-140	9	.80	.64	.51	.42	.40	.38
10-140	10	.87	.70	.60	.46	.44	.42
11-140	11	.93	.75	.64	.49	.47	.45
12-140	12	1.05	.83	.69	.54	.51	.49
13-140	13	1.11	.88	.75	.61	.56	.53
14-140	14	1.20	.96	.81	.65	.62	.58
15-140	15	1.28	1.04	.85	.68	.66	.63
16-140	16	1.35	1.09	.90	.72	.69	.66
17-140	17	1.45	1.14	.96	.78	.72	.69
18-140	18	1.52	1.22	1.03	.81	.78	.72
19-140	19	1.60	1.27	1.07	.85	.81	.78
20-140	20	1.67	1.34	1.12	.88	.85	.81
21-140†	21	1.77	1.42	1.18	.92	.88	.84

141 SERIES

Cinch Number	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-141	1	$0.25	$0.20	$0.18	$0.15	$0.13	$0.13
2-141	2	.28	.22	.19	.16	.15	.14
3-141	3	.38	.29	.25	.20	.19	.18
4-141	4	.49	.40	.34	.27	.26	.25
5-141	5	.63	.47	.44	.36	.30	.29
6-141	6	.69	.54	.46	.38	.36	.34
7-141	7	.82	.65	.54	.43	.41	.40
8-141	8	.90	.72	.62	.48	.46	.43
9-141	9	1.02	.81	.68	.53	.50	.47
10-141	10	1.12	.89	.75	.71	.58	.53
11-141	11	1.22	.97	.83	.66	.63	.60
12-141	12	1.31	1.06	.87	.70	.67	.64
13-141	13	1.44	1.13	.93	.76	.72	.68
14-141	14	1.53	1.22	1.03	.82	.78	.74
15-141	15	1.62	1.29	1.09	.86	.82	.79
16-141	16	1.73	1.39	1.16	.91	.87	.83
17-141	17	1.84	1.47	1.23	1.00	.91	.87
18-141	18	1.94	1.55	1.29	1.04	1.00	.92
19-141	19	2.04	1.63	1.38	1.09	1.05	1.00
20-141	20	2.16	1.72	1.45	1.09	1.05	1.00

142 SERIES

Cinch Number	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-142	1	$0.28	$0.22	$0.19	$0.16	$0.15	$0.14
2-142	2	.34	.26	.22	.18	.17	.16
3-142	3	.45	.36	.29	.24	.23	.23
4-142	4	.61	.47	.40	.32	.30	.29
5-142	5	.72	.58	.47	.39	.37	.36
6-142	6	.85	.68	.58	.45	.43	.41
7-142	7	1.00	.79	.66	.51	.49	.46
8-142	8	1.11	.88	.74	.60	.56	.51
9-142	9	1.23	1.00	.82	.66	.63	.60
10-142	10	1.38	1.10	.90	.72	.69	.66
11-142	11	1.50	1.19	1.01	.79	.76	.71
12-142	12	1.62	1.29	1.09	.85	.82	.79
13-142	13	1.76	1.41	1.17	.92	.88	.84
14-142	14	1.89	1.51	1.26	1.02	.96	.89
15-142	15	2.02	1.61	1.34	1.08	1.03	.97
16-142	16	2.16	1.72	1.45	1.14	1.09	1.04
17-142	17	2.28	1.83	1.52	1.22	1.16	1.10

150 SERIES

Optional terminal **Y** available; prices on request.

Cinch Number	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-150	1	$0.64	$0.50	$0.43	$0.36	$0.35	$0.32
2-150	2	.87	.70	.60	.46	.44	.42
3-150	3	1.23	1.00	.82	.66	.63	.60
4-150	4	1.59	1.27	1.07	.84	.81	.76
5-150	5	1.95	1.55	1.29	1.05	1.00	.92
6-150	6	2.30	1.85	1.54	1.23	1.17	1.11
7-150	7	2.67	2.13	1.79	1.42	1.35	1.27
8-150	8	3.03	2.42	2.02	1.61	1.53	1.46
9-150	9	3.39	2.71	2.26	1.81	1.72	1.62
10-150	10	3.75	3.00	2.50	2.00	1.90	1.81

151 SERIES

Cinch Number	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-151	1	$0.93	$0.75	$0.63	$0.49	$0.48	$0.46
2-151	2	1.58	1.26	1.06	.84	.80	.75
3-151	3	2.28	1.83	1.52	1.22	1.16	1.10
4-151	4	2.99	2.38	1.98	1.59	1.51	1.44
5-151	5	3.69	2.95	2.45	1.96	1.86	1.77
6-151	6	4.39	3.51	2.93	2.34	2.23	2.11
7-151	7	5.08	4.06	3.39	2.71	2.58	2.44
8-151	8	5.79	4.63	3.86	3.09	2.94	2.78

152 SERIES

Cinch Number	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-152	1	$1.80	$1.44	$1.19	$1.01	$1.00	$0.91
2-152	2	2.64	2.11	1.76	1.45	1.41	1.31
3-152	3	3.60	2.88	2.39	1.97	1.92	1.82
4-152	4	4.57	3.65	3.05	2.56	2.42	2.30
5-152	5	5.53	4.42	3.69	3.10	2.94	2.78
6-152	6	6.49	5.20	4.33	3.64	3.45	3.28

140-Y AND ¾W SERIES

Cinch Number*	Con-tacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-140-Y	1	$0.25	$0.20	$0.18	$0.15	$0.13	$0.13
2-140-Y	2	.32	.25	.22	.18	.17	.16
3-140-Y	3	.39	.32	.26	.24	.22	.21
4-140-Y	4	.53	.43	.37	.28	.27	.26
5-140-Y	5	.66	.52	.44	.36	.35	.32
6-140-Y	6	.81	.65	.53	.43	.39	.38
7-140-Y	7	.88	.71	.61	.46	.44	.42
8-140-Y	8	1.02	.81	.68	.53	.50	.47
9-140-Y	9	1.13	.89	.76	.62	.58	.53
10-140-Y	10	1.25	1.02	.84	.67	.64	.62
11-140-Y	11	1.35	1.09	.90	.72	.69	.66
12-140-Y	12	1.49	1.18	1.01	.80	.75	.71
13-140-Y	13	1.60	1.28	1.08	.85	.82	.78
14-140-Y	14	1.73	1.39	1.16	.91	.87	.83
15-140-Y	15	1.85	1.48	1.23	1.00	.92	.88
16-140-Y	16	1.95	1.56	1.30	1.05	1.01	.92
17-140-Y	17	2.07	1.66	1.40	1.11	1.06	1.01
18-140-Y	18	2.21	1.76	1.47	1.17	1.11	1.06
19-140-Y	19	2.30	1.85	1.54	1.23	1.17	1.11
20-140-Y	20	2.42	1.94	1.61	1.28	1.23	1.16
21-140-Y†	21	2.56	2.04	1.71	1.35	1.29	1.23

141-Y AND ¾W SERIES

Cinch Number*	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-141-Y	1	$0.30	$0.24	$0.21	$0.17	$0.16	$0.15
2-141-Y	2	.39	.30	.25	.23	.22	.21
3-141-Y	3	.54	.43	.37	.28	.27	.27
4-141-Y	4	.71	.58	.47	.38	.37	.35
5-141-Y	5	.86	.69	.57	.45	.43	.41
6-141-Y	6	1.00	.80	.67	.51	.49	.47
7-141-Y	7	1.17	.92	.79	.63	.61	.56
8-141-Y	8	1.30	1.05	.87	.70	.67	.64
9-141-Y	9	1.46	1.16	.97	.78	.74	.69
10-141-Y	10	1.61	1.28	1.08	.86	.82	.78
11-141-Y	11	1.77	1.42	1.18	.92	.88	.84
12-141-Y	12	1.92	1.53	1.27	1.03	.97	.91
13-141-Y	13	2.07	1.66	1.40	1.11	1.06	1.01
14-141-Y	14	2.24	1.80	1.50	1.19	1.13	1.08
15-141-Y	15	2.38	1.91	1.59	1.27	1.20	1.14
16-141-Y	16	2.56	2.04	1.71	1.35	1.29	1.23
17-141-Y	17	2.71	2.17	1.82	1.46	1.38	1.29
18-141-Y	18	2.87	2.29	1.92	1.53	1.46	1.39
19-141-Y	19	3.05	2.43	2.02	1.61	1.54	1.47
20-141-Y	20	3.18	2.56	2.13	1.71	1.61	1.53

142-Y AND ¾W SERIES

Cinch Number*	Con-tacts	1-24	25-49	50-99	100-249	250-499	500-999
1-142-Y	1	$0.35	$0.27	$0.23	$0.19	$0.18	$0.17
2-142-Y	2	.46	.38	.30	.26	.25	.24
3-142-Y	3	.65	.51	.43	.33	.32	.32
4-142-Y	4	.86	.69	.58	.45	.43	.41
5-142-Y	5	1.05	.83	.70	.56	.51	.49
6-142-Y	6	1.25	1.01	.83	.67	.64	.61
7-142-Y	7	1.45	1.14	.96	.78	.72	.69
8-142-Y	8	1.62	1.29	1.09	.85	.82	.79
9-142-Y	9	1.82	1.46	1.20	.96	.90	.86
10-142-Y	10	2.02	1.61	1.34	1.08	1.03	.97
11-142-Y	11	2.21	1.77	1.48	1.17	1.11	1.06
12-142-Y	12	2.39	1.92	1.60	1.27	1.22	1.14
13-142-Y	13	2.60	2.07	1.73	1.39	1.31	1.25
14-142-Y	14	2.78	2.23	1.86	1.49	1.42	1.33
15-142-Y	15	3.00	2.38	1.98	1.59	1.51	1.44
16-142-Y	16	3.17	2.56	2.13	1.69	1.61	1.53
17-142-Y	17	3.37	2.69	2.25	1.81	1.71	1.61

*For ¾W Series, substitute **¾W** for **Y**, e.g., 1-142-¾**W**; prices on request. Mounting centers and lengths same as 142 Series.
†Also available 22, 23, 24 and 25 contacts; prices on request.

164 SERIES

Mounting centers and overall lengths same as 140 Series. Optional terminals **¾W** and **Y** available; prices on request.

Cinch Number	Con-tacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
1-164	1	$0.23	$0.19	$0.16	$0.14	$0.13	$0.12
2-164	2	.28	.22	.19	.16	.15	.14
3-164	3	.36	.27	.23	.19	.18	.17
4-164	4	.45	.37	.30	.24	.23	.23
5-164	5	.54	.44	.38	.29	.28	.27
6-164	6	.66	.50	.43	.36	.34	.32
7-164	7	.74	.60	.48	.40	.38	.36
8-164	8	.83	.67	.56	.44	.42	.40
9-164	9	.90	.74	.63	.48	.46	.44
10-164	10	1.03	.82	.68	.53	.50	.48
11-164	11	1.11	.88	.74	.60	.56	.51
12-164	12	1.20	.96	.81	.65	.62	.58
13-164	13	1.29	1.05	.86	.69	.66	.63
14-164	14	1.41	1.12	.92	.75	.71	.68
15-164	15	1.51	1.19	1.01	.80	.76	.71
16-164	16	1.60	1.27	1.07	.85	.81	.78
17-164	17	1.67	1.34	1.12	.88	.85	.81
18-164	18	1.79	1.44	1.19	.93	.89	.85
19-164	19	1.88	1.50	1.25	1.01	.93	.89
20-164	20	1.97	1.58	1.31	1.06	1.02	.93
21-164	21	2.06	1.66	1.39	1.10	1.06	1.01

CINCH Barrier Terminal Blocks

500 SERIES TERMINAL BLOCKS

Designed for critical electrical and mechanical requirements. Closed bottoms eliminate need for insulating strips. Knock-outs are molded in so "Y" terminals are acceptable if desired. Top-mounted marker strip available. **Series 540:** Terminals on ⅜″ centers; 5-40 binder head screws. Rated 2300 V rms, 15 A max. Size, 1⅛″ w. x 39/64″ h. **Series 541:** Terminals on 7/16″ ctrs.; 6-32 binder head screws. Rated 2800 V rms, 20 A max. Size, 1⅜″ w. x 11/16″ h. **Series 542:** Terminals on 9/16″ ctrs.; 8-32 binder head screws. Rated 4000 V rms, 30 A max. Size, 1⅝″ w. x ⅞″ h.

540 SERIES

Cinch Number	Contacts	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
2-540	2	$0.60	$0.46	$0.40	$0.32	$0.30	$0.28
3-540	3	.81	.65	.53	.43	.41	.36
4-540	4	1.00	.79	.66	.52	.49	.42
5-540	5	1.04	.82	.69	.54	.51	.48
6-540	6	1.28	1.06	.87	.70	.61	.56
7-540	7	1.40	1.11	.93	.75	.67	.64
8-540	8	1.47	1.17	1.00	.79	.75	.70
9-540	9	1.60	1.28	1.08	.85	.82	.78
10-540	10	1.76	1.41	1.17	.92	.88	.84
11-540	11	1.91	1.52	1.27	1.03	.97	.90
12-540	12	2.04	1.63	1.38	1.09	1.05	1.05
13-540	13	2.21	1.76	1.47	1.17	1.11	1.06
14-540	14	2.34	1.88	1.56	1.25	1.19	1.12
15-540	15	2.48	1.98	1.66	1.31	1.26	1.19
16-540	16	2.64	2.11	1.76	1.41	1.33	1.26
17-540	17	2.78	2.23	1.86	1.49	1.42	1.33
18-540	18	2.93	2.34	1.95	1.55	1.49	1.41
19-540	19	3.08	2.45	2.04	1.63	1.55	1.48
20-540	20	3.21	2.58	2.16	1.72	1.63	1.54
21-540	21	3.36	2.69	2.24	1.80	1.71	1.61
22-540	22	3.51	2.80	2.34	1.88	1.79	1.68
23-540	23	3.66	2.93	2.44	1.95	1.86	1.76
24-540	24	3.80	3.05	2.55	2.02	1.93	1.83
25-540	25	3.95	3.15	2.64	2.11	2.00	1.90
26-540	26	4.11	3.28	2.73	2.19	2.07	1.96
27-540	27	4.23	3.39	2.82	2.26	2.16	2.03
28-540	28	4.39	3.51	2.93	2.34	2.23	2.11
29-540	29	4.55	3.62	3.03	2.42	2.30	2.18
30-540	30	4.67	3.75	3.12	2.49	2.37	2.25
31-540	31	4.83	3.86	3.21	2.58	2.44	2.32

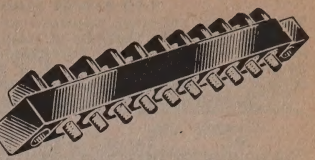
541 SERIES

2-541	2	$0.72	$0.60	$0.48	$0.39	$0.38	$0.36
3-541	3	.87	.70	.59	.46	.44	.42
4-541	4	1.04	.82	.69	.54	.51	.48
5-541	5	1.17	.92	.79	.63	.61	.56
6-541	6	1.40	1.11	.93	.75	.67	.64
7-541	7	1.50	1.19	1.01	.80	.76	.71
8-541	8	1.63	1.30	1.09	.86	.83	.79
9-541	9	1.79	1.44	1.19	.93	.89	.85
10-541	10	1.93	1.54	1.28	1.04	1.00	.91
11-541	11	2.06	1.66	1.39	1.10	1.06	1.01
12-541	12	2.27	1.81	1.50	1.19	1.13	1.08
13-541	13	2.38	1.91	1.59	1.27	1.20	1.14
14-541	14	2.55	2.02	1.69	1.35	1.28	1.22
15-541	15	2.69	2.16	1.80	1.44	1.35	1.28
16-541	16	2.82	2.26	1.89	1.51	1.44	1.35
17-541	17	3.01	2.39	2.00	1.60	1.52	1.45
18-541	18	3.13	2.50	2.10	1.67	1.59	1.51
19-541	19	3.29	2.64	2.21	1.76	1.67	1.58
20-541	20	3.44	2.74	2.29	1.84	1.74	1.64
21-541	21	3.57	2.87	2.38	1.91	1.82	1.72
22-541	22	3.76	3.00	2.50	2.00	1.91	1.81
23-541	23	3.91	3.12	2.61	2.07	1.97	1.88
24-541	24	4.04	3.24	2.70	2.16	2.04	1.94
25-541	25	4.20	3.36	2.79	2.24	2.13	2.01
26-541	26	4.34	3.48	2.90	2.32	2.21	2.07
27-541	27	4.53	3.60	3.01	2.40	2.28	2.17
28-541	28	4.65	3.74	3.11	2.48	2.36	2.24
29-541	29	4.80	3.83	3.20	2.57	2.43	2.30
30-541	30	4.95	3.95	3.30	2.65	2.50	2.37

542 SERIES

2-542	2	$0.79	$0.63	$0.51	$0.42	$0.40	$0.38
3-542	3	.97	.79	.66	.50	.48	.46
4-542	4	1.17	.92	.79	.63	.61	.56
5-542	5	1.35	1.09	.90	.72	.69	.66
6-542	6	1.55	1.24	1.05	.83	.79	.75
7-542	7	1.76	1.41	1.17	.92	.88	.84
8-542	8	1.95	1.55	1.29	1.05	1.00	.92
9-542	9	2.14	1.71	1.44	1.14	1.09	1.04
10-542	10	2.34	1.88	1.55	1.24	1.18	1.12
11-542	11	2.55	2.02	1.69	1.35	1.28	1.22
12-542	12	2.72	2.18	1.82	1.46	1.39	1.30
13-542	13	2.93	2.34	1.95	1.55	1.49	1.41
14-542	14	3.11	2.49	2.07	1.66	1.58	1.50
15-542	15	3.30	2.65	2.22	1.77	1.66	1.59
16-542	16	3.51	2.80	2.34	1.88	1.79	1.68
17-542	17	3.72	2.96	2.47	1.97	1.88	1.79
18-542	18	3.90	3.11	2.60	2.07	1.97	1.88
19-542	19	4.11	3.28	2.72	2.18	2.06	1.96
20-542	20	4.28	3.43	2.87	2.29	2.18	2.05
21-542	21	4.47	3.58	3.00	2.38	2.27	2.16
22-542	22	4.67	3.75	3.12	2.49	2.37	2.25
23-542	23	4.86	3.90	3.26	2.60	2.47	2.34
24-542	24	5.06	4.04	3.38	2.70	2.57	2.43
25-542	25	5.27	4.21	3.51	2.80	2.67	2.52
26-542	26	5.46	4.37	3.64	2.91	2.76	2.63

176 SERIES PC BARRIER TERMINAL BLOCKS



Feature molded-in terminals that cannot break loose when terminal screw is tightened. Designed for flow solder termination to the PC board conductor paths. Blocks listed are for 1/16″ PC boards. To order blocks for ⅛″ PC boards, change last digit to 3 (e.g., 2-176-3) same price.

Cinch No.	Contacts	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
2-176-2	2	$0.86	$0.68	$0.57	$0.46	$0.43	$0.41
3-176-2	3	.98	.78	.65	.52	.49	.47
4-176-2	4	1.10	.88	.74	.59	.56	.53
5-176-2	5	1.20	.96	.80	.64	.61	.58
6-176-2	6	1.33	1.06	.89	.71	.67	.64
7-176-2	7	1.43	1.14	.95	.76	.72	.68
8-176-2	8	1.55	1.24	1.04	.83	.79	.75
9-176-2	9	1.68	1.34	1.12	.90	.85	.81
10-176-2	10	1.82	1.46	1.22	.97	.92	.88

171 SERIES BARRIER TERMINAL BLOCKS

Miniature barrier type terminal blocks with single screw terminals. Size, 13/32″ w. x 5/16″ h., overall. Binder head screws, 2-56 x 3/16″. Mounting holes, ⅛″ dia. Rated 1000 V rms, 5 amps max.

Cinch Number	Contacts	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
2-171	2	$0.29	$0.24	$0.20	$0.16	$0.15	$0.15
3-171	3	.38	.29	.25	.20	.19	.18
4-171	4	.45	.37	.30	.24	.23	.23
5-171	5	.53	.43	.37	28	.27	.26
6-171	6	.63	.48	.41	.34	.32	.29
7-171	7	.69	.54	.45	.37	.36	.34
8-171	8	.75	.62	.49	.40	.39	.37

172 SERIES BARRIER TERMINAL BLOCKS

Double screw terminals mounted on ¼″ centers with 2-56 x 3/16″ binder head screws. Mounting holes, ⅛″ dia. Rated 1000 V rms, 5 amps max.

2-172	2	$0.54	$0.43	$0.37	$0.29	$0.28	$0.26
3-172	3	.69	.54	.46	.38	.36	.34
4-172	4	.84	.68	.56	.44	.43	.41
5-172	5	1.00	.79	.66	.51	.49	.46
6-172	6	1.13	.89	.76	.62	.58	.53
7-172	7	1.28	1.04	.85	.68	.66	.63
8-172	8	1.44	1.13	.93	.76	.72	.68
9-172	9	1.56	1.25	1.06	.84	.80	.75
10-172	10	1.72	1.39	1.14	.90	.87	.83
11-172	11	1.86	1.49	1.24	1.01	.93	.88
12-172	12	2.01	1.60	1.34	1.08	1.03	.96
13-172	13	2.16	1.72	1.45	1.14	1.09	1.04
14-172	14	2.30	1.84	1.53	1.23	1.17	1.10

172-Y, ¾W OR W BARRIER TERMINALS

Series 172 barrier type terminal blocks also available with **Y**, **W** or **¾W** terminals. For blocks with **W** terminals, change suffix **Y** to **W**; for **¾W** terminals, change suffix **Y** to **¾W** (2-172-**W**, 2-172-**¾W**); same price. Rated 1000 V rms, 5 amps max.

2-172-Y	2	$0.63	$0.49	$0.41	$0.34	$0.32	$0.30
3-172-Y	3	.81	.65	.53	.43	.41	.39
4-172-Y	4	1.00	.79	.66	.52	.49	.46
5-172-Y	5	1.17	.92	.79	.63	.61	.56
6-172-Y	6	1.35	1.08	.89	.72	.69	.65
7-172-Y	7	1.56	1.23	1.04	.82	.79	.74
8-172-Y	8	1.72	1.39	1.14	.92	.87	.83
9-172-Y	9	1.89	1.52	1.26	1.02	.96	.90
10-172-Y	10	2.07	1.66	1.40	1.11	1.06	1.01
11-172-Y	11	2.27	1.82	1.51	1.20	1.14	1.09
12-172-Y	12	2.44	1.95	1.63	1.30	1.24	1.17
13-172-Y	13	2.64	2.11	1.76	1.41	1.33	1.26
14-172-Y	14	2.80	2.25	1.88	1.50	1.44	1.34

173 SERIES BARRIER TERMINAL BLOCKS

Double screw terminals mounted on ⅜″ centers. Size, ⅜″ w. x ½″ h., overall. Brass binder head screws, 4-40 x 5/16″. Mounting holes, 5/32″ dia. Rated 1000 V rms, 5 amps max.

2-173	2	$0.30	$0.24	$0.21	$0.17	$0.16	$0.15
3-173	3	.42	.34	.27	.23	.22	.22
4-173	4	.54	.44	.38	.29	.28	.27
5-173	5	.67	.53	.44	.36	.35	.32
6-173	6	.79	.63	.51	.42	.40	.38
7-173	7	.89	.71	.61	.47	.45	.43
8-173	8	1.02	.80	.67	.53	.49	.47
9-173	9	1.11	.88	.75	.61	.56	.53
10-173	10	1.23	1.00	.81	.66	.63	.60

174 SERIES BARRIER TERMINAL BLOCKS

Single screw terminals mounted on ⅜″ centers. Size, ⅜″ w. x ½″ h., overall. Brass binder head screws, 4-40 x 5/16″. Mounting holes, 5/32″ dia. Rated 1000 V rms, 5 amps max.

2-174	2	$0.25	$0.20	$0.17	$0.14	$0.13	$0.13
3-174	3	.34	.26	.22	.18	.17	.16
4-174	4	.43	.35	.28	.23	.22	.18
5-174	5	.50	.41	.36	.28	.26	.25
6-174	6	.62	.47	.41	.34	.28	.26
7-174	7	.69	.54	.46	.38	.36	.34
8-174	8	.79	.63	.51	.42	.40	.38
9-174	9	.86	.69	.58	.45	.43	.41
10-174	10	.93	.75	.64	.49	.47	.45

CINCH MARKER STRIPS AND ACCESSORIES

MARKER STRIPS FOR BARRIER TERMINAL BLOCKS

140 SERIES MARKER STRIPS

For labelling terminal positions on barrier terminal blocks and insulating exposed portions of terminals from metallic mounting surface. Mounting holes correspond with those on appropriate barrier terminal block. Made of 1/32″ vulcanized fiber and numbered sequentially from 1 with legible white numerals.

MARKER STRIPS FOR 140, 140W AND 140-¾ W

Cinch No.	Term.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
MS-2-140	2	$0.13	$0.10	$0.09	$0.08	$0.07
MS-3-140	3	.13	.10	.09	.08	.07
MS-4-140	4	.13	.10	.09	.08	.07
MS-5-140	5	.13	.10	.09	.08	.07
MS-6-140	6	.13	.10	.09	.08	.07
MS-7-140	7	.15	.12	.10	.09	.08
MS-8-140	8	.15	.12	.10	.09	.08
MS-9-140	9	.15	.12	.10	.09	.08*
MS-10-140	10	.17	.13	.11	.10	.09*
MS-11-140	11	.17	.13	.11	.10	.09*
MS-12-140	12	.17	.13	.11	.10	.09*
MS-13-140	13	.19	.15	.13	.11	.10*
MS-14-140	14	.19	.15	.13	.11	.10*
MS-15-140	15	.19	.15	.13	.11	.10
MS-16-140	16	.21	.17	.14	.12	.11*
MS-17-140	17	.21	.17	.14	.12	.11*
MS-18-140	18	.21	.17	.14	.12	.11*
MS-19-140	19	.23	.19	.16	.13	.12*
MS-20-140	20	.23	.19	.16	.13	.12*
MS-21-140	21	.23	.19	.16	.13	.12*
MS-22-140	22	.56	.45	.38	.30	.15
MS-23-140	23	.56	.45	.38	.30	.16
MS-24-140	24	.68	.54	.45	.36	.18
MS-25-140	25	.68	.54	.45	.36	.19

MARKER STRIPS FOR 141, 141W AND 141-¾ W

MS-2-141	2	$0.13	$0.10	$0.09	$0.08	$0.07
MS-3-141	3	.13	.10	.09	.08	.07
MS-4-141	4	.13	.10	.09	.08	.07
MS-5-141	5	.15	.12	.10	.09	.08
MS-6-141	6	.15	.12	.10	.09	.08
MS-7-141	7	.15	.12	.10	.09	.08
MS-8-141	8	.17	.13	.11	.10	.09
MS-9-141	9	.17	.13	.11	.10	.09*
MS-10-141	10	.17	.13	.11	.10	.09*
MS-11-141	11	.19	.15	.13	.11	.10*
MS-12-141	12	.19	.15	.13	.11	.10*
MS-13-141	13	.21	.17	.14	.12	.11*
MS-14-141	14	.21	.17	.14	.12	.11*
MS-15-141	15	.23	.19	.16	.13	.12*
MS-16-141	16	.23	.19	.16	.13	.12*
MS-17-141	17	.26	.20	.17	.14	.13*
MS-18-141	18	.26	.20	.17	.14	.13*
MS-19-141	19	.27	.22	.18	.15	.14*
MS-20-141	20	.27	.22	.18	.15	.14*

MARKER STRIPS FOR 142, 142W AND 142-¾ W

MS-2-142	2	$0.13	$0.10	$0.09	$0.08	$0.07
MS-3-142	3	.13	.10	.09	.08	.07
MS-4-142	4	.15	.12	.10	.09	.08
MS-5-142	5	.15	.12	.10	.09	.08
MS-6-142	6	.15	.12	.10	.09	.08
MS-7-142	7	.17	.13	.11	.10	.09
MS-8-142	8	.17	.13	.11	.10	.09
MS-9-142	9	.19	.15	.13	.11	.10*
MS-10-142	10	.21	.17	.14	.12	.11*
MS-11-142	11	.21	.17	.14	.12	.11*
MS-12-142	12	.23	.19	.16	.13	.12*
MS-13-142	13	.23	.19	.16	.13	.12*
MS-14-142	14	.26	.20	.17	.14	.13*
MS-15-142	15	.26	.20	.17	.14	.13*
MS-16-142	16	.29	.23	.20	.16	.15*
MS-17-142	17	.32	.25	.21	.17	.16*

*For Lots of: 500–999 subtract **1c** from 250–499 price.

ACCESSORIES FOR BARRIER TERMINALS

JUMPERS

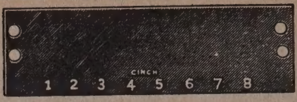
Cinch Number	For Series	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
95B	142	$0.227	$0.173	$0.146	$0.13	$0.12
140J-1	140	.117	.103	.089	.074	.058
141J	141	.117	.103	.089	.074	.058
141J-1	141	.13	.117	.103	.089	.074
142J-1	142	.13	.117	.103	.089	.074
142J-2	142	.118	.103	.089	.074	.058
540J	540	.38	.34	.28	.24	.23
541J	541	.47	.37	.30	.25	.24
542J	542	.50	.39	.34	.26	.25

SOLDER TERMINALS

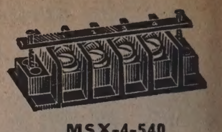
Cinch Number		Net Each, Lots of					
W-Type	¾W-Type	1-24	25-49	50-99	100-249	250-499	500-999
W-140†	¾W-140	$0.126	$0.116	$0.105	$0.095	$0.084	$0.063
W-141†	¾W-141	.126	.116	.105	.095	.084	.063
W-142†	¾W-142	.147	.126	.116	.105	.095	.074
W-150	....	.231	.200	.158	.147	.137	.105
W-151	....	.326	.263	.221	.200	.179	.147
W-152	....	.59	.47	.38	.30	.29	.26

†Change prefix **W** to **Y** for Y-type terminals; same price.

"Y" TYPE MARKER STRIPS ALSO AVAILABLE AT SLIGHT EXTRA COST



MS-8-140



MSX-4-540 (Installed)

500 SERIES MARKER STRIPS

For labelling terminal positions on "500" series barrier terminal blocks. Made of 1/16″ XP phenolic, 1/4″ wide. Numbered sequentially from 1 with 1/8″ legible white numerals. Mounted on top of terminal block as illustrated. Mounting screws furnished.

MARKER STRIPS FOR 540

Cinch No.	Term.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
MSX-2-540	2	$0.17	$0.13	$0.11	$0.10	$0.09
MSX-3-540	3	.17	.13	.11	.10	.09
MSX-4-540	4	.17	.13	.11	.10	.09
MSX-5-540	5	.17	.13	.11	.10	.09
MSX-6-540	6	.17	.13	.11	.10	.09
MSX-7-540	7	.17	.13	.11	.10	.09
MSX-8-540	8	.17	.13	.11	.10	.09
MSX-9-540	9	.17	.13	.11	.10	.09
MSX-10-540	10	.17	.13	.11	.10	.09
MSX-11-540	11	.19	.15	.13	.11	.10
MSX-12-540	12	.19	.15	.13	.11	.10
MSX-13-540	13	.19	.15	.13	.11	.10
MSX-14-540	14	.19	.15	.13	.11	.10
MSX-15-540	15	.19	.15	.13	.11	.10
MSX-16-540	16	.19	.15	.13	.11	.10
MSX-17-540	17	.21	.17	.14	.12	.11
MSX-18-540	18	.21	.17	.14	.12	.11
MSX-19-540	19	.21	.17	.14	.12	.11
MSX-20-540	20	.21	.17	.14	.12	.11
MSX-21-540	21	.21	.17	.14	.12	.11
MSX-22-540	22	.23	.19	.16	.13	.12
MSX-23-540	23	.23	.19	.16	.13	.12
MSX-24-540	24	.27	.22	.18	.15	.14
MSX-25-540	25	.27	.22	.18	.15	.14
MSX-26-540	26	.27	.22	.18	.15	.14
MSX-27-540	27	.27	.22	.18	.15	.14
MSX-28-540	28	.27	.22	.18	.15	.14
MSX-29-540	29	.29	.23	.20	.16	.15
MSX-30-540	30	.29	.23	.20	.16	.15
MSX-31-540	31	.29	.23	.20	.16	.15

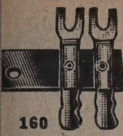
MARKER STRIPS FOR 541

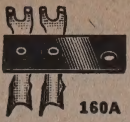
MSX-2-541	2	$0.17	$0.13	$0.11	$0.10	$0.09
MSX-3-541	3	.17	.13	.11	.10	.09
MSX-4-541	4	.17	.13	.11	.10	.09
MSX-5-541	5	.17	.13	.11	.10	.09
MSX-6-541	6	.17	.13	.11	.10	.09
MSX-7-541	7	.17	.13	.11	.10	.09
MSX-8-541	8	.17	.13	.11	.10	.09
MSX-9-541	9	.17	.13	.11	.10	.09
MSX-10-541	10	.17	.13	.11	.10	.09
MSX-11-541	11	.19	.15	.13	.11	.10
MSX-12-541	12	.19	.15	.13	.11	.10
MSX-13-541	13	.19	.15	.13	.11	.10
MSX-14-541	14	.19	.15	.13	.11	.10
MSX-15-541	15	.19	.15	.13	.11	.10
MSX-16-541	16	.21	.17	.14	.12	.11
MSX-17-541	17	.21	.17	.14	.12	.11
MSX-18-541	18	.21	.17	.14	.12	.11
MSX-19-541	19	.21	.17	.14	.12	.11
MSX-20-541	20	.21	.17	.14	.12	.11
MSX-21-541	21	.26	.20	.17	.14	.13
MSX-22-541	22	.26	.20	.17	.14	.13
MSX-23-541	23	.27	.22	.18	.15	.14
MSX-24-541	24	.27	.22	.18	.15	.14
MSX-25-541	25	.27	.22	.18	.15	.14
MSX-26-541	26	.27	.22	.18	.15	.14
MSX-27-541	27	.27	.22	.18	.15	.14
MSX-28-541	28	.29	.23	.20	.16	.15
MSX-29-541	29	.29	.23	.20	.16	.15
MSX-30-541	30	.29	.23	.20	.16	.15

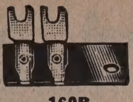
MARKER STRIPS FOR 542

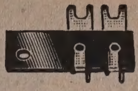
MSX-2-542	2	$0.17	$0.13	$0.11	$0.10	$0.09
MSX-3-542	3	.17	.13	.11	.10	.09
MSX-4-542	4	.17	.13	.11	.10	.09
MSX-5-542	5	.17	.13	.11	.10	.09
MSX-6-542	6	.17	.13	.11	.10	.09
MSX-7-542	7	.19	.15	.13	.11	.10
MSX-8-542	8	.19	.15	.13	.11	.10
MSX-9-542	9	.19	.15	.13	.11	.10
MSX-10-542	10	.19	.15	.13	.11	.10
MSX-11-542	11	.19	.15	.13	.11	.10
MSX-12-542	12	.21	.17	.14	.12	.11
MSX-13-542	13	.21	.17	.14	.12	.11
MSX-14-542	14	.21	.17	.14	.12	.11
MSX-15-542	15	.21	.17	.14	.12	.11
MSX-16-542	16	.26	.20	.17	.14	.13
MSX-17-542	17	.26	.20	.17	.14	.13
MSX-18-542	18	.26	.20	.17	.14	.13
MSX-19-542	19	.27	.22	.18	.15	.14
MSX-20-542	20	.27	.22	.18	.15	.14
MSX-21-542	21	.27	.22	.18	.15	.14
MSX-22-542	22	.27	.22	.18	.15	.14
MSX-23-542	23	.27	.22	.18	.15	.14
MSX-24-542	24	.29	.23	.20	.16	.15
MSX-25-542	25	.29	.23	.20	.16	.15
MSX-26-542	26	.29	.23	.20	.16	.15

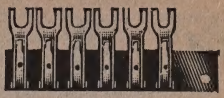
CINCH BARRIER BLOCK FANNING STRIPS


160


160A


160B


160BA


161, 162

onvenient means for rapidly connecting or disconnecting wiring rom barrier terminal blocks. Facilitate cable or harness wiring nd minimize the possibility of subsequent wiring errors. Available both straight and angle types. Black XP phenolic mount, ³⁄₃₂″ hick x ½″ wide, is supplied with hole in either right or left side; secures cable with lacing twine. For larger sizes, use of a cable clamp is recommended. Terminals are .032″ cadmium-plated brass. **All 160 Series** fit barrier block 140 Series, ⅜″ terminal centers. **Series 162** fit barrier block 142 Series, ⁹⁄₁₆″ terminal centers; ⅝″ wide. **Series 161** fit barrier block 141 Series, ⁷⁄₁₆″ terminal centers.

STRAIGHT TYPE—160 SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-499	500-499
2-160-*	2	$0.28	$0.23	$0.20	$0.17	$0.16
3-160-*	3	.35	.28	.24	.20	.18
4-160-*	4	.43	.35	.29	.24	.23
5-160-*	5	.50	.41	.35	.27	.26
6-160-*	6	.58	.46	.39	.29	.28
7-160-*	7	.66	.53	.43	.35	.34
8-160-*	8	.72	.58	.48	.40	.38
9-160-*	9	.83	.66	.57	.43	.42
0-160-*	10	.91	.74	.62	.48	.44
1-160-*	11	1.02	.80	.68	.54	.50
2-160-*	12	1.13	.90	.76	.61	.58
3-160-*	13	1.23	1.00	.83	.66	.63
4-160-*	14	1.30	1.03	.87	.69	.65
5-160-*	15	1.35	1.08	.90	.72	.69
6-160-*	16	1.47	1.17	1.00	.79	.74
7-160-*	17	1.51	1.20	1.02	.80	.78
8-160-*	18	1.58	1.25	1.06	.84	.80
9-160-*	19	1.67	1.32	1.12	.89	.86
20-160-*	20	1.73	1.39	1.17	.91	.88
21-160-*	21	1.82	1.47	1.22	.96	.91

STRAIGHT TYPE—160B SERIES

2-160B-*	2	$0.35	$0.28	$0.24	$0.20	$0.18
3-160B-*	3	.43	.35	.29	.24	.23
4-160B-*	4	.58	.46	.39	.29	.28
5-160B-*	5	.69	.56	.47	.37	.35
6-160B-*	6	.83	.66	.57	.43	.42
7-160B-*	7	.91	.74	.62	.48	.47
8-160B-*	8	1.13	.90	.76	.61	.58
9-160B-*	9	1.25	1.02	.84	.66	.63
0-160B-*	10	1.35	1.08	.90	.72	.69
1-160B-*	11	1.51	1.20	1.02	.80	.78
2-160B-*	12	1.58	1.25	1.06	.84	.80
3-160B-*	13	1.73	1.39	1.17	.91	.88
4-160B-*	14	1.89	1.51	1.28	1.02	.96
5-160B-*	15	2.02	1.61	1.33	1.07	1.02
6-160B-*	16	2.13	1.70	1.44	1.14	1.08
7-160B-*	17	2.26	1.81	1.51	1.20	1.14
8-160B-*	18	2.43	1.93	1.61	1.30	1.22
9-160B-*	19	2.58	2.07	1.72	1.38	1.30
20-160B-*	20	2.67	2.13	1.79	1.42	1.34
21-160B-*	21	2.79	2.23	1.88	1.49	1.42

STRAIGHT TYPE—161 SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2-161-*	2	$0.30	$0.26	$0.21	$0.18	$0.17
3-161-*	3	.40	.30	.26	.21	.20
4-161-*	4	.43	.35	.29	.24	.23
5-161-*	5	.53	.42	.37	.28	.27
6-161-*	6	.61	.48	.41	.30	.29
7-161-*	7	.69	.57	.47	.37	.35
8-161-*	8	.76	.61	.50	.42	.41
9-161-*	9	.83	.66	.57	.43	.42
10-161-*	10	.93	.76	.63	.50	.47
11-161-*	11	1.07	.87	.72	.58	.54
12-161-*	12	1.17	.92	.79	.62	.60
13-161-*	13	1.25	1.02	.84	.66	.64
14-161-*	14	1.32	1.06	.89	.70	.68
15-161-*	15	1.39	1.09	.91	.74	.70
16-161-*	16	1.48	1.19	1.01	.79	.75
17-161-*	17	1.53	1.23	1.03	.81	.79
18-161-*	18	1.67	1.32	1.09	.88	.81
19-161-*	19	1.70	1.35	1.13	.90	.87
20-161-*	20	1.80	1.44	1.19	.93	.90

STRAIGHT TYPE—162 SERIES

2-162-*	2	$0.35	$0.28	$0.24	$0.20	$0.18
3-162-*	3	.41	.34	.27	.23	.21
4-162-*	4	.50	.41	.35	.27	.26
5-162-*	5	.58	.46	.39	.29	.28
6-162-*	6	.66	.58	.48	.40	.38
7-162-*	7	.67	.58	.48	.40	.37
8-162-*	8	.83	.66	.57	.43	.42
9-162-*	9	.89	.70	.58	.47	.46
10-162-*	10	1.00	.79	.66	.53	.50
11-162-*	11	1.09	.88	.74	.60	.57
12-162-*	12	1.23	1.00	.83	.66	.63
13-162-*	13	1.30	1.03	.87	.69	.65
14-162-*	14	1.35	1.08	.90	.72	.69
15-162-*	15	1.45	1.17	.96	.78	.75
16-162-*	16	1.51	1.20	1.02	.80	.78
17-162-*	17	1.58	1.25	1.06	.84	.80

ANGLE TYPE—160A SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2-160A-*	2	$0.35	$0.28	$0.24	$0.20	$0.18
3-160A-*	3	.43	.35	.29	.24	.23
4-160A-*	4	.58	.46	.39	.29	.28
5-160A-*	5	.69	.56	.47	.37	.35
6-160A-*	6	.83	.66	.57	.43	.42
7-160A-*	7	.91	.74	.62	.48	.47
8-160A-*	8	1.13	.90	.76	.61	.58
9-160A-*	9	1.25	1.02	.84	.66	.63
10-160A-*	10	1.35	1.08	.90	.72	.69
11-160A-*	11	1.51	1.20	1.02	.80	.78
12-160A-*	12	1.58	1.25	1.06	.84	.80
13-160A-*	13	1.73	1.39	1.17	.91	.88
14-160A-*	14	1.89	1.51	1.28	1.02	.96
15-160A-*	15	2.02	1.61	1.33	1.07	1.02
16-160A-*	16	2.13	1.70	1.44	1.14	1.08
17-160A-*	17	2.26	1.81	1.51	1.20	1.14
18-160A-*	18	2.43	1.93	1.61	1.30	1.22
19-160A-*	19	2.58	2.07	1.72	1.38	1.30
20-160A-*	20	2.67	2.13	1.79	1.42	1.34
21-160A-*	21	2.79	2.23	1.88	1.49	1.42

ANGLE TYPE—160BA SERIES

2-160BA-*	2	$0.35	$0.28	$0.24	$0.20	$0.18
3-160BA-*	3	.43	.35	.29	.24	.23
4-160BA-*	4	.58	.46	.39	.29	.28
5-160BA-*	5	.69	.56	.47	.37	.35
6-160BA-*	6	.83	.66	.57	.43	.42
7-160BA-*	7	.91	.74	.62	.48	.47
8-160BA-*	8	1.13	.90	.76	.61	.58
9-160BA-*	9	1.25	1.02	.84	.66	.63
10-160BA-*	10	1.35	1.08	.90	.72	.69
11-160BA-*	11	1.51	1.20	1.02	.80	.78
12-160BA-*	12	1.58	1.25	1.06	.84	.80
13-160BA-*	13	1.73	1.39	1.17	.91	.88
14-160BA-*	14	1.89	1.51	1.28	1.02	.96
15-160BA-*	15	2.02	1.61	1.33	1.07	1.02
16-160BA-*	16	2.13	1.70	1.44	1.14	1.08
17-160BA-*	17	2.26	1.81	1.51	1.20	1.14
18-160BA-*	18	2.43	1.93	1.61	1.30	1.22
19-160BA-*	19	2.58	2.07	1.72	1.38	1.30
20-160BA-*	20	2.67	2.13	1.79	1.42	1.34
21-160BA-*	21	2.79	2.23	1.88	1.49	1.42

ANGLE TYPE—161A SERIES

Cinch Number	No. of Term.	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499
2-161A-*	2	$0.35	$0.28	$0.24	$0.20	$0.18
3-161A-*	3	.43	.35	.29	.24	.23
4-161A-*	4	.58	.46	.39	.29	.28
5-161A-*	5	.69	.56	.47	.37	.35
6-161A-*	6	.83	.66	.57	.43	.42
7-161A-*	7	.91	.74	.62	.48	.47
8-161A-*	8	1.13	.90	.76	.61	.58
9-161A-*	9	1.25	1.02	.84	.66	.63
10-161A-*	10	1.35	1.08	.90	.72	.69
11-161A-*	11	1.51	1.20	1.02	.80	.78
12-161A-*	12	1.58	1.25	1.06	.84	.80
13-161A-*	13	1.73	1.39	1.17	.91	.88
14-161A-*	14	1.89	1.51	1.28	1.02	.96
15-161A-*	15	2.02	1.61	1.33	1.07	1.02
16-161A-*	16	2.13	1.70	1.44	1.14	1.08
17-161A-*	17	2.26	1.81	1.51	1.20	1.14
18-161A-*	18	2.43	1.93	1.61	1.30	1.22
19-161A-*	19	2.58	2.07	1.72	1.38	1.30
20-161A-*	20	2.67	2.13	1.79	1.42	1.34

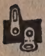
ANGLE TYPE—162A SERIES

2-162A-*	2	$0.41	$0.34	$0.27	$0.23	$0.21
3-162A-*	3	.50	.41	.40	.27	.26
4-162A-*	4	.66	.53	.43	.35	.34
5-162A-*	5	.76	.61	.50	.41	.40
6-162A-*	6	.89	.70	.60	.48	.45
7-162A-*	7	1.00	.79	.66	.53	.49
8-162A-*	8	1.23	1.05	.83	.66	.62
9-162A-*	9	1.32	1.06	.89	.70	.68
10-162A-*	10	1.45	1.17	.96	.78	.74
11-162A-*	11	1.58	1.25	1.06	.84	.80
12-162A-*	12	1.73	1.39	1.17	.91	.88
13-162A-*	13	1.84	1.48	1.23	1.01	.92
14-162A-*	14	1.94	1.54	1.30	1.04	1.01
15-162A-*	15	2.07	1.67	1.39	1.09	1.05
16-162A-*	16	2.23	1.79	1.49	1.19	1.13
17-162A-*	17	2.35	1.89	1.58	1.25	1.19

*Add suffix **L** for cable clamp hole on left side (e.g., 17-160-**L**); add suffix **R** for cable clamp hole on right side (e.g., 17-160-**R**).

CINCH TERMINAL STRIPS, CLAMPS, SOCKETS

LUG-TYPE TERMINAL STRIPS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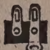
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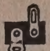
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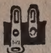
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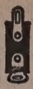
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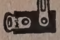
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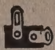
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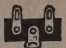
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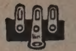
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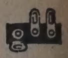
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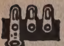
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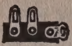
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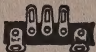
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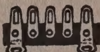
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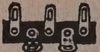
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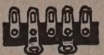
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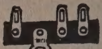
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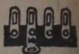
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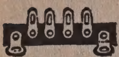
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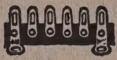
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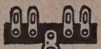
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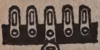
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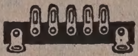
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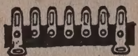
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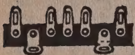
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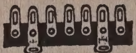
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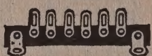
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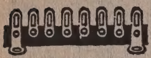
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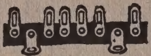
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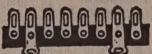

56C

These terminal strips are handy for neatly supporting resistors, capacitors, etc. in circuit wiring. Cadmium-plated steel lugs are spaced on ⅜″ centers with 0.140″ dia. mounting holes. Chocolate-colored phenolic is used. Strips are 1⁄16″ thick and ⅜″ wide.

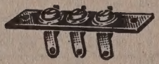
Cinch No.	Mtg. Ctrs.	Net Ea., Lots of		Cinch No.	Mtg. Ctrs.	Net Ea., Lots of	
		1-24	25-49*			1-24	25-49*
51	......	$0.076	$0.064	53C	¾″	$0.089	$0.076
51A	......	.076	.064	53E	......	.089	.076
51B	......	.076	.064	53F	......	.089	.076
51C	......	.076	.064	54	1⅞″	.089	.076
51F	......	.076	.064	54A	1⅞″	.089	.076
51L	......	.076	.064	54B	......	.089	.076
51R	......	.076	.064	54C	......	.089	.076
52	......	.076	.064	55	2¼″	.101	.089
52A	......	.076	.064	55A	2¼″	.101	.089
52B	......	.076	.064	55B	1½″	.101	.089
52C	......	.076	.064	55C	1½″	.101	.089
52R	......	.089	.076	56	2⅝″	.101	.089
53	1½″	.089	.076	56A	2⅝″	.101	.089
53A	1½″	.089	.076	56B	1⅞″	.101	.089
53B	¾″	.089	.076	56C	1⅞″	.101	.089

170 SERIES SOLDER TERMINAL STRIPS

Heavy solder terminals are made of .032″ brass, hot solder coated; mounted on ⅜″ centers. Black molded phenolic. Size, 5⁄16″ w. x ¼″ thick. Mounting holes, ⅜″ from center of end terminals.

Cinch Number	Contacts	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
1-170	1	$0.25	$0.21	$0.18	$0.15	$0.14	$0.14
2-170	2	.30	.25	.22	.20	.19	.18
3-170	3	.42	.32	.27	.23	.22	.21
4-170	4	.48	.40	.30	.25	.24	.23
5-170	5	.54	.44	.38	.28	.27	.26
6-170	6	.62	.48	.42	.32	.29	.28
7-170	7	.69	.54	.46	.38	.34	.33
8-170	8	.75	.60	.50	.42	.40	.36
9-170	9	.83	.67	.54	.44	.43	.40
10-170	10	.91	.71	.60	.48	.46	.44

2000 Series


Screw Strips

SERIES 2000 TERMINAL STRIPS

Compact, sturdy terminal strips for wiring, etc. Phenolic insulation; cadmium-plated steel brackets with .140″ dia. mounting holes centered 5⁄32″ from bracket end. Terminals are tin-plated .019″ brass spaced on 5⁄16″ centers; last 2 digits of no. indicate no. of terminals (e.g., 2008 has 8 terminals).

Cinch No.	Mtg. Ctrs.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
2002	1″	$0.12	$0.11	$0.10	$0.09	$0.08
2003	1 5⁄16″	.14	.12	.11	.10	.09
2004	1⅝″	.15	.14	.12	.11	.10★
2005	1 15⁄16″	.15	.14	.12	.11	.10★
2006	2¼″	.17	.15	.13	.12	.11★
2007	2 9⁄16″	.17	.15	.13	.12	.11★
2008	2⅞″	.20	.16	.14	.13	.12★
2009	3 3⁄16″	.21	.17	.15	.14	.13★
2010	3½″	.21	.17	.15	.14	.13★
2011	3 13⁄16″	.23	.19	.17	.15	.14
2012	4⅛″	.23	.19	.17	.15	.14
2013	4 7⁄16″	.26	.22	.19	.16	.15

SCREW TYPE TERMINAL STRIPS

Ideal design for chassis or breadboard layouts. Strips with 1 to 6 lugs are 1⁄16″ thick phenolic; those with 7 to 10 terminals are 3⁄32″ thick. Ends of screws are captivated to prevent removal; made of cadmium-plated steel. Terminals are cadmium-plated brass, spaced on 7⁄16″ centers. Mounting holes .136″ dia.

Cinch No.*	Mtg. Ctrs.	Net Ea., Lots		Cinch No.*	Mtg. Ctrs.	Net Ea., Lots	
		1-24	25-49*			1-24	25-49*
17-1	⅞″	$0.116	$0.101	17-6	3 1⁄16″	$0.278	$0.229
17-2	1 5⁄16″	.128	.116	17-7	3½″	.339	.266
17-3	1¾″	.153	.128	17-8	3 15⁄16″	.35	.29
17-4	2 3⁄16″	.204	.166	17-9	4⅜″	44	.33
17-5	2⅝″	.229	.178	17-10	4 13⁄16″	.46	.35

*Suffix indicates no. of terminals; e.g., 17-2 has 2 terminals.

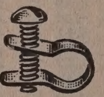
★**LARGER QUANTITY PRICES ON REQUEST.**

TO-5 OR TO-18 LOW PROFILE TRANSISTOR SOCKETS

Mount directly to PC board with snug fit to prevent bleeding of solder and flux to opposite board surface. Chamfered socket holes minimize lead bending during insertion. Contact ends are watertight, formed so that solder and fluxes cannot enter barrelled contact to obstruct lead entry. TO-18 directly accepts TO-5. TO-5 accepts TO-18 if leads are left full length or formed to match TO-5 lead centers. Insulator molded from 20% glass filled nylon in black, natural, or green. Contacts are of beryllium copper with gold plating over copper base. Max. pin dia., 0.019″. Max. pin depth, 0.200″ ±0.010″. Max. insertion force, 5 ounces; withdrawal force, ¼ ounce at 3 and 100 cycles. Voltage ratings at sea level, 1500 AC rms, 2000 VDC. Current rating, 2.5 amperes. Contact resistance, 0.005 ohms. Insulation resistance, 100,000 megs. Low profile, only .130″ above PC board surface.

Cinch No.	Color	Net Each, Lots of					
		1-24	25-49	50-99	100-249	250-499	500-999
3-LPS-B	Black	$0.22	$0.176	$0.147	$0.118	$0.111	$0.106
3-LPS-N	Natural	.22	.176	.147	.118	.111	.106
3-LPS-G	Green	.22	.176	.147	.118	.111	.106

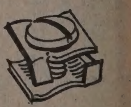
CABLE CLAMPS FOR FANNING STRIPS


CC-161 Series

Designed for use with Series 160, 161 and 162 fanning strips and supplied in six sizes. Made of nickel-plated brass with 6-32 round-head screw. Supplied unassembled.

C-J Number	I.D.	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
CC-161-4	¼″	$0.28	$0.21	$0.16	$0.15	$0.14
CC-161-6	⅜″	.34	.28	.23	.16	.15
CC-161-8	½″	.43	.32	.28	.23	.21
CC-161-10	⅝″	.48	.38	.32	.26	.25
CC-161-12	¾″	.55	.44	.37	.28	.27
CC-161-14	⅞″	.60	.48	.40	.31	.30

QUICK-CLAMP® TERMINALS

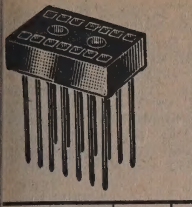


Simplifies engaging of wires to barrier blocks. Set includes two mating clamps and one screw. Part No. QC-1 for use with Barrier Block Series 141, 541; accommodates wire gauge 14 thru 22. Part No. QC-2 for use with Barrier Block Series 142, 542; accommodates wire gauge 8 thru 16. Standard package, quantity 200.

Cinch No.	Screw Size	Net Each, Lots of				
		1-24	25-49	50-99	100-249	250-499
QC-1	6-32 x 5⁄16″	$0.18	$0.14	$0.13	$0.12	$0.11
QC-2	8-32 x ⅜″	.18	.14	.13	.12	.11

CINCH SOCKETS FOR INTEGRATED CIRCUITS, PRINTED CIRCUITS, TRANSISTORS

LOW PROFILE WIRE WRAP• DIP SOCKETS



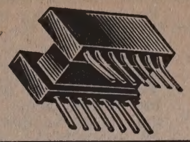
Provides higher board packing density. Accept standard 14 or 16 contacts size IC packages with flat or rolled leads. Contact resistance, 0.006 ohm max. Contacts of solid .025" phosphor bronze. Wire Wrap, .670" lg., enough for 3 wraps. Glass nylon insulation withstands temp. from −65° C to +125° C.

•Reg. Gardner-Denver TM.

Cinch No.	No. of Contacts	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499	500-999
14-W-DIP*	14‡	$0.84	$0.67	$0.57	$0.45	$0.43	$0.41
14-W-DIP-1†	14‡	.84	.67	.57	.45	.43	.41
14-W-DIP-2*	14§	1.09	.87	.72	.58	.55	.53
14-W-DIP-3†	14§	1.09	.87	.72	.58	.55	.53
16-W-DIP*	16‡	1.03	.82	.68	.55	.51	.48
16-W-DIP-1†	16‡	1.03	.82	.68	.55	51	.48
16-W-DIP-2*	16§	1.28	1.03	.86	.68	.65	.62
16-W-DIP-3†	16§	1.28	1.03	.86	.68	.65	.62

Insulator: *Black glass nylon; †white glass nylon. Contacts: ‡Electro-tin-plated; §gold plated.

DUAL-INLINE SOCKETS

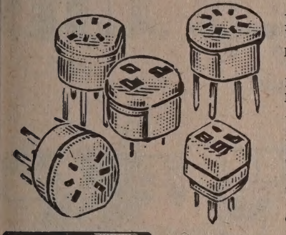


Accepts standard 14, 16 or 24 dual-inline pkg., flat or round leads. Used with PC boards designed for direct insertion of DIP. Insulator of GP black phenolic with electro-tin beryllium copper plated contacts, withstands temp. from −65° C to +150° C.

Cinch No.	No. Contacts	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499	500-999
14-DIP	14	$0.859	$0.687	$0.572	$0.458	$0.435	$0.412
14-N-DIP†	14	.859	.687	.572	.458	.435	.412
14-DIP-1*	14	1.12	.895	.746	.596	.567	.538
14-N-DIP-1*†	14	1.12	.895	.746	.596	.567	.538
16-DIP	16	.953	.762	.635	.508	.483	.457
16-N-DIP†	16	.953	.762	.635	.508	.483	.457
16-DIP-1*	16	1.23	.983	.82	.655	.623	.59
16-N-DIP-1*†	16	1.23	.983	.82	.655	.623	.59
24-DIP	24	1.426	1.147	.961	.775	.738	.70
24-N-DIP†	24	1.426	1.147	.961	.775	.738	.70
24-DIP-1*	24	1.685	1.35	1.134	.914	.869	.825
24-N-DIP-1*†	24	1.685	1.35	1.134	.914	.869	.825

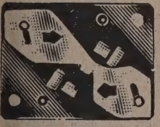
*Insulator of diallyl phthalate with gold plated contacts. †With narrow (square) leads to fit small-hole PC boards.

TO-5 AND TO-18 CASE SOCKETS



Rated at 1.0 amperes and 750 VAC (1020 VAC for SDG material). Insulation resistance is 1000 megohms minimum (50,000 megohms for SDG). Contact resistance, 0.05 ohms maximum. All units have dip solder terminations for PC board insertion. Contact material for Nos. 3-MSS, 4-MSS, 3-MSS-2 and 4-MSS-2 is phosphor bronze; all others, beryllium copper. TO-18 case, 3-MSS-2, 4-MSS-2; all others TO-5 case.

Cinch No.	Ins. Mat.	Contacts	Net Each, Lots of 1-24	25-49	50-99	100-249	250-499	500-999
3-MSS	MFE	3	$0.21	$0.168	$0.14	$0.112	$0.106	$0.101
4-MSS	MFE	4	.435	.348	.29	.232	.22	.209
6-MSS	MFE	6	.60	.48	.40	.32	.304	.288
6-MSS-1	FEP	6	1.253	1.002	.835	.668	.635	.601
8-MSS	MFE	8	.72	.576	.48	.384	.365	.346
6-ICS	SDG	6	.61	.48	.41	.34	.32	......
8-ICS	SDG	8	.72	.59	.49	.39	.38	......
10-ICS	SDG	10	.81	.64	.54	.44	.41	......
3-MSS-2	MFE	3	.30	.24	.20	.16	.152	.144
4-MSS-2	MFE	4	.413	.33	.275	.22	.209	.198



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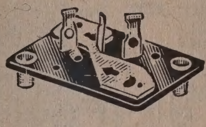

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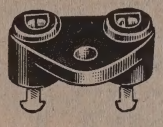

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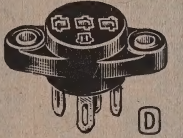

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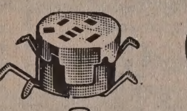

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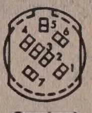
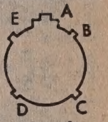


Contact Layout



Chassis Layout

POWER TRANSISTOR SOCKETS

LAMINATED TYPE

Cinch No. 2TS-1 (Fig. A)—Top and bottom plates are natural XP phenolic, vacuum wax impregnated. Contacts are of brass, cadmium plated. Formed thread for 6-20 screw. Has .104/.110" dia. hole in CR steel plate. Provides easy attachment to a heat sink.

Net Each, Lots of 1–24.......**$0.134**; 25–49.......**$0.112**
Lots of 50–99 .**$0.102**; 100–249 .**$0.09**; 250–499... **.08**

Cinch No. 2TS-2 (Fig. B)—Identical with above except equipped with integral eyelets for easy assembly to chassis.

Net Each, Lots of 1–24.......**$0.134**; 25–49.......**$0.112**
Lots of 50–99 .**$0.102**; 100–249 .**$0.09**; 250–499... **.08**

MODEL 2TS-3 MOLDED TYPE (FIG. C)

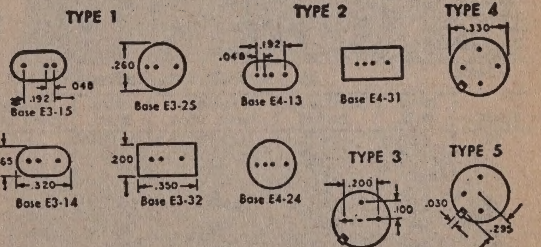
Molded power transistor socket. Casting is molded of general purpose phenolic. Contacts are phosphor bronze, cadmium plated. Mounting holes are .098" dia.; mounting centers are .425/.435".

Net Each, Lots of 1–24.......**$0.134**; 25–49.......**$0.112**
Lots of 50–99 .**$0.102**; 100–249 .**$0.09**; 250–499... **.08**

MODEL 2TS-4 GENERAL PURPOSE (FIG. D)

This new transistor socket was originally designed for an all-transistor television set; however, its future applications are many. This socket may be used in industrial communications, test equipment, ham gear, etc. Socket has a triangular base layout with 0.2" by 0.1" (JEDEC-30) contact centers, as well as three contacts in line (.048" by .192" contact centers). Casting is molded of general purpose phenolic; contacts are phosphor bronze, cadmium plated. May be used with the following EIA base designations: E3-14, E3-15, E3-25, E3-32, E3-38, E3-39, E3-42, E3-43, E3-44, E3-51, E3-53, E4-13, E4-24, E4-31, E4-43, E4-52, ET-103-D.

Cinch No. 2TS-4—Net Ea., Lots of 1-24 .**$0.18**; 25–49 .**$0.147**
Lots of 50–99 ..**$0.124**; 100–249 ..**$0.112**; 250–499. **.102**

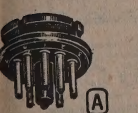


UNIVERSAL TRANSISTOR SOCKETS (FIG. E)

Universal transistor socket that can be used with all transistor bases shown in illustration above. Casting is of mica-filled phenolic (MFE). Contacts are beryllium copper and are gold plated. Contacts may be used with one or two-sided 1/16" PC boards.

Cinch No.	Base Types	Tabs Used (See Diag.)	Cont. Pos. Used	Net Each, Lots of* 1-24	25-49	50-99	100-249	250-499
7UTS	All	A–E	1, 3, 4, 7	$1.06	$0.85	$0.70	$0.57	$0.54
7UTS-1	1, 3	C, D, E	1, 3, 4, 7	.61	.48	.41	.34	.32
7UTS-3	3	C, D, E	1, 4, 7	.56	.45	.38	.29	.28
7UTS-4	4	A–E	1, 4, 5, 6, 7	.83	.66	.56	.45	.42
7UTS-5	5	B, D, E	1, 6, 7	.56	.45	.38	.29	.28
7UTS-6	1, 3	C, D, E	1, 3, 4, 7	.61	.48	.41	.34	.32

MOLDED CONNECTOR PLUGS AND SOCKETS



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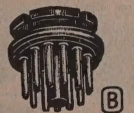

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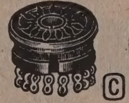

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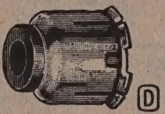


D

MODEL 8PB 8 CONTACT PLUG (FIG. A)

Molded from high dielectric black phenolic. Pins are nickel-plated and have tapered ends for easy insertion. Mounts on 1/16" chassis using No. 8RO retaining ring, or can be used with No. 16F cap. Will fit any standard octal socket.

Cinch No. 8PB—Net Ea., Lots of 1-24..**$0.27**; 25–49..**$0.23**
Lots of 50–99...**$0.20**; 100–249...**$0.17**; 250–499... **.16**

★DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR SOCKETS HAVING GOLD PLATED TERMINALS WILL VARY, CHECK WITH US FOR THE LATEST QUOTATIONS.

MODEL 11PB 11 CONTACT PLUG (FIG. B)

Molded from high dielectric black phenolic. Pins are nickel-plated and have tapered ends for easy insertion. Mounts on 1/16" chassis using No. 8RO retaining ring. Can be used with No. 16F cap. Will fit No. 11RB socket.

Cinch No. 11PB—Net Ea., Lots of 1-24..**$0.37**; 25–49..**$0.26**
Lots of 50–99...**$0.23**; 100–249...**$0.20**; 250–499... **.18**

MODEL 11RB 11 CONTACT SOCKET (FIG. C)

Molded from high dielectric black phenolic. Solder coated brass contacts. Mounts on 1/16" chassis using No. 8RO retaining ring. Can be used with No. 16F cap. Mates with No. 11PB plug.

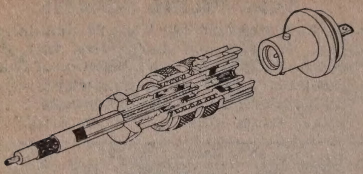
Cinch No. 11RB—Net Ea., Lots of 1-24..**$0.37**; 25–49..**$0.28**
Lots of 50–99...**$0.24**; 100–249...**$0.20**; 250–499... **.19**

MODEL 16F PLUG CAP (FIG. D)

Cadmium plated steel plug cap for snapping on 8 or 11 prong sockets grooved for 1/16" chassis. Screwdriver slot at bottom to facilitate removal. Rubber grommet has 15/64" dia. hole.

Cinch No. 16F—Net Ea., Lots of 1-24..**$0.99**; 25–49..**$0.84**
Lots of 50–99...**$0.66**; 100–249...**$0.53**; 250–499... **.48**

CINCH-NULINE NU-LOK 1200 SERIES CONNECTORS



SPECIFICATIONS

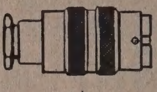
Voltage Rating: 1500 V rms at sea level; 375 V rms at 80,000 ft. **Contact Resistance:** At 7.5 amps, the IR drop across mated contacts will not exceed 12 mV at 25° C, or 23 mV at 200° C. **Contact Endurance:** Contact resistance will remain within stated range, upon completion of 500 contact insertion cycles. **Insulation Resistance:** 5000 megohms ambient, 200 megohms minimum per MIL-E-5272, Procedure I. **Operating Temperature:** −85° F to +250° F. **Cable Retention Force:** 50 lbs. minimum. **Mechanical Shock:** 500G. **Vibration:** In accordance with MIL-STD-202. **Corrosion:** 168 hours salt spray conducted in accordance with MIL-F-8615. **Fluid Immersion:** Tester for 20 continuous hours per MIL-L-7808 (250° F), MIL-H-5608 (190° F), MIL-H-3136, Type II (71° C) or JP-4 Fuel (68° F). **Altitude Humidity Cycling:** Sea level to 70,000 ft.; 0–100% relative humidity. **Probe Damage Proof:** Closed entry contacts per MIL-C-5015.

CABLE CONNECTORS—PLUGS AND JACKS

Available in a variety of styles, for shielded or unshielded cable of various sizes. **To Order:** Add suffix **1** through **0** from polarity chart below, to indicate proper polarity; add suffix **01** through **34** from cable chart below, to indicate cable size. NOTE: All cable sizes not available for each type; table shows sizes that can be ordered. Example: 1211-301 indicates Type 1211 straight shielded cable plug with polarity style 3, for .155″ O.D. cable (suffix 01).

Cinch-Nuline No.*	Description	Cable Sizes Available* (See chart below)	Net Each, Lots of 1-24	25-49	50-99
1211-	Straight shielded cable plug	01-05, 07-11, 14, 16, 18-25	$7.23	$6.39	$5.59
1212-	Rt.-angle shielded cable plug	01-05, 07-13, 16	8.44	7.72	6.99
1226-	Bulkhead shielded feed-thru jack	03-05, 06-09, 13, 16	4.68	4.31	4.00
1227-	Cable splice	01, 03-05, 07-09, 13, 16, 18, 19	3.65	3.08	2.78
1231-	Straight non-shielded cable plug	06, 15, 17, 26-34	6.62	5.77	5.04
1232-	Rt.-angle non-shielded cable plug	06, 15, 17, 26	8.44	7.72	6.99
1244-	Glass seal bulkhead feed-thru jack†	06 and 15	6.01	5.41	4.92
1246-	Bulkhead feed-thru jack†	06, 15, 17	4.56	4.07	3.71
1291-	ISO/Ground cable plug	03-05, 08, 16	7.23	6.38	5.59

*Add suffixes for polarity and cable size, as indicated. †Non-shielded cable.



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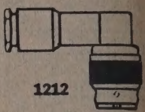

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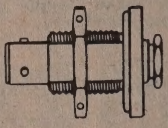

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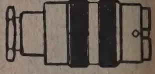

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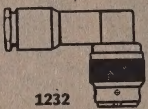

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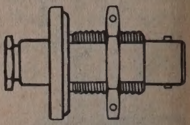

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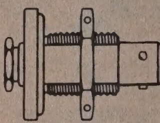

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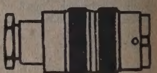
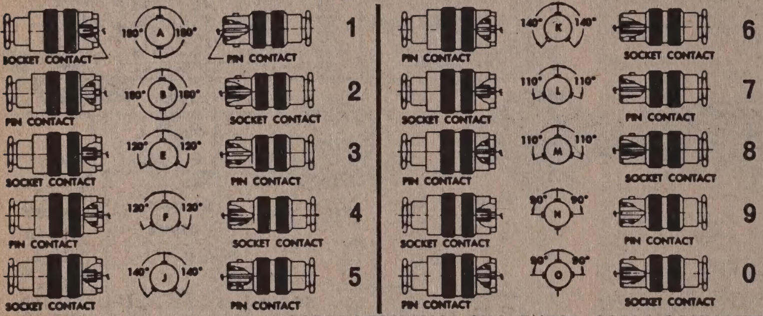


1291

POLARITY CHART (IN ACCORDANCE WITH MIL-C-25516A)



CABLE REFERENCE CHART (FOR CABLE CONNECTORS ABOVE)

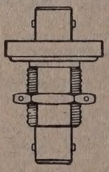
Suffix	Max. O.D.	Minimum Jacket	Primary Insul. Max.	Wire Size	Contact Hole Size
01	.155″	.145″	.107″	.015″	.040″
02	.084″	.070″	.045″	.015″	.040″
03	.124″	.110″	.070″	.038″	.045″
04	.135″	.121″	.092″	.038″	.045″
05	.142″	.128″	.095″	.038″	.045″
06	.095″	.080″	....	.038″	.040″
07	.150″	.136″	.100″	.041″	.045″
08	.088″	.074″	.054″	.015″	.040″
09	.096″	.081″	.062″	.038″	.040″
11	.212″	.198″	.119″	.032″	.040″
12	.122″	.110″	.084″	.041″	.045″

Suffix	Max. O.D.	Minimum Jacket	Primary Insul. Max.	Wire Size	Contact Hole Size
13	.110″	.096″	.060″	.041″	.045″
15	.120″	.110″	....	.051″	.055″
16	.165″	.151″	.115″	.052″	.055″
17	.100″	.090″	....	.041″	.045″
18	.147″	.133″	.078″	.031″	.045″
19	.202″	.188″	.121″	.052″	.055″
25	.150″	.136″	.115″	.016″	.040″
26	.094″	.090″	....	.052″	.065″
27	.062″	.058″	....	.041″	.045″
34	.066″	.062″	....	.041″	.045″
35	.058″	.054″	....	.041″	.045″

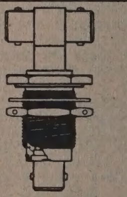
FEED-THRU CONNECTORS AND DUST CAPS

Bayonet coupling bulkhead jacks and adapters; .286″ dia. per MIL-C-25516. Type 1210 is protective dust cap for cable plugs. **To Order:** Substitute numbers **1** through **0** for X in part number, to indicate polarity from chart above. **Example:** 1244-177 is Type 1244 glass seal jack with polarity style 1; 1210-100 is dust cap with standard metal chain, polarity style 1.

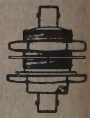
Cinch-Nuline Number	Description	Net Each, Lots of 1-24	25-49	50-99
1244-X77	Glass seal bulkhead feed-thru jack	$ 5.77	$ 5.22	$4.80
1283-X52	ISO/ground bulkhead feed-thru tee adapter	11.24	10.27	9.42
1284-X52	ISO/ground bulkhead feed-thru adapter	8.45	7.47	6.62
1210-X00	Dust cap with standard metal chain	3.10	2.92	2.73
1210-X01	Dust cap with short metal chain	3.10	2.92	2.73
1210-X02	Dust cap with standard nylon chain	3.10	2.92	2.73
1210-X11	Dust cap without chain	2.73	2.55	2.37



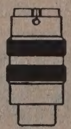
1244-X77



1283-X52



1284-X52



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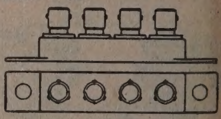
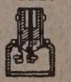


Junction Boxes

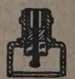
SERIES 1229 AND 1289 JUNCTION BOXES

Bayonet coupling jacks, .286″ dia. per MIL-C-25516. Available with 3 to 10 connectors. **To Order:** Substitute number **1** through **0** for X in Cinch-Nuline part number, to indicate polarity from chart above.

No. of Connectors	Series 1229 Common Ground Type: CNL Number	Net Each, Lots of 1-24	25-49	50-99	Series 1289 ISO/Ground Type: CNL Number	Net Each, Lots of 1-24	25-49	50-99
3	1229-X03	$ 9.28	$ 8.31	$ 7.82	1289-X03	$ 9.57	$ 8.60	$ 8.12
4	1229-X04	10.86	9.89	9.40	1289-X04	11.35	10.38	9.89
5	1229-X05	12.59	11.62	11.13	1289-X05	13.12	12.15	11.66
6	1229-X06	14.00	13.27	12.78	1289-X06	14.90	13.92	13.44
7	1229-X07	15.89	14.92	14.31	1289-X07	16.67	15.70	15.21
8	1229-X08	17.54	16.57	16.09	1289-X08	18.40	17.42	16.94
10	1229-X10	20.73	19.76	19.27	1289-X10	21.82	20.85	20.36



Series 1289



Series 1229

★DUE TO THE INSTABILITY IN THE COST OF GOLD, ALL PRICES FOR CONNECTORS HAVING GOLD PLATED TERMINALS WILL VARY. CHECK US FOR THE LATEST QUOTATIONS.

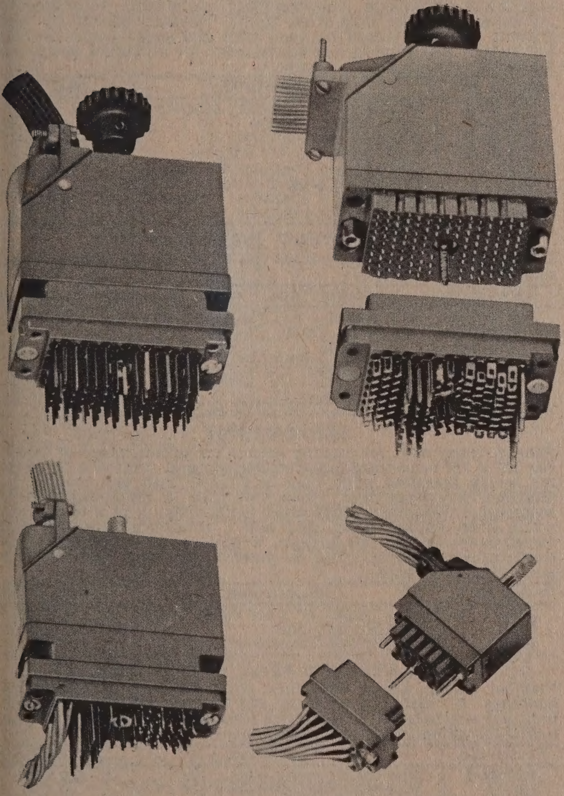
Connectors

WE HAVE IN-HOUSE CAPABILITY TO ASSEMBLE ALL OF THE BELOW-LISTED CONNECTORS AS WELL AS CUSTOM ASSEMBLIES

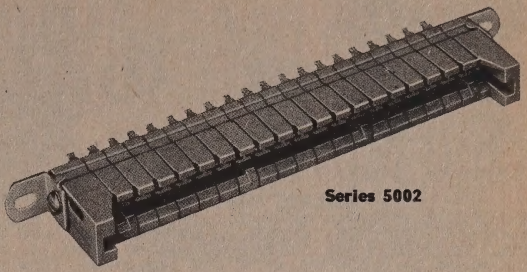
Series	Description	A.D.A.P.*
5001	5000 series—contact strips	Yes†
5002/5004	PC Varicon receptacle	Yes
5006/5007/5009	PC Varicon receptacle	Yes
5023	PC Varicon receptacle	Yes
6007	Card-edge	Yes
6018/6019	Card-edge	No
6022/6024	Card-edge	Yes
6064/6307	Card-edge	No
7000	7000 series—contact strips	Yes†
7001/7008/7020	PC Varicon receptacle	Yes
7009	PC Varicon receptacle	Yes
7015	PC Varicon receptacle	Yes
7021/7022/7023	PC Varicon plug	No
7024	PC Varicon receptacle	Yes
7038	PC Varicon receptacle	Yes
8016	2 pc. rectangle rack and panel	Yes
8017	2 pc. rectangle rack and panel	Yes
8026	2 pc. rectangle rack and panel	Yes

*Authorized distributor assembly program. †Contact strips are cut to order by the distributor or components are furnished separately.

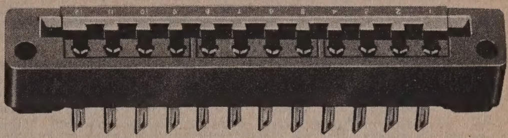
SERIES 8016 RACK-AND-PANEL



PC VARICON™ RECEPTACLES

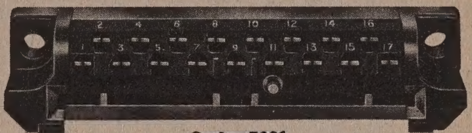


Series 5002

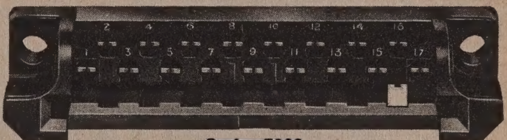


Series 5007

PC VARICON™ CONNECTORS



Series 7001



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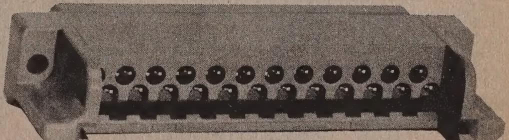

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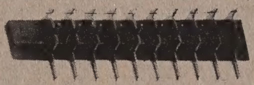
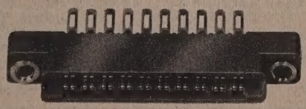


Series 7000/.100

PC CARD-EDGE



Series 6007/.156

Five Sizes: 6/12, 10/20, 12/24, 15/30, 18/36 and 22/24 contacts.

ORDERING INFORMATION FOR SERIES 6007

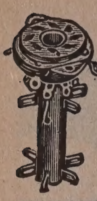
Order by complete number—00-6007-030. Last three digits (030) indicate number of contacts. Number of contacts available are shown in table below.

Readout			
Single	Dual	Single	Dual
006	012	015	030
010	020	018	036
012	024	022	044

THE VARIPAK™ CARD ENCLOSURE IS ALSO AVAILABLE

PIONEER'S STOCK OF ELCO CONNECTORS, COMPONENTS, PC CONNECTORS, RACK AND PANEL CONNECTORS, ENCLOSURES, TOOLS AND SOCKETS IS ONE OF THE MOST COMPLETE TO BE FOUND ANYWHERE. BECAUSE OF THE MANY DETAILS THAT CAN'T BE SHOWN IN THIS GENERAL CATALOG, WE ASK THAT YOU CALL US FOR SPECIFIC ELCO CATALOGS COVERING THE ITEMS INTERESTING YOU.

Vector Socket Turrets, Adapters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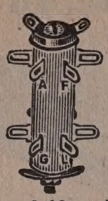
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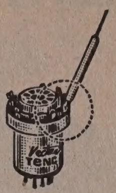
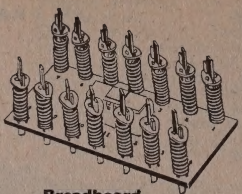
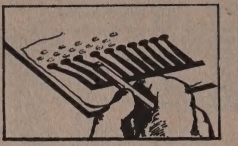
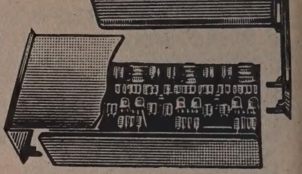

T-9-N-C


Breadboard Sockets


Vectoresist


Frame-Loc

SOCKET TURRETS

Compact, efficient mount for circuit components. Grade XXXP phenolic posts ½″ O.D., $\frac{1}{16}$″ wall; mica filled sockets; fused tin brass terminals; hot tin dipped steel saddles. Turret has six terminals at far end; three, six or nine near socket. Terminal turrets without sockets used for many mountings. Military types available with MIL sockets, silver-plated beryllium copper contacts, nickel-plated tin-dipped brass saddles and glass silicone turret post with fused tin brass terminals. Longer or shorter types and other terminal configurations available on special order. Dimension tolerance, ±$\frac{1}{16}$″.

Vector Comm. Type No.	MIL No.	Type	Hgt., In.	No. of Term.	No. of Rings	Space Between Rings, Inches	Net Each Com. Type
6-O-6T	680	Octal	1½	6	1	....	$0.68
8-O-9T	681	Octal	2	9	2	1	.75
10-O-9T	683	Octal	2½	9	2	1⅜	.78
10-O-12T	684	Octal	2½	12	2	1⅜	.83
6-M-6T	687	7-pin	1½	6	1	....	.78
8-M-9T	688	7-pin	2	9	2	1	.86
8-M-12T	689	7-pin	2	12	2	1	.89
10-MB-12T	690	7-pin	2½	12	2	1⅜	1.01
6-N-6T	693	9-pin	1½	6	1	....	.78
8-N-9T	694	9-pin	2	9	2	1	.86
8-N-12T	695	9-pin	2	12	2	1	.89
10-NB-12T	696	9-pin	2½	12	2	1⅜	1.01
6-12	676	Term.*	$1\frac{19}{64}$	12	2	⅝	.65
8-12	677	Term.*	$1\frac{51}{64}$	12	2	1	.69
10-12	678	Term.*	$2\frac{19}{64}$	12	2	1⅜	.73
12-12	679	Term.*	$2\frac{51}{64}$	12	2	1⅞	.80
8-12-C	.....	Term.†	2.0	12	2	1.00	.78
10-12-C	.....	Term.†	2.5	12	2	1⅜	.81
6-H-12	.....	Term.‡	1.5	12	2	⅞	.61

Terminal types: *No socket; †Bolted, no washers; ‡Hollow tube type with threaded 6-32 knurled nut in one end.

TRANSISTOR TURRETS

Transistor turrets permit mounting of transistors and other essential circuit components on one structure. Socket type accommodates three inline or "top-hat" transistors. Wafer turret holds four transistors on wafer punched for JEDEC or inline leads. Type 6- or 9-A-12T-440 is supplied with knurl nut.

Vector No.	Hgt., In.	Space Between Rings, In.	Space Between Wafers, In.	Saddle	Net Each
6-A-12T	1½	⅞	....	Yes	$1.32
6-A-12T-440	1½	⅝	....	No	1.29
8-A-12T	2	1⅜	....	Yes	1.34
9-A-12T-440	2¼	1⅜	....	No	1.34
654*	2½	1⅜	$2\frac{5}{16}$	No	1.10

*Wafer type.

TUBE SOCKETS

Miniature and noval tube socket types permit passing of ⅛″ rivet or #5 screws on .875″ centers, 7-pin; 1.125″ centers, 9-pin; 8-pin octal types with .136″ holes on 1.312″ centers. No center shields. With hot tin dipped saddles; available with counterbore for turret applications (Types R71J and R91J). Mica filled phenolic with cadmium plated brass terminals; suffix **J** indicates beryllium copper contacts, silver-plated and hot tin dipped.

Vector No.	Min. Type	Ctr. Bore	Net Each	Vector No.	Octal Type	Ctr. Bore	Net Each
R71J	7-pin	Yes	$0.61	R8.5	8-pin	No*	$0.98
R7J	7-pin	No	.35	R8J‡	8-pin	No*	.55
R91J	9-pin†	Yes	.80	R9J	9-pin†	No	.23

*$\frac{5}{32}$″ holes on ½″ centers. †Noval type. ‡Military type TS10P01 with nickel plated brass flash.

TUBE SOCKET TEST ADAPTERS

Each adapter has straight through plug to socket connections extended to radial test tabs on adapter skirt surrounding the socket. Tabs are recessed into skirt. Contacts of highest quality beryllium copper. Molded phenolic bodies.

Vector No.	Tube Type	Body Dia.	Skirt Dia.	Length*	Net Ea.
T-7-M	7-Pin Min.	0.75″	1.03″	1.50″	$1.93
T-8-O	8-Pin Octal	1.25″	1.56″	1.50″	2.03
T-9-N	9-Pin Noval	0.87″	1.16″	1.50″	2.03
P-1	Probe for above adapters				.57
T-789	Set of above 4 items in plastic case				6.53

*Less prongs.

TUBE BASE SHIELDS

Mount above socket as a base for bayonet type tube shields. Cadmium plated steel.

Vector No. S-7—7-pin type. Net Each....................$0.19

Vector No. S-9—9-pin type. Net Each.................... .10

BREADBOARD SOCKETS

Breadboarding of tube and IC circuitry. Reliable solderless springclip terminals are soldered to socket contacts on underside of wafer to make connection to any socket. Simply place wire (up to six) in springclip terminal.

Vector No.	Description	Net Each
567-1C	8-pin octal solderless socket w/mtg. hardware	$1.50
568-1C	9-pin noval solderless socket w/mtg. hardware	1.65
569-1C	7-pin min. socket w/mtg. hardware	1.35
570B	Transistor socket (4 lead) press fits in "A" pattern Vectorbord®	2.49
570G	14-pin dual-in-line solderless skt for IC devices	3.95
570F	12-pin IC socket	3.95

CURRENT TEST ADAPTERS

Make tube circuit current or voltage measurements without cutting leads or making computations; made from tube side of equipment. Special dual-sided probe "breaks" circuit to read current. Adapter placed between tube and socket; tabs provide test points. Adapters fit into shield bases for miniature and noval types; or, standard tube clamps.

Vector No.	Description	Net Each
T-7-M-C	Miniature 7-pin socket adapter	$ 3.68
T-8-O-C	Octal socket adapter	4.62
T-9-N-C	Noval socket adapter	3.94
T-9-R-C	9-pin Novar socket adapter	3.83
T-12-C	Compactron 12-pin socket adapter	4.71
P-2	Dual sided plug-in probe for above	1.19
T-789-C	Set of first 3 adapters, P-2 and case	14.07
T-912-C	Set of last 2 adapters, P-2 and case	10.87

EXPERIMENTERS' TEST ADAPTERS

Less shells and tabs; connections can be cross-connected by user; must be soldered.

Vector No.	Socket Type	Lgth., less prongs	Net Each
TX-8-O	Octal	1.45″	$2.57
TX-7-M	Min. 7-pin	1.41″	1.38
TX-9-N	Noval	1.41″	1.19
T-7-M-S	Min. 7-pin*	3.25″	8.60
T-8-O-S	Octal*	4.00″	9.59
T-9-N-S	Noval*	3.25″	9.59

*Extended socket adapters with outer shells.

VECTORESIST

Rub-on resist used for making etched circuits in place of tapes. Big 10″ x 15″ semi-transparent sheets of resist printed with resist ink which transfers when back is rubbed with ball point pen. Transfer to copper clad board and etch in ferric chloride or ammonium persulfate. R322 sheet is universal type with various width lines, circles, pads, dots and 3 connector patterns with contacts spaced on .156 centers. R405 is assorted straight lines from $\frac{1}{64}$″ to ⅛″ wide. R406 is sheet of transistor pad patterns and $\frac{3}{32}$″ and ⅛″ pads.

Vector No.	Description	Net Each
R322	Rub-on Resist 10″ x 15″ sheet all purpose	$2.49
R405	Rub-on Resist—lines	2.50
R406	Rub-on Resist Transistor pads	2.50

GRID LAYOUT PAPER (NOT ILLUS.)

Pads of tracing paper with dots corresponding to Vectorbord patterns "A" with .093 holes on .265 centers and "G" with .062 holes on alternate 0.1 centers. Use for laying out wiring patterns before installing terminals in pre-punched Vectorbord.

Vector No.	Description	Net Each
R173A-1	Pads of 50 sheets 8½″ x 17″	$2.50
R173A	Pads of 50 sheets 8½″ x 11″	2.00
R173G	Pads of 50 sheets 8½″ x 11″	2.00

FRAME-LOC RAILS

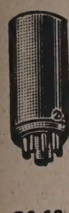
Handsome extruded aluminum rails of varying widths with $\frac{1}{16}$″ or $\frac{3}{32}$″ grooves running lengthwise for holding printed circuit boards. Rails are supplied with 45° mitred ends and corner brackets and screws which permit making good looking cases in minutes. Use aluminum panels listed below for covers or supply your own. Can be cut for making card guides.

Vector No.	Description	Net Each*
SR1-31-062	Pair 1″ wide x 3.11″ long	$1.17
SR1-46-062	Pair 1″ wide x 4.61″ long	1.29
SR2-31-062	Pair 2″ wide x 3.11″ long	1.35
SR2-46-062	Pair 2″ wide x 4.61″ long	1.58
SR2-66-062	Pair 2″ wide x 6.61″ long	1.38
SR2-48-093	Pair 2″ wide x 4.91″ long	1.60
SR2-85-093	Pair 2″ wide x 8.61″ long	2.10
SR2-170-093	Pair 2″ wide x 17.1″ long	3.50
PL48-85	4.8″ wide x 8.5″ long panel	1.37
PL48-170	4.8″ wide x 17″ long panel	2.07
PL85-170	8.5″ wide x 17″ long panel	3.15

*Package of 2.

QUANTITY PRICES AVAILABLE ON REQUEST

Vector Socket Turrets, Boards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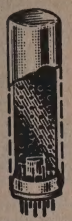
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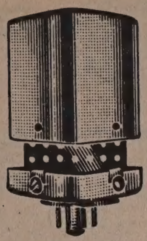
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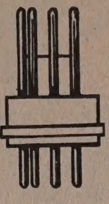
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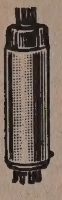
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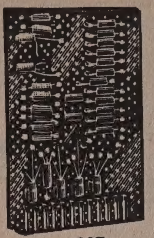
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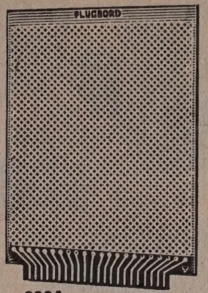

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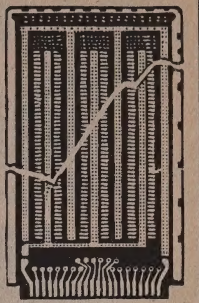
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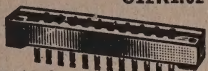
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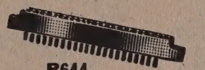

R644

PLUG-IN UNITS

Small round and square plug-ins are ideal for packaging hand-wired, printed or solid state plug-in modules. Aluminum case provides shielding and strength. Wide variety of internal structures for easy circuit wiring. Plugs are standard tube base style. Plug key in octal-based units points toward case corner.

Vector Number	Plug Type	Case Size, Shape x Ht.⌶	Internal Structure	Net Each
B-8	Octal	1.42″ sq. x 2″	None	$1.67
B-10	Octal	1.42″ sq. x 2.5″	None	1.68
B-10-N*	Octal	1.42″ sq. x 2.5″	Turret	2.70
B-10-T	Octal	1.42″ sq. x 2.5″	Turret	2.09
B-10-4†	Octal	1.42″ sq. x 2.5″	Card w/terms.	2.95
C-10	Octal	2″ sq. x 2.5″	None	1.62
C-12	Octal	2″ sq. x 3″	None	1.53
C-12K1.02	Octal	2″ sq. x 3″	None	1.17
C-12-T	Octal	2″ sq. x 3″	Turret with 12 lugs	2.34
G2-10	Octal	1¼″ dia. x 2½″	None	1.22
G2.10T-1	Octal	1¼″ dia. x 2½″	Term. turret and wafer	2.32
G2-10-4§	Octal	1¼″ dia. x 2½″	Card w/terms.	2.58
G2.1-8	Min. 9-pin	¾″ dia. x 2″	Spacer	1.52
G2.1-8F	Min. 9-pin	¾″ dia. x 2″	None	1.56
G2.1-8-4#	Min. 9-pin	¾″ dia. x 2″	Card w/terms.	2.42
G2.2-8F	Min. 7-pin	.625″ dia. x 2″	None	1.56
G2.2-8-4•	Min. 7-pin	.625″ dia. x 2″	Card w/terms.	2.39
511	Terminal card 1.9″ x 2.7″; .093″ holes▴			.85
514	Terminal card 1.9″ x 2.7″; .062″ holes▪			1.07

*Has 9-pin noval socket mounted in top. †Has wall 1.37″ w. x 1.87″ lg. with .093″ holes on .265″ centers and terminals. §Has wall 1.08″ w. x 1.78″ lg. with .093″ holes on .250″ centers and terminals. #Has wall .60″ w. x 1.62″ lg. with .062″ holes on .141″ centers and terminals. •Has wall .46″ w. x 2″ lg. with .062″ holes on .141″ centers and terminals. ▴Holes on .265″ centers. ▪Holes spaced alt. 0.1″. ⌶Less prongs.

TUBE BASE PLUGS

Mica-filled castings with phosphor bronze cadmium plated pins. Mount with 5-40 or 4-40 screw thru center hole (except K1.14).

Vector Number	Tube Type	Dia., Inches	Pin Size, Inches	Net Each
P7	7-pin Min.	.620	17/32	$0.51
P9	9-pin Noval	.750	17/32	.56
P7A	7-pin Min.	.620	3/16	.50
P9A	9-pin Noval	.750	3/16	.56
K1.302	7-pin Min.*	.620	17/32	.51
K1.402	9-pin Noval*	.750	17/32	.56
K1.334	7-pin Hooked	.620	3/16	.57
K1.434	9-pin Hooked*	.750	3/16	.60
K1.313	7-pin Min.*†	.620	3/16	.50
K1.413	9-pin Noval*†	.750	3/16	.56
P8L	8-pin Loctal*	1.156	13/32	1.29
K1.14	14-pin	.750	17/32	1.25

*No center post. †No keyway.

CABLE CONNECTOR PLUGS

Permit connecting cables to miniature and noval tube sockets. Aluminum shells fitted to 7-pin and 9-pin plugs. In type D, Heyco strain relief grommet mounted in the end of the shell; base screws hold the shell on the plug. In type C, a rubber grommet with ¼″ hole is mounted in side wall and center screw holds assembly together. Approx. length, 2⅛″, less pins.

Vector No. P7D—7-pin, ⅝″ O.D. end outlet. Net Each...$1.65
Vector No. P9D—9-pin, ¾″ O.D. end outlet. Net Each.. 2.24
Vector No. P7C—7-pin, ⅝″ O.D., side outlet. Net Each.... 1.65
Vector No. P9C—9-pin, ¾″ O.D., side outlet. Net Each.... 1.85

VECTOR-PAK DISCRETE CARD GUIDE CAGES

Cages with plugbords installed are 19″ w. x 9″ d. x 5¼″ h., slotted for rack mounting. Six heavy extruded aluminum cross members, aluminum side walls. Will accommodate cards 3″ to 4½″ wide and up to 7⅞″ long. Infinitely variable connector mounting without drilling holes. Partially assembled.

Vector No. CCK-13—Cage with discrete aluminum card guides to accommodate 20 cards at ¾″ intervals. Can be adjusted for other spacing in multiples of ¼″. Net Each..........$29.50

Vector No. CCK-3—Has extruded aluminum guide plates rather than individual card guides, with slots every .150″ over entire width of cage. Net Each..............................$24.95

PLUGBORDS

Pre-punched plugbords speed production of printed circuit prototypes or serve as ready-to-wire structures for card mounted circuitry in any equipment using plug-in circuit cards. Plugbords are 1/16″ thick epoxy paper per MIL-P-22323 Type PEE or G-10 epoxy glass per MIL-P-18177 with pre-punched .062 holes located on alternate 0.1 centers. Contacts attached at bottom are Elco Varicon on .2 centers or 2 oz. copper etched on .156 centers with "lands" terminating around holes near bottom edge of board. Precision punched holes accept Vector T-28 MiniKlips, standard turned terminals, or eyelets. Plugbord 838PWE (not illustrated) has transistor pad on one side of board to speed wiring.

Vector No.	Type	Contacts	Size, In.	Net Each
812	Epoxy paper	16 Varicon	4½ x 6½	$3.13
812WE	Epoxy glass	16 Varicon	4½ x 6½	3.71
R616-1	Recept. for above	16	....	3.16
837	Epoxy paper	12 Varicon	3 x 4½	2.45
837WE	Epoxy glass	12 Varicon	3 x 4½	2.71
R612-1	Recept. for above	12	....	2.56
848WE	Epoxy glass	35 Varicon	4½ x 6½	6.39
838	Epoxy paper, 2 sides	43 etched	4½ x 6½	4.08
838A	Epoxy paper, 1 side	22 etched	4½ x 6½	2.95
838PWE	Epoxy glass, 1 side	22 etched	4½ x 6½	4.22

DIP PLUGBORDS

3677 Series: Mount up to 24 14-lead IC sockets (21 16-lead) and components. Punched grid has .042″ holes spaced 0.1″; etched buses one side for Vcc and ground are tinned. FR-4 epoxy glass per MIL-P-13949, Type FL-GF. Gold plated contacts (two sides). **3682 Series:** Same as 3677 but mounts up to 54 14-lead sockets (48 16-lead). For Wire-Wrap* sockets, T44 Miniwrap terminals. Type 3682-4 has ground plane on back with etched clearance around each hole. **Universal Types 3662 and 848PWE:** Punched boards without etched circuit pattern. **X-Y Series 3474-3477:** Copper etched tinned lines run vertically on one side and horizontally on reverse, or vertically one side only (Y type). Type PX epoxy paper. **Type 3690 Extender:** Permits operation of wired plugbords outside or card enclosures. Epoxy glass.

Vector No.	Contacts	Description	Size, Inches	Receptacle	Net Each
3677	44	Epoxy glass	4.5 x 9.6	R644	$ 9.89
3677-2	44	Epoxy glass	4.5 x 6.5	R644	8.84
3682	44	Epoxy glass	4.5 x 9.6	R644	9.50
3682-2	44	Epoxy glass	4.5 x 6.5	R644	8.49
3682-4	44	Epoxy glass	4.5 x 6.5	R644	9.25
3662	44	Universal; glass	4.5 x 6.5	R644	6.95
848PWE	35*	Universal; glass	4.5 x 6.5	R635	6.60
3474	44	X-Y matrix; paper	4.5 x 6.5	R644	10.50
3474-3	22	Y matrix; paper	4.5 x 6.5	R644	8.08
3476	35*	X-Y matrix; paper	4.5 x 6.5	R635	11.40
3476-3	35*	Y matrix; apper	4.5 x 6.5	R635	8.98
3477	44	X-Y; no notches	4.5 x 6.5	R636	9.94
3795	44	Epoxy glass	2.73 x 4.5	R644-2	4.35
3795-1	44	Epoxy glass	2.73 x 4.5	R644-2	5.55
3795-2	44	Phenolic	2.74 x 4.5	R644-2	2.85
3795-3	44	Phenolic	2.73 x 4.5	R644-2	3.45
3797	30	Epoxy glass	2.73 x 4.5	R630	3.76
3797-1	30	Phenolic	2.73 x 4.5	R630	3.30
3797-2	30	Epoxy glass	2.73 x 4.5	R630	5.20
FPA-14-2	44	Epoxy glass	4.5 x 6.5	R644-1	6.25
R635	35*	Receptacle	4.21 x .531 x .828		5.76
R636	72	Receptacle	4.57 x .34 x .735		5.95
R644	44	Receptacle	4.29 x .34 x .458		2.97
R644-1	44	Receptacle	4.28 x .36 x .730		4.24
R644-2	44	Receptacle	3.16 x .37 x .625		2.57
R630	30	Receptacle	3.19 x .34 x .458		2.55
3690	44	Extender	4.5 x 8	†	8.50
P139	Line cutter tool‡				3.85

*Elco Varicon contacts. †Permanently mounted receptacle. ‡For 3474–3477 plugbords. *Reg. Gardner-Denver TM.

BR27 SERIES RECEPTACLE MTD. CARD GUIDES

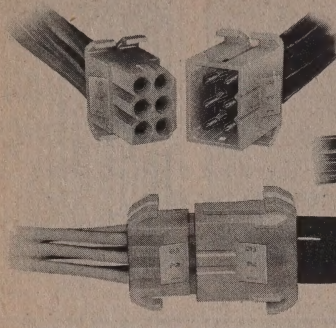
Provides support for receptacle supported circuit boards. For plugbords with centered contacts except BR27-2 for .050″ offset contact plugbords. With mounting hardware.

Any Model—Net per Pair..............................$0.95

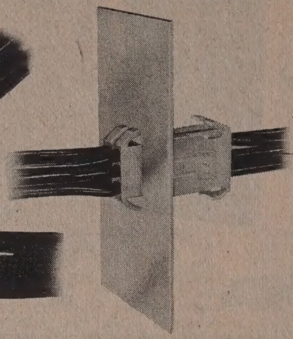
Vector No.	Use With		Vector No.	Use With	
	Receptacle	Board		Receptacle	Board
BR27	R644, -1	4.5″ w.	**BR27-3**	R630	2.73″ w.
BR27-1	R636	4.5″ w.	**BR27-4**	R644-2	2.73″ w.
BR27-2	R644, -1	4.25″ w.			

QUANTITY PRICES AVAILABLE ON REQUEST

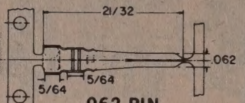
ETC® Connectors, Pins and Sockets



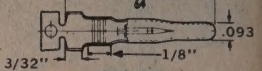
FREE-HANGING CONNECTORS



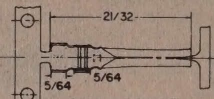
PANEL MOUNTED CONNECTORS



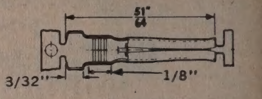
.062 PIN



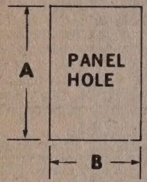
.093 PIN

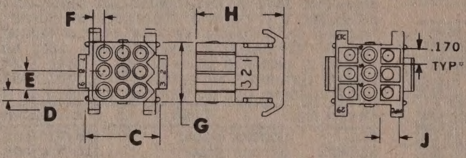


.062 SOCKET

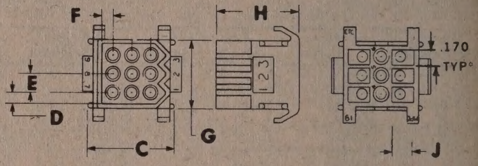


.093 SOCKET





SOCKET HOUSING



PIN HOUSING

GENERAL PURPOSE CONNECTORS—SOCKET HOUSING

ETC No.	Pin Dia., In.	No. of Cir-cuits	Max. Ratings per Circuit		Dimensions, Inches									Net per 100		Net per 1000		
			Amps	Volts	A	B	C	D	E	F	G	H	J	100-400	500-900	1000-2400	2500-4900	5000-9900*
SH-016	.062	1	5	250	.....	.....	.130	.....	.....	.....	.190	.785	.128	$ 6.20	$ 4.50	$ 33.85	$ 26.50	$ 22.55
SH-036	.062	3	5	250	.510	.265	.190	.097	.145	.095	.484	.785	.128	12.75	9.30	69.60	54.55	46.40
SH-066	.062	6	5	250	.365	.552	.343	.101	.145	.099	.530	.785	.128	17.85	12.95	97.35	76.25	64.90
SH-096	.062	9	5	250	.510	.552	.484	.097	.145	.097	.484	.785	.128	19.35	14.10	105.55	82.65	70.35
SH-126	.062	12	5	250	.655	.563	.489	.100	.145	.100	.634	.785	.128	20.40	14.85	111.20	87.10	74.15
SH-156	.062	15	5	250	.795	.563	.487	.095	.145	.098	.770	.785	.128	31.35	22.80	170.90	133.85	113.90
SH-366	.062	36	4	250	1.677	.707	1.505	.096	.165	.092	.687	.785	.128	50.25	36.55	274.05	214.65	182.70
SH-039M	.093	3	15	250	.840	.312	.245	.118	.198	.119	.672	1.010	.170	10.95	8.00	59.85	46.90	39.90
SH-069M	.093	6	11.5	250	.718	.600	.510	.118	.198	.118	.632	1.010	.203	19.35	14.05	105.50	82.65	70.35
SH-099M	.093	9	11.5	250	.828	.725	.815	.118	.198	.118	.632	1.010	.217	21.35	15.55	116.55	91.30	77.70
SH-129M	.093	12	10	250	1.050	.655	1.020	.118	.198	.118	.632	1.010	.217	23.10	16.80	126.00	98.70	84.00
SH-159M	.093	15	10	250	1.240	.655	1.210	.118	.198	.118	.632	1.010	.217	34.65	25.20	189.00	148.05	126.00

GENERAL PURPOSE CONNECTORS—PIN HOUSING

PH-016	.062	1	5	250	.....	.....	.288	.....	.....	.....	.260	.750	.128	$ 6.20	$ 4.50	$ 33.85	$ 26.50	$ 22.55
PH-036	.062	3	5	250	.610	.318	.286	.102	.145	.143	.580	.755	.128	12.75	9.30	69.60	54.55	46.40
PH-066	.062	6	5	250	.465	.615	.439	.109	.145	.104	.603	.755	.128	17.85	12.95	97.35	76.25	64.90
PH-096	.062	9	5	250	.615	.615	.590	.102	.145	.102	.590	.755	.128	19.35	14.10	105.55	82.65	70.35
PH-126	.062	12	5	250	.760	.614	.596	.105	.145	.105	.734	.755	.128	20.40	14.85	111.20	87.10	74.15
PH-156	.062	15	5	250	.895	.614	.590	.100	.145	.106	.866	.755	.128	31.35	22.80	170.90	133.85	113.90
PH-366	.062	36	4	250	1.670	.825	1.624	.103	.165	.106	.805	.755	.128	50.25	36.55	274.05	214.65	182.70
PH-039M	.093	3	15	250	.933	.375	.350	.126	.198	.171	.774	.962	.170	10.95	8.00	59.85	46.90	39.90
PH-069M	.093	6	11.5	250	.750	.695	.655	.126	.198	.125	.745	.962	.210	19.35	14.05	105.50	82.65	70.35
PH-099M	.093	9	11.5	250	.937	.725	.923	.122	.198	.124	.722	.962	.240	21.35	15.55	116.55	91.30	77.70
PH-129M	.093	12	10	250	1.155	.760	1.122	.122	.198	.124	.722	.962	.240	23.10	16.80	126.00	98.70	84.00
PH-159M	.093	15	10	250	1.343	.760	1.312	.122	.198	.124	.722	.962	.240	34.65	25.20	189.00	148.05	126.00

PIN AND SOCKET TERMINALS—STRIP

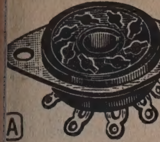
ETC Number*		Pin Dia., In.	Wire Range	Max. Wire Insulation Dia., In.	EP-3125K Strip Press Crimping Dies				Pieces per Reel	Net per 1000				
					Electrical Crimp		Insulation Crimp							
Pin	Socket				Nest	Indenter	Nest	Indenter		2.5M	5M	10M	25M	50M*
MPZ-126	MSZ-126	.062	30-22	.070/.030	GP-211-1	GP-211-2	GP-211-3	GP-211-4	15000	$13.45	$10.95	$9.10	$7.50	$6.50
APZ-126	ASZ-126	.062	22-18	.120/.060	GP-210-1	GP-210-2	GP-210-3	GP-210-4	10000	13.45	10.95	9.10	7.50	6.50
APZ-129	ASZ-129	.093	22-16	.130/.051	GP-201-1	GP-201-2	GP-203-3	GP-203-4	7000	....	11.70	9.75	8.10	7.00
BPZ-129	BSZ-129	.093	18-14	.150/.068	GP-201-1	GP-202-2	GP-201-3	GP-201-4	7000	....	11.70	9.75	8.10	7.00
PPZ-129	PSZ-129	.093	†	Two .115	GP-201-1	GP-202-2	GP-202-3	GP-201-4	4000	14.50	11.70	9.75	8.10	7.00

PIN AND SOCKET TERMINALS—LOOSE-PIECE

ETC Number*		Pin Dia., In.	Wire Range	Max. Wire Insulation Dia., In.	Net per 100		Net per 1000			Crimping Tool		Insertion Tool		Extraction Tool	
Pin	Socket				100-400	500-900	1000-2400	2500-4900	5000-9900	ETC Number	Net Each	ETC Number	Net Each	ETC Number	Net Each
MP-126	MS-126	.062	30-22	.070/.030	$4.45	$3.30	$24.15	$18.35	$14.90	RHT-4962	$69.00	IT-62	$7.50	ET-62	$5.75
AP-126	AS-126	.062	22-18	.120/.060	4.45	3.30	24.15	18.35	14.90	RHT-4962	69.00	IT-62	7.50	ET-62	5.75
AP-129	AS-129	.093	22-16	.130/.051	4.20	3.15	23.80	18.15	14.70	RHT-4960	69.00	....	.....	ET-93	5.75
BP-129	BS-129	.093	18-14	.150/.068	4.20	3.15	23.80	18.15	14.70	RHT-4965	69.00	....	.....	ET-93	5.75
PP-129	PS-129	.093	†	Two .115	4.20	3.15	23.80	18.15	14.70	RHT-4965	69.00	....	.....	ET-93	5.75

*Use GP-101 type press applicator for all .062″ dia. pins; GP-100-1 for all .093″ dia. pins, socket terminals; GP-100-2 for all .093″ dia. pins, pin terminals. †1 #18, 1 #16, or 2 #18. *Larger quantity prices on request.

BUNKER RAMO AMPHENOL Tube Sockets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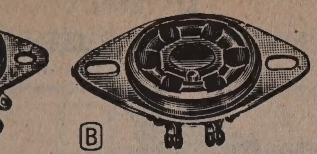
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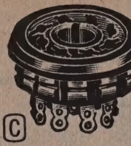
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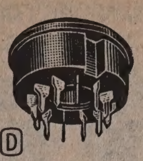
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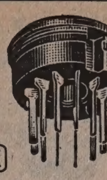
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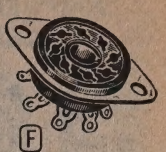

F

MIP MOLDED-IN-PLATE SOCKETS (FIG. A)

Steel mounting plate molded in black phenolic body; can't come oose. Mounts in 1³⁄₁₆" hole with two ⁵⁄₃₂" holes on 1½" centers.

Amphenol No. 77-	Contacts	Net Each, Lots of*				
		1-49	50-99	100-249	250-999	1M-2499
MIP4	4	$0.261	$0.219	$0.195	$0.151	$0.135
MIP4T*	4	.288	.24	.216	.167	.149
MIP4TM§	4	.392	.327	.292	.226	.205
MIP5	5	.286	.239	.218	.166	.147
MIP5TM§	5	#	#	#	#	#
MIP6	6	.313	.262	.235	.182	.163
MIP6T*	6	#	#	#	#	#
MIP6TM§	6	#	#	#	#	#
MIP7S	7 Small	.339	.284	.252	.195	.174
MIP7ST*	7 Small	#	#	#	#	#
MIP8	8 Octal	.262	.22	.196	.152	.136
MIP8T*	8 Octal	.303	.253	.227	.178	.156
MIP8TM§	8 Octal	.425	.356	.318	.248	.219
MIP9	9	.302	.252	.226	.175	.156
MIP9T*	9	#	#	#	#	#
MIP11	11	.31	.26	.232	.18	.16
MIP11T*	11	.402	.336	.302	.233	.207
MIP11TM§	11	.587	.49	.439	.34	.302
MIP12	12	.36	.30	.269	.208	.185
MIP12T*	12	#	#	#	#	#
MIP12TM§	12	.54	.449	.407	.313	.276
MIP20‡	20	.704	.59	.527	.41	.363

*Mica filled. ‡Fits 1⁵⁄₁₆" hole. §Mica-filled phenolic with silver-plated contacts and stainless steel mounting plate.

TYPE RS REPLACEMENT SOCKETS (FIG. B)

Same as Type "S" but with retainer rings in nickel-plated steel mounting rings. Replaces wafer types. Slotted holes in mounting ring fit 1½" to 1⁵⁵⁄₆₄" mtg. centers. Uses 6-32 screw. Black phenolic except 78-RS8T and -RS11T, mica filled phenolic.

Amphenol No. 78-	Contacts	Net Each, Lots of*				
		1-49	50-99	100-249	250-999	1M-2499
RS4	4	$0.307	$0.257	$0.23	$0.177	$0.158
RS5	5	.357	.299	.266	.207	.184
RS6	6	#	#	#	#	#
RS7S	7 Small	#	#	#	#	#
RS8	8 Octal	.335	.28	.25	.194	.173
RS8L	8 Loktal	#	#	#	#	#
RS8T	8 Octal	#	#	#	#	#
RS9	9	.398	.333	.299	.231	.205
RS11	11	.44	.368	.33	.255	.227
RS11T	11	#	#	#	#	#

TYPE S MOLDED SOCKETS (FIG. C)

Retainer ring mounted. Mounting hole dia., 1³⁄₁₆". Black phenolic.

S4	4	$0.27	$0.224	$0.20	$0.155	$0.138
S5	5	.286	.239	.213	.166	.147
S6	6	.313	.262	.234	.182	.162
S6T*	6	#	#	#	#	#
S7S	7 Small	.338	.282	.252	.195	.174
S8	8 Octal	.251	.21	.188	.144	.13
S8T*	8 Octal	.313	.262	.234	.182	.162
S8TM*§	8	#	#	#	#	#
S8L	8 Loktal	#	#	#	#	#
S9	9	.284	.237	.213	.165	.146
S11	11	.327	.274	.235	.19	.169
S11T*	11	.399	.333	.299	.231	.206
S11TM*§	11	#	#	#	#	#
S12	12	.365	.305	.273	.211	.187
S16	16	.466	.39	.349	.271	.24
A7P	7 Min.	#	#	#	#	#
A9P	9 Min.	.486	.407	.361	.28	.25

*Mica-filled. §Silver-plated contacts; stainless steel mtg. plate.

MINIATURE TYPE S SOCKETS

These low cost sockets can be used for vacuum tubes, relays, input or output cable connections and where standard size sockets will not fit. Wire-wrap termination types mount in ⅝" dia. round or D shaped panel cut out; friction type retainer ring included. PC board types mount thru ¹⁄₁₆" dia. holes in PC boards arranged in proper pin circle dia. Contact shoulders prevent socket from bottoming, allow clearance for air circulations and cleaning. For mica-filled phenolic dielectric add **T** to no. (78-S3S**T**W-0125).

PC TERMINATION

S3SW-0125	3	$0.164	$0.138	$0.123	$0.095	$0.086
S4SW-0125	4	.245	.205	.183	.142	.126
S5SW-0125	5	.251	.21	.189	.146	.13
S6SW-0125	6	.257	.216	.192	.149	.132

WIRE-WRAP TERMINATION

S3SW-0500*	3	$0.203	$0.169	$0.152	$0.118	$0.104
S4SW-0500*	4	.284	.237	.211	.164	.145
S3SW-0525†	3	.206	.172	.154	.119	.105
S4SW-0525†	4	.325	.272	.244	.189	.167

Contacts: *Standard, .016" thick; †heavy duty, .025" thick.

MIP MOLDED-IN-PLATE SOCKETS

Mounting plate molded in phenolic body; mica-filled phenolic also available add **T** to no. (e.g., 77-MIP8**T**W). Contacts of copper alloy. PC contacts are ⁵⁄₃₂" lg., with .125" tapered lead-in. Wire-wrap contacts are cadmium plated, and "tuning fork" shaped for low resistance; tails ¹⁄₁₆" w. x ½" lg.

PC TERMINATION (FIG. D)

Amphenol No. 77-	Contacts	Net Each, Lots of*				
		1-49	50-99	100-249	250-999	1M-2499
MIP8W-0125	8	$0.353	$0.294	$0.264	$0.205	$0.182
MIP9W-0125	9	.396	.331	.295	.228	.205
MIP11W-0125	11	.424	.356	.317	.246	.219
MIP12W-0125	12	.442	.37	.331	.255	.228
MIP20W-0125	20	.76	.637	.569	.44	.392

WIRE-WRAP TERMINATION (FIG. E)

MIP8W-0500*	8	$0.394	$0.33	$0.295	$0.228	$0.203
MIP9W-0500*	9	.437	.365	.327	.253	.225
MIP11W-0500*	11	.492	.412	.367	.285	.253
MIP12W-0500*	12	.511	.427	.297	.295	.263
MIP8W-0525†	8	.421	.352	.316	.243	.212
MIP9W-0525†	9	.455	.381	.341	.264	.235
MIP11W-0525†	11	.511	.428	.382	.295	.263
MIP12W-0525†	12	.531	.443	.396	.306	.273

Contacts: *Standard, .016" thick; †heavy duty, .025" thick.

TYPE S SOCKETS

Same as MIP but retaining ring style.

PC TERMINATION

Amphenol No. 78-	Contacts	Net Each, Lots of*				
		1-49	50-99	100-249	250-999	1M-2499
S8W-0125	8	$0.338	$0.282	$0.252	$0.195	$0.173
S9W-0125	9	.363	.304	.273	.211	.187
S11W-0125	11	.37	.309	.277	.216	.197
S12W-0125	12	.379	.317	.284	.22	.19
S16W-0125	16	.467	.39	.351	.271	.24

WIRE-WRAP TERMINATION

S8W-0500*	8	$0.386	$0.324	$0.289	$0.224	$0.199
S9W-0500*	9	.413	.346	.309	.241	.213
S11W-0500*	11	.421	.353	.316	.273	.244
S12W-0500*	12	.46	.384	.345	.266	.245
S8W-0525†	8	.39	.327	.292	.227	.201
S9W-0525†	9	.417	.349	.313	.243	.216
S11W-0525†	11	.425	.356	.318	.246	.22
S12W-0525†	12	.463	.388	.345	.27	.224

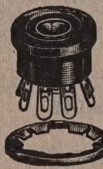
Contacts: *Standard, .016" thick; †heavy duty, .025" thick.

SERIES 88 COMPACT TUBE SOCKETS (FIG. F)

Black phenolic body; fit 1⅛" mounting holes on 1⁵⁄₁₆" centers.

Amphenol No.	Contacts	Net Each, Lots of*				
		1-49	50-99	100-249	250-999	1M-2499
88-8	8 Octal	$0.292	$0.244	$0.22	$0.17	$0.15
88-8T*	8 Octal	#	#	#	#	#
88-8TM*†	8 Octal	.363	.305	.273	.211	.188
88-8X	8 Loktal	.438	.366	.33	.254	.226

*Mica-filled. †Silver-plated contacts; stainless steel mtg. plate.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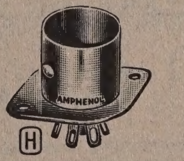

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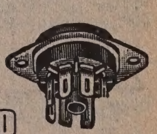

I

MINIATURE 7- AND 9-PIN SOCKETS

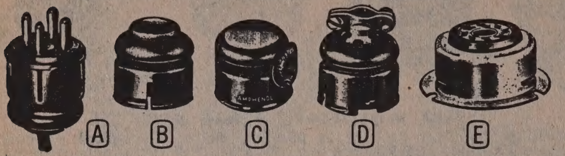
Fig. G Type: Retainer ring style fits D-shaped or round hole ⅝" dia. **Fig. H and I Types:** Shielded types mount above chassis; unshielded, below chassis. Min. 7-pin sockets fit ⅝" hole with ⅞" mtg. centers; 9-pin sockets fit ¾" hole, 1⅛" centers.

Amph. No.	Fig.	Contacts	Net Each, Lots of*				
			1-49	50-99	100-249	250-999	1M-2499
78-7P	G	7	$0.455	$0.381	$0.341	$0.264	$0.234
78-7PT*	G	7	#	#	#	#	#
147-500	I	7	.41	.341	.305	.237	.211
147-504	I	7	.337	.282	.252	.195	.174
147-505	I	7	.421	.353	.316	.245	.218
59-409	I	9	.444	.371	.333	.257	.23
59-410	I	9	.454	.381	.343	.267	.24
147-905†	H	7	.496	.414	.371	.288	.257
147-913†	H	7	.494	.413	.37	.287	.255
147-916†	H	7	.575	.48	.432	.334	.298
59-403†‡	H	9	#	#	#	#	#
59-406†	H	9	#	#	#	#	#
59-407†	H	9	#	#	#	#	#

*Mica-filled. †With .095" rivet holes. ‡Silver contacts.

★LARGER QUANTITY PRICES AVAILABLE ON REQUEST #PRICES AND DELIVERY AVAILABLE ON REQUEST

AMPHENOL CABLE CONNECTORS, TUBE AND RELAY SOCKETS



SHIELDED CABLE CONNECTORS (FIG. A)

Amphenol Number	Contacts*	Net Each, Lots of* 1-49	50-99	100-249	250-999	1M-2499
86-PM4	4 M	$0.514	$0.483	$0.421	$0.321	$0.29
86-PM5	5 M	.516	.485	.423	.323	.292
86-PM6	6 M	.536	.504	.44	.335	.303
86-PM7S	7 Sml. M	.57	.536	.467	.356	.322
86-PM8	8 Octal M	.54	.508	.443	.338	.305
86-PM9	9 Octal M	.55	.517	.451	.344	.311
86-PM11	11 Octal M	.556	.523	.456	.348	.314
78-PF4	4 F	.468	.44	.384	.293	.264
78-PF5	5 F	.486	.457	.399	.304	.275
78-PF6	6 F	.508	.478	.417	.318	.287
78-PF7S	7 Small F	.53	.498	.435	.331	.299
78-PF8	8 Octal F	.452	.425	.371	.283	.255
78-PF9	9 Octal F	.482	.453	.395	.301	.272
78-PF11	11 Octal F	.522	.491	.428	.326	.295

*F indicates female; M, male.

CP TYPE PLUGS

Mate with std. tube sockets. Panel mt. with retainer ring, 1 3/16″ dia. hole; attach to cable with 3-13, -24 cap. Suffix **T**, mica-filled.

86-CP4	4	$0.318	$0.266	$0.238	$0.184	$0.164
86-CP5	5	.321	.27	.24	.186	.166
86-CP6	6	.344	.288	.258	.199	.177
86-CP7S	7	.38	.316	.283	.22	.191
86-CP8	8	.347	.291	.26	.201	.179
86-CP8T	8	.376	.315	.283	.219	.194
86-CP9	9	.356	.298	.266	.208	.183
86-CP11	11	.363	.304	.273	.211	.187
86-CP11T	11	.359	.30	.269	.208	.201
86-CP12	12	.374	.313	.28	.217	.189
86-CP16	16	.375	.314	.281	.218	.186

CAPS

Fig. B and C Types: Rubber grommet types with side outlet for Fig. C style. Takes up to 7/16″ diameter cable. Japan black finish except 3-857, clear cadmium finish. **Fig. D Type:** With cable clamp outlet; takes up to ⅜″ diameter cable. Clear cadmium finish except 3-24, Japan black.

Amph. No.	Fig.	Net Each, Lots of* 1-49	50-99	100-249	250-999	1M-2499
3-10*	......	$0.126	$0.11	$0.10	$0.074	$0.067
3-12†	......	.14	.121	.109	.081	.074
3-13	B	.178	.158	.133	.101	.091
3-17	C	.263	.232	.205	.151	.138
3-24	D	.276	.246	.213	.161	.146
3-856	D	.319	.281	.244	.184	.165
3-857	B	#	#	#	#	#

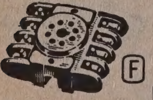
#Prices and delivery available on request.

RECESSING SHELLS

Fig. E Type: Aluminum shell mounts 1 3/16″ above or below chassis. Fits 1¾″ hole, uses three No. 6 screws. **61-61** is cadmium plated steel shell, recesses unit 1 3/16″; mounts in 1 7/16″ hole; two 5/32″ mounting holes on 1¾″ centers.

23-1S	E	$0.276	$0.234	$0.21	$0.167	$0.151
61-61	......	.182	.156	.143	.13‡	.117§

*Dust cap. †Metal outlet; takes up to 5/16″ dia. cable. ‡Lots 250–499. §Lots 500–999.



INDUSTRIAL TUBE SOCKETS AND RELAY SOCKETS

INDUSTRIAL TUBE SOCKETS

Heavy-duty octal sockets. Barrier-protected screw terminals. 1250 V rms at 5 amps.

Amph. No.	Fig.	Contacts	Mounting	Net Each, Lots of * 1-49	50-99	100-249	250-999	1M-2499
146-103	F	8	Top	$1.64	$1.45	$1.27	$0.94	$0.86
146-203	F	8	Bottom	1.64	1.45	1.27	.94	.86
146-104	F	8	Top	2.04	1.71	1.53	1.18	1.06
146-204	F	8	Bottom	2.04	1.71	1.53	1.18	1.06

With solderless reversible screw terminals. 600 V rms at 10 amps. May be gang mounted.

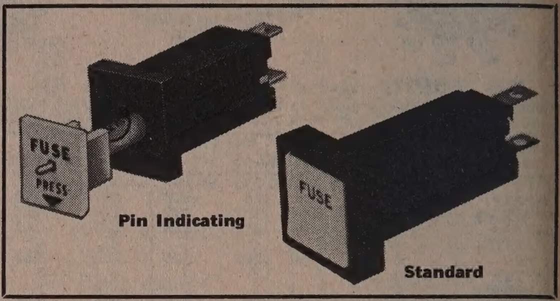
146-817	....	11	....	$3.53	$2.95	$2.65	$2.05	$1.83

RELAY SOCKETS

Amphenol No.	Contacts	Net Each, Lots of * 1-49	50-99	100-249	250-999	1M-2499
59-106	14	$0.60	$0.50	$0.45	$0.35	$0.31
59-133	14	.54	.49	.40	.36	.32
59-134	14	.53	.48	.39	.35	.31
59-470	20	7.92	6.62	5.93	4.60	4.10

★PRICES ON LARGER QUANTITIES AVAILABLE ON REQUEST

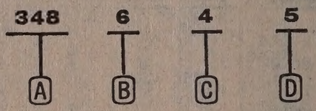
LITTELFUSE LOW PROFILE FUSEHOLDERS



Low profile fuseholders ideal for front or rear panel installation on computers, photocopying and business equipment, aircraft and marine equipment. No mounting hardware required, snap-on the terminals and snap-in the holder. Available for 3AG Standard or Pin Indicating fuses. Molded phenolic resin body with high temperature thermo-plastic color-coded caps. Quick-connect solder type terminals are one piece brass electrotin plated; available in two widths. Dielectric withstanding voltage between terminals and terminals to ground at room temperature and 90% R.H. exceeds 1500 volts. Withstands 10–55 Hz at 0.06″ double amplitude vibrations; withstands 60G for 11 millisec vibration. Rated 15 amps at any voltage to 250 volts. **Size:** 1 57/64″ lg. x 39/64″ sq. body; 27/32″ sq. x 9/32″ d. cap. Mounts in 0.625″ sq. hole in 1/32″–⅛″ thick chassis panel.

HOW TO ORDER LOW PROFILE FUSEHOLDERS

Six digit number is a coded description of fuseholder.



Ⓐ **Series Number: 348** for 3AG Standard fuses; **347** for Pin Indicating.

Ⓑ **Terminal Style: 6,** 3/16″ w. quick-connect and solder type; **8,** ¼″ w. quick-connect and solder type.

Ⓒ **Bezel Color:** Specify **1,** red; **2,** green; **3,** yellow; **4,** blue; **5,** white; **7,** black; **9,** gray.

Ⓓ **Cap Color:** Specify **1,** red; **2,** green; **3,** yellow; **4,** blue; **5,** white; **7,** black; **9,** gray.

NOTE: To order a cap assembly **only** for 3AG Standard fuses, use 348 series number and insert a **0** in the terminal style and bezel color locations (348 **0 0** 1). To order a cap assembly for 3AG Pin Indicating fuses, use 347 series number and insert a **0** in the terminal style and bezel color locations (347 **0 0** 1). To order a body assembly **only**, use 348 for 3AG fuses series number and insert a **0** in the cap color location (348 8 5 **0**). The body assembly only for 3AG Pin Indicating fuses is identical to 348 series.

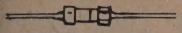
LOW PROFILE ASSEMBLIES AND CAPS— BULK 50 PER PACK

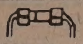
L.F. Number	Description	Net Each	Net per 100: 100	500
348--0	3AG Body Assembly	$0.42	$35.00	$28.00
34700-	3AG Pin Indicating Cap Assembly	.16	14.00	11.20
34800-	3AG Assembly Cap	.14	12.00	9.60

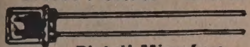
LOW PROFILE FUSEHOLDERS— INDIVIDUALLY CARDED

L.F. Number	Description	Net Each	Net per 100: 100	500
347 Series	3AG Pin Indicating	$0.74	$61.50	$49.20
348 Series	3AG Standard	.71	59.50	47.60

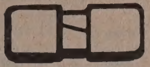
LITTELFUSE Quality Fuses

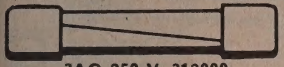

275000 Picofuse

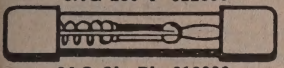

276000 Picofuse


Pigtail Microfuse

Plug-in Microfuse


1AG 301000


3AG 250 V 312000


3AG Slo-Blo 313000

SUBMINIATURE FUSES

A must for servicing European electronic equipment. **Size:** 20 mm x 5 mm (.8″ x .2″).

FAST ACTING (250 V) TYPE F

L.F. No.	Amp Rating	Net per 5	Net per 100: 100	Net per 100: 500
212.100	1/10	$2.13	$35.50	$28.40
212.125	1/8	2.13	35.50	28.40
212.200	2/10	1.71	28.50	22.80
212.250	1/4	1.71	28.50	22.80
212.300	3/10	1.71	28.50	22.80
212.400	4/10	1.71	28.50	22.80
212.500	1/2	1.71	28.50	22.80
212.600	6/10	1.71	28.50	22.80
212.700	7/10	1.71	28.50	22.80
212.800	8/10	1.71	28.50	22.80
212001	1	1.20	20.00	16.00
2121.25	1-1/4	1.20	20.00	16.00
21201.6	1-6/10	1.20	20.00	16.00
212002	2	1.20	20.00	16.00
21202.5	2-1/2	1.20	20.00	16.00
212003	3	1.41	23.50	18.80
212004	4	1.41	23.50	18.80
212005	5	1.41	23.50	18.80
212006	6	1.41	23.50	18.80

MEDIUM ACTING (250 V) TYPE M

Net per 5. . . . .$ 1.74
Net per 100: 100 . . . $29.00; 500 . . . 23.20

L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.
211.020	1/50	211.500	1/2	211003	3
211.031	1/32	211.600	6/10	211004	4
211.100	1/10	211.800	8/10	211005	5
211.200	2/10	211001	1		
211.250	1/4	2111.25	1-1/4		
211.300	3/10	21101.6	1-6/10		
211.400	4/10	211002	2		

SLO BLO FUSES (250 V) TYPE T

Net per 5. . . . .$ 1.74
Net per 100: 100 . . . $29.00; 500 . . . 23.20

213.100	1/10	213.600	6/10	21302.5	2-1/2
213.125	1/8	213.700	7/10	213003	3
213.200	2/10	213.800	8/10	213004	4
213.250	1/4	213001	1	213005	5
213.300	3/10	2131.25	1-1/4	213006	6
213.400	4/10	21301.6	1-6/10		
213.500	1/2	213002	2		

SUBMINIATURE (125 V MAX.)

L.F. No.	Amp Rating	Net per 5	Net per 100: 100	Net per 100: 500
271.500	1/2	$1.59	$26.50	$21.20
27101.5	1-1/2	1.32	22.00	17.60

SUBMINIATURE PICOFUSES (125 V)

Blow time 4 hours minimum at 100% of rating; 5 secs. max. at 200%. Amperage printed on body; can be color-coded at additional cost. Ceramic body only 7/32″ lg. x 5/64″ dia.; tin-coated copper leads .025″ dia. Order **275** (prefix) for axial leads 1 9/16″ long for diode clip or in-circuit mounting; **276** for radial leads 1 3/8″ long for use in printed circuits or receptacles. UL Recognized thru 10 amps.

275.062 thru 275.500—Net per 5 . . . **$ 2.73**
Net per 100: 100 . . . **$45.50;** 500 . . . **36.40**
275.750 thru 275010—Net per 5. . . . **2.40**
Net per 100: 100 . . . **$40.00;** 500 . . . **32.00**
275015—Net per 5. . . . . **2.85**
Net per 100: 100 . . . **$47.50;** 500 . . . **38.00**

L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.
275.062	1/16	275001	1	275004	4
275.125	1/8	27501.5	1-1/2	275005	5
275.250	1/4	275002	2	275007	7
275.375	3/8	27502.5	2-1/2	275010	10
275.500	1/2	275003	3	275015	15
275.750	3/4	27503.5	3-1/2		

MICROFUSE SUBMINIATURE FUSES

For PC and other min. space uses. Plug-in types use holder; pigtail types for soldering. Short circuit interrupting capacity 125 V, 10,000 amps DC. **Blow Specs:** 100%, 4-hour min.; 200%, 5-sec. max. **Size:** 1/4″ dia. x 11/32″ (fuse body). Plug-in, transparent cap type listed. Use prefix **272** for plug-in, metal cap; prefix **279** for pigtail, transparent cap; prefix **278** for pigtail, metal cap. UL Recognized.

Plug-In L.F. No.	Amp Rating	Net per 5	Net per 100: 100	Net per 100: 500
273.002	1/500	$5.64	$94.00	$75.20
273.005	1/200	5.64	94.00	75.20
273.010	1/100	5.64	94.00	75.20
273.015	1/64	5.64	94.00	75.20
273.031	1/32	5.64	94.00	75.20
273.050	1/20	4.71	78.50	62.80
273.062	1/16	4.71	78.50	62.80
273.100	1/10	4.71	78.50	62.80
273.125	1/8	4.71	78.50	62.80
273.200	2/10	4.71	78.50	62.80
273.250	1/4	4.71	78.50	62.80
273.300	3/10	4.71	78.50	62.80
273.400	4/10	4.71	78.50	62.80
273.500	1/2	4.71	78.50	62.80
273.600	6/10	4.71	78.50	62.80
273.700	7/10	4.71	78.50	62.80
273.750	3/4	4.71	78.50	62.80
273.800	8/10	4.71	78.50	62.80
273001	1	4.71	78.50	62.80
27301.5	1-1/2	4.71	78.50	62.80
273002	2	4.71	78.50	62.80
273003	3	4.71	78.50	62.80
273004	4	4.71	78.50	62.80
273005	5	4.71	78.50	62.80

HIGH RELIABILITY MICROFUSES

For zero defect programs. Hermetically sealed; gold-plated terminals for soldered or plug-in connections. Fuse rating identified on each fuse. Test data and traceability records are supplied and maintained. Rating 125 V, blow time same as 273 series; time/current characteristics certified to 1% AQL per MIL-Std-105, Inspection Level II. Short circuit interrupting capacity at 125 V, 10,000 amps DC. **Size:** Fuse cap and body, .290″ lg., leads for 262 "plug-in" series .170″. Pigtail on 268 series 1.0″. Use prefix **268** for pigtail type (e.g., **268.002**).

Prices on Request

Plug-In L.F. No.	Amp Rating	Plug-In L.F. No.	Amp Rating
262.002	1/500	262.400	4/10
262.005	1/200	262.500	1/2
262.010	1/100	262.600	6/10
262.015	1/64	262.700	7/10
262.031	1/32	262.750	3/4
262.050	1/20	262.800	8/10
262.062	1/16	262001	1
262.100	1/10	26201.5	1-1/2
262.125	1/8	262002	2
262.200	2/10	262003	3
262.250	1/4	262004	4
262.300	3/10	262005	5

HIGH RELIABILITY PICOFUSES

For soldering into circuits or insertion into diode type clips and mtgs. Fuses rated at 125 V or less and will interrupt short circuit currents to 300 amps at 125 VDC. Non-hygroscopic ceramic bodies. Withstands 5-lb. axial pull test. Blow time 4 hours min., 100% rating; 5 secs. max., 200% rating. Insulation resistance is 1 meg min. measured with 100 V supply. **Size:** Body 7/32″ lg., .078″ dia. Leads are .025″ dia., 1 9/16″ lg., gold-plated copper.

Prices on Request

L.F. No.	Amp Rating	L.F. No.	Amp Rating
265.125	1/8	265002	2
265.250	1/4	265003	3
265.375	3/8	265004	4
265.500	1/2	265005	5
265.750	3/4	265007	7
265001	1	265010	10
26501.5	1-1/2	265015	15

7AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 20-sec. max. Lg. 7/8″, dia. 1/4″.

L.F. No.	Amp Rating	Net per 5	Net per 100: 100	Net per 100: 500
303001	1	$0.48	$8.00	$6.40
30302.5	2-1/2	.48	8.00	6.40
303003	3	.48	8.00	6.40
303004	4	.48	8.00	6.40
303005	5	.36	6.00	4.80
303006	6	.36	6.00	4.80
303015	15	.36	6.00	4.80
303020	20	.36	6.00	4.80
303030	30	.36	6.00	4.80

1AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 20-sec. max. Lg. 7/8″, dia. 1/4″.

L.F. No.	Amp Rating	Net per 5	Net per 100: 100	Net per 100: 500
301001	1	$0.48	$8.00	$6.40
30101.5	1-1/2	.48	8.00	6.40
301002	2	.48	8.00	6.40
30102.5	2-1/2	.48	8.00	6.40
301003	3	.48	8.00	6.40
301005	5	.36	6.00	4.80
301006	6	.36	6.00	4.80
30107.5	7-1/2	.36	6.00	4.80
301010	10	.36	6.00	4.80
301015	15	.36	6.00	4.80
301020	20	.36	6.00	4.80
301025	25	.36	6.00	4.80
301030	30	.36	6.00	4.80

3AG FUSES (32 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 20-sec. max. Length 1 1/4″, dia. 1/4″.

311004	4	$0.48	$8.00	$6.40
311005	5	.36	6.00	4.80
311006	6	.36	6.00	4.80
31107.5	7-1/2	.36	6.00	4.80
311008	8	.36	6.00	4.80
311010	10	.36	6.00	4.80
311015	15	.36	6.00	4.80
311025	25	.36	6.00	4.80
311030	30	.36	6.00	4.80
311035	35	.48	8.00	6.40

3AG FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135% 1 hour max.; 200%, 10-sec. max. Length 1 1/4″, dia. 1/4″. UL Listed thru 8 amps.

312.010	1/100	$2.64	$44.00	$35.20
312.031	1/32	2.25	37.50	30.00
312.062	1/16	1.14	19.00	15.20
312.100	1/10	1.14	19.00	15.20
312.125	1/8	1.14	19.00	15.20
312.150	15/100	1.14	19.00	15.20
312.175	.175	1.14	19.00	15.20
312.187	3/16	1.14	19.00	15.20
312.200	2/10	1.14	19.00	15.20
312.250	1/4	.66	11.00	8.80
312.300	3/10	.66	11.00	8.80
312.375	3/8	.66	11.00	8.80
312.500	1/2	.66	11.00	8.80
312.600	6/10	.66	11.00	8.80
312.750	3/4	.66	11.00	8.80
312001	1	.48	8.00	6.40
3121.25	1-1/4	.48	8.00	6.40
31201.5	1-1/2	.48	8.00	6.40
31201.6	1-6/10	.48	8.00	6.40
312002	2	.48	8.00	6.40
31202.5	2-1/2	.48	8.00	6.40
312003	3	.48	8.00	6.40
312004	4	.57	9.50	7.60
312005	5	.57	9.50	7.60
312006	6	.57	9.50	7.60
312007	7	.57	9.50	7.60
312008	8	.81	13.50	10.80
312010	10	.81	13.50	10.80

3AG SLO BLO FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Length 1 1/4″, dia. 1/4″. UL Listed thru 7 amps.

313.010	1/100	$1.98	$33.00	$26.40
313.031	1/32	1.98	33.00	26.40
313.062	1/16	1.50	25.00	20.00
313.100	1/10	1.50	25.00	20.00
313.125	1/8	1.50	25.00	20.00
313.150	15/100	1.50	25.00	20.00
313.175	.175	1.50	25.00	20.00
313.187	3/16	1.50	25.00	20.00
313.200	2/10	1.50	25.00	20.00
313.250	1/4	1.50	25.00	20.00
313.300	3/10	1.50	25.00	20.00
313.375	3/8	1.50	25.00	20.00
313.400	4/10	1.50	25.00	20.00
313.500	1/2	1.50	25.00	20.00
313.600	6/10	1.50	25.00	20.00
313.700	7/10	1.50	25.00	20.00
313.750	3/4	1.50	25.00	20.00
313.800	8/10	1.50	25.00	20.00
313001	1	1.50	25.00	20.00
31301.2	1-2/10	1.41	23.50	18.80
3131.25	1-1/4	1.41	23.50	18.80
31301.5	1-1/2	1.41	23.50	18.80
31301.6	1-6/10	1.41	23.50	18.80
313002	2	1.41	23.50	18.80
31302.5	2-1/2	1.14	19.00	15.20
31302.8	2-8/10	1.14	19.00	15.20
313003	3	1.14	19.00	15.20
31303.2	3-2/10	1.14	19.00	15.20
313004	4	1.14	19.00	15.20
313005	5	1.14	19.00	15.20
3136.25	6-1/4	1.14	19.00	15.20
313007	7	1.14	19.00	15.20
313008	8	1.14	19.00	15.20
313010	10	1.14	19.00	15.20
313015	15	1.14	19.00	15.20
313020	20	1.14	19.00	15.20
313025	25	1.14	19.00	15.20
313030	30	1.14	19.00	15.20

LITTELFUSE Quality Fuses

3AG SLO BLO PIGTAIL FUSES (125 V)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 5-sec. min. Lg. 1¼", dia. ¼", 1½" pigtails. UL Listed thru 7 amps.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
315.010	1/100	$2.34	$39.00	$31.20
315.031	1/32	2.34	39.00	31.20
315.062	1/16	1.77	29.50	23.60
315.100	1/10	1.77	29.50	23.60
315.125	1/8	1.77	29.50	23.60
315.150	15/100	1.77	29.50	23.60
315.175	.175	1.77	29.50	23.60
315.187	3/16	1.77	29.50	23.60
315.200	2/10	1.77	29.50	23.60
315.250	1/4	1.77	29.50	23.60
315.300	3/10	1.77	29.50	23.60
315.375	3/8	1.77	29.50	23.60
315.400	4/10	1.77	29.50	23.60
315.500	1/2	1.77	29.50	23.60
315.600	6/10	1.77	29.50	23.60
315.700	7/10	1.77	29.50	23.60
315.750	3/4	1.77	29.50	23.60
315.800	8/10	1.77	29.50	23.60
315001	1	1.77	29.50	23.60
31501.2	1-2/10	1.68	28.00	22.40
3151.25	1-1/4	1.68	28.00	22.40
31501.5	1-1/2	1.68	28.00	22.40
31501.6	1-6/10	1.68	28.00	22.40
315002	2	1.68	28.00	22.40
31502.5	2-1/2	1.50	25.00	20.00
31502.8	2-8/10	1.50	25.00	20.00
315003	3	1.50	25.00	20.00
31503.2	3-2/10	1.50	25.00	20.00
315004	4	1.50	25.00	20.00
315005	5	1.50	25.00	20.00

3AG PIGTAIL FUSES (250 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. max. Length 1¼", dia. ¼", 1½" pigtails. UL Listed.

318.010	1/100	$3.12	$52.00	$41.60
318.031	1/32	2.88	48.00	38.40
318.062	1/16	1.77	29.50	23.60
318.100	1/10	1.77	29.50	23.60
318.125	1/8	1.77	29.50	23.60
318.150	15/100	1.77	29.50	23.60
318.175	.175	1.77	29.50	23.60
318.187	3/16	1.77	29.50	23.60
318.200	2/10	1.77	29.50	23.60
318.250	1/4	1.14	19.00	15.20
318.300	3/10	1.14	19.00	15.20
318.375	3/8	1.14	19.00	15.20
318.500	1/2	1.14	19.00	15.20
318.750	3/4	1.14	19.00	15.20
318001	1	.84	14.00	11.20
3181.25	1-1/4	.84	14.00	11.20
31801.5	1-1/2	.84	14.00	11.20
31801.6	1-6/10	.84	14.00	11.20
318002	2	.84	14.00	11.20
31802.5	2-1/2	.84	14.00	11.20
318003	3	.84	14.00	11.20
318004	4	.87	14.50	11.60
318005	5	.87	14.50	11.60
318006	6	.87	14.50	11.60
318007	7†	.87	14.50	11.60
318008	8†	1.14	19.00	15.20

3AG INDICATING FUSES (125 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max. Length 1¼", dia. ¼".

334.750	3/4‡	$2.82	$47.00	$37.60
334001	1‡	2.16	36.00	28.80
33401.5	1-1/2‡	2.16	36.00	28.80
334002	2‡	2.16	36.00	28.80
334003	3‡	2.16	36.00	28.80
334004	4‡	2.16	36.00	28.80
334005	5‡	2.16	36.00	28.80
334006	6*	3.09	51.50	41.20
334008	8*	3.09	51.50	41.20
334010	10*	3.09	51.50	41.20
334012	12*	3.09	51.50	41.20
334015	15*	3.09	51.50	41.20
334020	20*	3.09	51.50	41.20

*32 volt. †125 volt. ‡UL Listed.

3AB TINY MIGHTY (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 30-sec. max. Length 1¼", dia. ¼". UL Listed thru 15 A.

314.125	1/8	$0.93	$15.50	$12.40
314.250	1/4	.93	15.50	12.40
314.375	3/8	.93	15.50	12.40
314.500	1/2	.93	15.50	12.40
314.750	3/4	.93	15.50	12.40
314001	1	.93	15.50	12.40
314002	2	.93	15.50	12.40
314003	3	.93	15.50	12.40
314004	4	.93	15.50	12.40
314005	5	.81	13.50	10.80
314006	6	.81	13.50	10.80
314007	7	.81	13.50	10.80
314008	8	.81	13.50	10.80
314010	10	.81	13.50	10.80
314012	12	.93	15.50	12.40
314015	15	.93	15.50	12.40
314020	20	.93	15.50	12.40
314025	25	1.23	20.50	16.40
314030	30	1.23	20.50	16.40

3AB SLO BLO FUSES (250 V) CERAMIC

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%, 5-sec. min. Lg., 1¼", dia., ¼".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
323.010	1/100	$2.43	$40.50	$32.40
323.031	1/32	2.43	40.50	32.40
323.062	1/16	2.07	34.50	27.60
323.100	1/10	2.07	34.50	27.60
323.125	1/8	2.07	34.50	27.60
323.150	15/100	2.07	34.50	27.60
323.175	.175	2.07	34.50	27.60
323.187	3/16	2.07	34.50	27.60
323.200	2/10	2.07	34.50	27.60
323.250	1/4	2.07	34.50	27.60
323.300	3/10	2.07	34.50	27.60
323.375	3/8	2.07	34.50	27.60
323.400	4/10	2.07	34.50	27.60
323.500	1/2	2.07	34.50	27.60
323.600	6/10	2.07	34.50	27.60
323.700	7/10	2.07	34.50	27.60
323.750	3/4	2.07	34.50	27.60
323.800	8/10	2.07	34.50	27.60
323.001	1	2.07	34.50	27.60
32301.2	1-2/10	2.07	34.50	27.60
3231.25	1-1/4	2.07	34.50	27.60
32301.5	1-1/2	2.07	34.50	27.60
32301.6	1-6/10	2.07	34.50	27.60
323002	2	2.07	34.50	27.60
32302.8	2-8/10	1.50	25.00	20.00
323003	3	1.50	25.00	20.00
32303.2	3-2/10 *	1.50	25.00	20.00
323004	4*	1.50	25.00	20.00
323005	5*	1.50	25.00	20.00
3236.25	6-1/4*	1.50	25.00	20.00
323007	7*	1.50	25.00	20.00
323008	8†	1.50	25.00	20.00
323010	10†	1.50	25.00	20.00
323015	15†	1.50	25.00	20.00
323020	20†	1.50	25.00	20.00
323025	25†	1.50	25.00	20.00
323030	30†	1.50	25.00	20.00

*125 volt; †32 volt.

LIMITED CURRENT (250 V) TYPE C

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. max. UL Listed thru 6 amps.

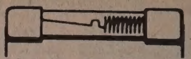
332.031	1/32	$2.16	$36.00	$28.80
332.062	1/16	1.50	25.00	20.00
332.125	1/8	1.14	19.00	15.20
332.187	3/16	1.14	19.00	15.20
332.250	1/4	.87	14.50	11.60
332.300	3/10	.87	14.50	11.60
332.375	3/8	.87	14.50	11.60
332.400	4/10	.87	14.50	11.60
332.500	1/2	.87	14.50	11.60
332.700	7/10	.87	14.50	11.60
332.750	3/4	.87	14.50	11.60
332001	1	.54	9.00	7.20
3321.25	1-1/4	.54	9.00	7.20
33201.5	1-1/2	.54	9.00	7.20
3321.75	1-3/4	.54	9.00	7.20
332002	2	.54	9.00	7.20
33202.5	2-1/2	.54	9.00	7.20
332003	3	.54	9.00	7.20
33203.5	3-1/2	.60	10.00	8.00
332004	4	.60	10.00	8.00
332005	5	.60	10.00	8.00
332006	6	.60	10.00	8.00
332007	7*	.60	10.00	8.00
332008	8*	.93	15.50	12.40
332010	10*	.93	15.50	12.40

*125 volt.

LC SLO BLO (125 V) TYPE N

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. UL Listed thru 5 amps.

333.010	1/100	$1.98	$33.00	$26.40
333.031	1/32	1.98	33.00	26.40
333.062	1/16	1.50	25.00	20.00
333.100	1/10	1.50	25.00	20.00
333.150	15/100	1.50	25.00	20.00
333.200	2/10	1.50	25.00	20.00
333.250	1/4	1.50	25.00	20.00
333.300	3/10	1.50	25.00	20.00
333.400	4/10	1.50	25.00	20.00
333.500	1/2	1.50	25.00	20.00
333.600	6/10	1.50	25.00	20.00
333.700	7/10	1.50	25.00	20.00
333.750	3/4	1.50	25.00	20.00
333.800	8/10	1.50	25.00	20.00
333001	1	1.50	25.00	20.00
3331.25	1-1/4	1.41	23.50	18.80
33301.6	1-6/10	1.41	23.50	18.80
3331.75	1-3/4	1.41	23.50	18.80
333002	2	1.41	23.50	18.80
33302.5	2-1/2	1.41	23.50	18.80
33302.8	2-8/10	1.41	23.50	18.80
333003	3	1.41	23.50	18.80
33303.2	3-2/10	1.41	23.50	18.80
33303.5	3-1/2	1.41	23.50	18.80
333004	4	1.41	23.50	18.80
333005	5	1.41	23.50	18.80
3336.25	6-1/4	1.41	23.50	18.80
333007	7	1.41	23.50	18.80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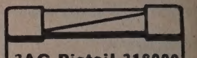
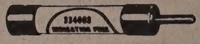
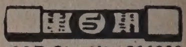
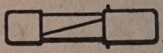

3AG Pigtail 318000



3AG Pin-Indicating 334000


3AB Steatite 314000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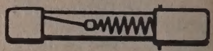
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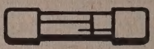
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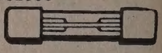

SFE Series

SFE AUTO FUSES (32 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 0–1 hour; 150%, 20 amps or less 0–15 sec., 30 amps 0–30 sec. Dia. ¼".

L.F. No.	Amp Rating	Lgth. In.	Net per 5	Net per 100	
				100	500
307004	4	⅝	$0.36	$6.00	$4.80
307006	6	¾	.36	6.00	4.80
30707.5	7-1/2	⅞	.36	6.00	4.80
307009	9	⅞	.36	6.00	4.80
307014	14	1 1/16	.36	6.00	4.80
307020	20	1¼	.36	6.00	4.80
307030	30	1 7/16	.36	6.00	4.80

8AG FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1", dia. ¼". UL Listed thru 5 amps.

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
362.125	1/8	$1.14	$19.00	$15.20
362.250	1/4	.66	11.00	8.80
362.375	3/8	.66	11.00	8.80
362.500	1/2	.66	11.00	8.80
362.750	3/4	.66	11.00	8.80
362001	1	.48	8.00	6.40
36201.5	1-1/2	.48	8.00	6.40
362002	2	.48	8.00	6.40
36202.5	2-1/2	.48	8.00	6.40
362003	3	.48	8.00	6.40
362005	5	.36	6.00	4.80
362006	6	.36	6.00	4.80
362008	8	.36	6.00	4.80
362010	10	.36	6.00	4.80
362012	12	.36	6.00	4.80
362015	15	.36	6.00	4.80
362020	20	.36	6.00	4.80
362025	25	.36	6.00	4.80
362030	30	.36	6.00	4.80

8AG INSTRUMENT FUSES

Blow Time: 100%, 4-hour min.; 200%, 5-sec. max. Length 1", dia. ¼".

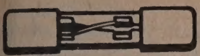
361.002	1/500	$7.14	$119.00	$95.20
361.005	1/200	3.09	51.50	41.20
361.010	1/100	2.64	44.00	35.20
361.031	1/32	2.25	37.50	30.00
361.062	1/16	1.50	25.00	20.00
361.100	1/10	1.14	19.00	15.20
361.125	1/8	1.14	19.00	15.20
361.187	3/16	1.14	19.00	15.20
361.200	2/10	1.14	19.00	15.20
361.250	1/4	.66	11.00	8.80
361.375	3/8	.66	11.00	8.80
361.400	4/10	.66	11.00	8.80
361.500	1/2	.66	11.00	8.80
361.750	3/4	.66	11.00	8.80
361001	1	.48	8.00	6.40
36101.5	1-1/2	.48	8.00	6.40
361002	2	.48	8.00	6.40
361003	3	.48	8.00	6.40
361004	4	.48	8.00	6.40
361005	5	.48	8.00	6.40

9AG FUSES (32 V OR LESS)

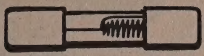
Blow Time: 100%, 4-hour min.; 125%, 0–1 hour; 200%, 0–25 seconds. Lg. 1 7/16", dia. ¼".

306050	50	$0.66	$11.00	$8.80

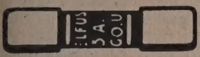
LITTELFUSE Quality Fuses



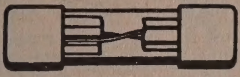
4AG Aircraft 411000



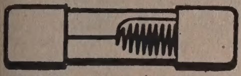
4AG Slo-Blo 413000



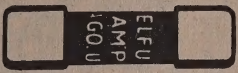
4AB Ceramic 414000



5AG Aircraft 511000



5AG Slo-Blo 513000



5AB Aircraft 514000

4AG QUICK-ACTING FUSES (250 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. max. Length 1¼", dia, 9⁄32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
412.062	1/16	$2.07	$34.50	$27.60
412.125	1/8	1.59	26.50	21.20
412.150	15/100	1.59	26.50	21.20
412.250	1/4	.75	12.50	10.00
412.500	1/2	.75	12.50	10.00
412001	1	.69	11.50	9.20
41201.5	1–1/2	.69	11.50	9.20
412002	2	.69	11.50	9.20
41202.5	2–1/2	.69	11.50	9.20
412003	3	.69	11.50	9.20
412005	5	.60	10.00	8.00
412008	8*	.60	10.00	8.00

*125 volt.

4AG SLO BLO AIRCRAFT FUSES (125 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. max. Length 1¼", dia. 9⁄32".

413.062	1/16	$1.89	$31.50	$25.20
413.100	1/10	1.89	31.50	25.20
413.125	1/8	1.89	31.50	25.20
413.150	15/100	1.89	31.50	25.20
413.200	2/10	1.89	31.50	25.20
413.250	1/4	1.89	31.50	25.20
413.300	3/10	1.89	31.50	25.20
413.400	4/10	1.89	31.50	25.20
413.500	1/2	1.89	31.50	25.20
413.600	6/10	1.89	31.50	25.20
413.750	3/4	1.89	31.50	25.20
413.800	8/10	1.89	31.50	25.20
413001	1	1.89	31.50	25.20
4131.25	1–1/4	1.89	31.50	25.20
41301.5	1–1/2	1.89	31.50	25.20
41301.6	1–6/10	1.89	31.50	25.20
413002	2	1.89	31.50	25.20
41302.5	2–1/2	1.50	25.00	20.00
413003	3	1.50	25.00	20.00
41303.2	3–2/10	1.50	25.00	20.00
413004	4	1.50	25.00	20.00
413005	5	1.50	25.00	20.00
4136.25	6–1/4	1.50	25.00	20.00
413008	8*	1.50	25.00	20.00
413010	10*	1.50	25.00	20.00
413015	15*	1.50	25.00	20.00
413020	20*	1.50	25.00	20.00
413025	25*	1.50	25.00	20.00
413030	30*	1.50	25.00	20.00

*32 volt.

4AG AIRCRAFT FUSES (32 V)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1¼", dia. 9⁄32".

411010	10	$0.60	$10.00	$8.00
411015	15	.60	10.00	8.00
411020	20	.60	10.00	8.00
411025	25	.60	10.00	8.00
411030	30	.60	10.00	8.00
411035	35	.69	11.50	9.20
411040	40	.69	11.50	9.20

4AB FUSES (250 V) CERAMIC

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 15-sec. max. Length 1¼", dia. 9⁄32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
414001	1	$1.50	$25.00	$20.00
414002	2	1.50	25.00	20.00
414003	3	1.50	25.00	20.00
414005	5	1.41	23.50	18.80
414006	6	1.41	23.50	18.80
414008	8	1.41	23.50	18.80
414010	10	1.41	23.50	18.80
414015	15	1.41	23.50	18.80
414020	20	1.41	23.50	18.80
414025	25*	1.41	23.50	18.80
414030	30*	1.41	23.50	18.80
414035	35†	1.50	25.00	20.00
414040	40†	1.50	25.00	20.00

*125 V; †32 V.

4AB SLO BLO FUSES (250 V) CERAMIC

Blow Time: 110%, 4-hr. max.; 135%, 1 hr. max.; 200%, 5-sec. min. Lg., 1½", dia. 9⁄32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
423.062	1/16	$2.16	$36.00	$28.80
423.100	1/10	2.16	36.00	28.80
423.125	1/8	2.16	36.00	28.80
423.150	15/100	2.16	36.00	28.80
423.200	2/10	2.16	36.00	28.80
423.250	1/4	2.16	36.00	28.80
423.300	3/10	2.16	36.00	28.80
423.400	4/10	2.16	36.00	28.80
423.500	1/2	2.16	36.00	28.80
423.600	6/10	2.16	36.00	28.80
423.750	3/4	2.16	36.00	28.80
423.800	8/10	2.16	36.00	28.80
423001	1	2.16	36.00	28.80
4231.25	1–1/4	2.16	36.00	28.80
42301.5	1–1/2	2.16	36.00	28.80
42301.6	1–6/10	2.16	36.00	28.80
423002	2	2.16	36.00	28.80
42302.5	2–1/2	1.59	26.50	21.20
423003	3	1.59	26.50	21.20
42303.2	3–2/10*	1.59	26.50	21.20
423004	4*	1.59	26.50	21.20
423005	5*	1.59	26.50	21.20
4236.25	6–1/4*	1.59	26.50	21.20
423008	8†	1.59	26.50	21.20
423010	10†	1.59	26.50	21.20
423015	15†	1.59	26.50	21.20
423020	20†	1.59	26.50	21.20
423025	25†	1.59	26.50	21.20
423030	30†	1.59	26.50	21.20

*125 volt; †32 volt.

5AG AIRCRAFT FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 20-sec. max. Length 1½", dia. 13⁄32".

L.F. No.	Amp Rating	Net per 5	Net per 100	
			100	500
511010	10	$0.87	$14.50	$11.60
511015	15	.87	14.50	11.60
511020	20	.87	14.50	11.60
511025	25	.87	14.50	11.60
511030	30	.87	14.50	11.60
511035	35	.87	14.50	11.60
511040	40	.87	14.50	11.60
511050	50	.87	14.50	11.60
511060	60	.87	14.50	11.60

5AG QUICK-ACTING FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10-sec. max. Length 1½", dia. 13⁄32".

512001	1	$0.87	$14.50	$11.60
512002	2	.87	14.50	11.60
512003	3	.87	14.50	11.60
512004	4	.87	14.50	11.60
512005	5	.87	14.50	11.60
512008	8*	.87	14.50	11.60

*125 volt.

5AG SLO BLO FUSES (250 V OR LESS)

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 5-sec. min. Length 1½", dia. 13⁄32".

513.500	1/2	$2.25	$37.50	$30.00
513001	1	2.25	37.50	30.00
513002	2	2.25	37.50	30.00
513003	3	1.89	31.50	25.20
513004	4	1.89	31.50	25.20
513005	5	1.89	31.50	25.20
513010	10	1.89	31.50	25.20
513015	15	1.89	31.50	25.20
513020	20	1.89	31.50	25.20
513025	25	2.07	34.50	27.60
513030	30	2.07	34.50	27.60

5AB AIRCRAFT FUSES

Blow Time: 110%, 4-hour min.; 135%, 1 hour max.; 200%, 30-sec. max. Length 1½", dia. 13⁄32". UL Listed thru 15 amps.
Net per 5........................$ 1.14
Net per 100: 100...**$19.00; **500... **15.20**

L.F. No.	Amp Rtg.	L.F. No.	Amp Rtg.
514001	1	514007	7
514002	2	514008	8
514003	3	514010	10
51403.5	3–1/2	514015	15
514005	5	514020	20
514006	6	514025	25
5146.25	6–1/4	514030	30

5AB SLO BLO FUSES (CERAMIC)

Blow Time: 110%, 4-hr. min.; 135%, 1 hr. max.; 200%; 5 sec. min. Lg. 1½", dia. 13⁄32". Voltage rating 250 V except as noted.
Net per 5........................$ 1.98
Net per 100: 100...**$33.00; **500... **26.40**

523.100	1/10	523003	3
523.150	15/100	52303.2	3–2/10
523.200	2/10	52303.5	3–1/2
523.300	3/10	523004	4
523.400	4/10	52304.5	4–1/2
523.500	1/2	523005	5
523.600	6/10	52305.6	5–6/10
523.800	8/10	5236.25	6–1/4
523001	1	523007	7
5231.12	1–1/8	523008	8
5231.25	1–1/4	523009	9
52301.4	1–4/10	523010	10
52301.6	1–6/10	523012	12*
52301.8	1–8/10	523015	15*
523002	2	523020	20†
5232.25	2–1/4	523025	25†
52302.5	2–1/2	523030	30†
52302.8	2–8/10		

*125 volt. †32 volt.

HIGH VOLTAGE FUSES

Designed for use in aircraft radio equipment, transmitting equipment, X-ray apparatus, high voltage rectifiers, etc. For use in circuits rated up to 20 kW DC or 30 kVA AC. Fuses are fiber enclosed with cadmium plated end caps; 612000–623000 caps are nickel plated. Two principles of arc suppression are employed: (1) Multi-break fuse wire which blows at each half inch of its length; (2) Ceramic baffles break the arc into several parts and quench it. **Blow Time:** 110%, 4-hour min.; 135%, 1 hour max.; 200%, 10 sec. max.

1000-VOLT (3" x 13⁄32")

L.F. No.	Amp Rating	L.F. No.	Amp Rating
621.375	3/8	621001	1
621.500	1/2	62101.5	1–1/2
621.750	3/4	621002	2

2500-VOLT (4½" x 13⁄32")

622.500	1/2	62201.5	1–1/2
622.750	3/4	622002	2
622001	1		

3000-VOLT (5½" x 13⁄32")

623.500	1/2	62301.5	1–1/2
623.750	3/4	623002	2
623001	1		

1000-VOLT (3" x 13⁄16")

701.062	1/16	701.750	3/4
701.125	1/8	701001	1
701.250	1/4	70101.5	1–1/2
701.375	3/8	701002	2
701.500	1/2		

5000-VOLT (5" x 13⁄16")

702.062	1/16	702001	1
702.125	1/8	70201.5	1–1/2
702.250	1/4	702002	2
702.375	3/8	70202.5	2–1/2
702.500	1/2	702003	3
702.750	3/4		

10,000-VOLT (10" x 13⁄16")

703.062	1/16	703.750	3/4
703.125	1/8	703001	1
703.250	1/4	70301.5	1–1/2
703.375	3/8	703002	2
703.500	1/2	703003	3

HIGH VOLTAGE FUSE PRICING

L.F. No.	Net Each	Net per 100	
		100	500
621000 Series	$0.40	$ 33.00	$ 26.40
622000 Series	.56	47.00	37.60
623000 Series	.82	68.00	54.40
701000 Series	.99	82.50	66.00
702000 Series	1.00	83.50	66.80
703000 Series	1.87	155.00	124.40

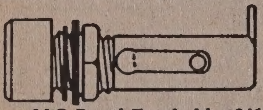
LITTELFUSE Fuses, Holders

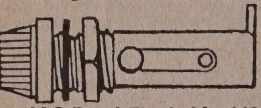
PLUG FUSES

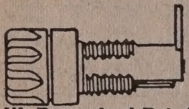
ECON TIME-DELAY PLUG FUSES

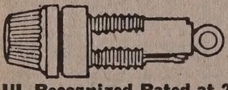
Dual-element plug type fuses provide additional protection against blowing during motor starting cycle. UL Recognized. For 125-volt operation.

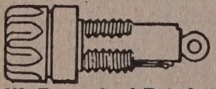
L.F. No.	Amp Rating	Net per Box of 4	Net per 100
TE3/10	3/10	$1.04	$23.00
TE4/10	4/10	1.04	23.00
TE8/10	8/10	1.04	23.00
TE1	1	1.04	23.00
TE1-1/8	1-1/8	1.04	23.00
TE1-1/4	1-1/4	1.04	23.00
TE1-4/10	1-4/10	1.04	23.00
TE1-6/10	1-6/10	1.04	23.00
TE1-8/10	1-8/10	1.04	23.00
TE2	2	1.04	23.00
TE2-1/4	2-1/4	1.04	23.00
TE2-1/2	2-1/2	1.04	23.00
TE3-2/10	3-2/10	1.04	23.00
TE3-1/2	3-1/2	1.04	23.00
TE4	4	1.04	23.00
TE4-1/2	4-1/2	1.04	23.00
TE5	5	1.04	23.00
TE5-6/10	5-6/10	1.04	23.00
TE6-1/4	6-1/4	1.04	23.00
TE7	7	1.04	23.00
TE8	8	1.04	23.00
TE9	9	1.04	23.00
TE10	10	1.04	23.00
TE12	12	1.04	23.00
TE14	14	1.04	23.00
TE15	15	.56	12.00
TE20	20	.56	12.00
TE25	25	.56	12.00
TE30	30	.56	12.00

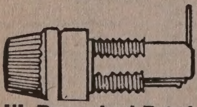

3AG Panel Fuseholder 341001
UL Recognized Rated at 15 A/250 V

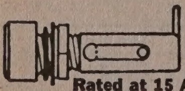

3AG Panel Fuseholder 342001
UL Recognized Rated at 15 A/250 V

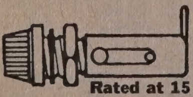

3AG Panel Fuseholder 342004
UL Recognized Rated at 20 A/250 V

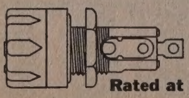

3AG Panel Fuseholder 342012
UL Recognized Rated at 20 A/250 V


3AG Panel Fuseholder 342014
UL Recognized Rated at 20 A/250 V


3AG Panel Fuseholder 342022
UL Recognized Rated at 20 A/250 V


8AG Panel Fuseholder 371001
Rated at 15 A/250 V


8AG Panel Fuseholder 372001
Rated at 15 A/250 V


4AG Panel Fuseholder 442006
Rated at 20 A/250 V

CLEARSITE ONE-TIME PLUG HOUSE FUSES

For 125 VAC or DC. UL Listed. Use with standard Edison base fuse holders.

L.F. No.	Amp Rating	Net per Box of 5	Net per 100
CP10	10	$0.65	$11.00
CP15	15	.60	10.00
CP20	20	.60	10.00
CP25	25	.60	10.00
CP30	30	.60	10.00

FUSE HOLDERS, RETAINERS

MICROFUSE HOLDERS

For mounting of 273000 Series Microfuse. Type 281006 is front panel mounting; 281005 ideal PC board mtg.; 284000 Series front panel mtg. with indicator bulb.

L.F. No.	Voltage Range	Net Each	Net per 100: 100	Net per 100: 500
280021	....	$1.08	$ 90.00	$ 72.00
281001	....	.32	26.50	21.20
281002	....	.89	74.50	59.60
281005	....	.29	24.00	19.20
281006	....	.85	70.50	56.40
281007	....	.29	24.00	19.20
282001	....	1.44	120.00	96.00
282002	....	1.36	113.00	90.40
282007	....	2.49	207.50	166.00
282008	....	2.44	203.50	162.80
284004	2½–7	2.29	191.00	152.80
284005	7–16	2.29	191.00	152.80
284006	16–32	2.29	191.00	152.80
284003	100–125	1.70	141.50	113.20

MICROFUSE INDICATING HOLDERS—RF SHIELDED

284121	2½–7 V	$8.60	$716.50	$573.20
284122	7–16 V	8.60	716.50	573.20
284107	12–22 V	8.60	716.50	573.20
284108	23–33 V	9.70	808.00	646.40
284109	34–45 V	9.70	808.00	646.40
284110	46–60 V	9.70	808.00	646.40
284111	61–80 V	9.70	808.00	646.40
284112	81–90 V	9.70	808.00	646.40
284113	90–125 V	6.66	555.00	444.00

3AG PANEL FUSEHOLDERS

L.F. No.	Type	Net Each	Net per 100: 100	Net per 100: 500
340255A	R/F shld'd (FHN26G2)	$5.66	$472.00	$377.60
340256A	R/F shld'd (FHN20G)	5.66	472.00	377.60
340276A	Hi V knob	.79	66.00	52.80
341001A	Screw	.67	56.00	44.80
342001A	Finger	.67	56.00	44.80
342004A	Miniature	.47	39.00	31.20
342005A	Miniature*	.65	54.50	43.60
342006	Watertight	2.75	229.00	183.20
342012A	Miniature	.47	39.00	31.20
342013A	Miniature*	.56	47.00	37.60
342014A	Miniature	.47	39.00	31.20
342015A	Miniature*	.56	47.00	37.60
342021A	FHN 26W	3.39	282.50	226.00
342022A	Miniature	.47	39.00	31.20
342023A	Miniature*	.65	54.50	43.60
342024A	FHN 26G2	1.40	116.50	93.20
342025A	FHN 20G	1.45	120.50	96.40

*Dust-proof.

8AG PANEL FUSEHOLDERS

370011	R/F shld'd	$6.67	$556.00	$444.80
371001A	Screw	.67	55.60	44.80
372001A	Finger	.67	55.60	44.80
372003	FHN31G2	2.81	234.00	187.20

4AG PANEL FUSEHOLDERS

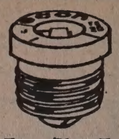
442006	Watertight	$2.75	$229.00	$183.20
442008A	Watertight	3.39	282.50	226.00

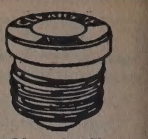
5AG PANEL FUSEHOLDERS

571006	Non-watertight	$1.58	$131.50	$105.20
571004	Watertight	1.55	129.50	103.60

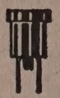
3AG QUICK-CONNECT FUSEHOLDERS

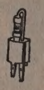
L.F. No.	Description	Net Each	Net per 100: 100	Net per 100: 500
342028A	3/16″ terminals	$0.55	$45.50	$36.40
342038A	3/16″ terminals	.55	45.50	36.40
342048A	3/16″ terminals	.55	45.50	36.40
342058A	3/16″ terminals	.55	45.50	36.40

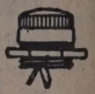

Econ Plug Fuse

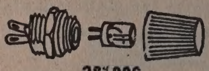

Clearsite Fuse

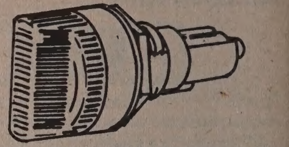
Microfuse Holders

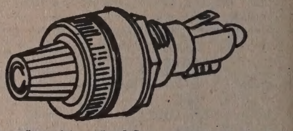

281001

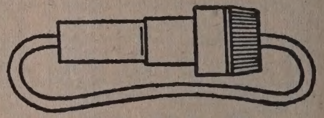

281005


284000 Indicating


281006


Indicating Fuseholder 344(000) Series


Indicating Fuseholder 344(400) Series


Bakelite In-Line Fuse Holder Assembled with Lead

3AG INDICATING FUSEHOLDERS 344(000) SERIES

L.F. No.	Voltage	Net Each	Net per 100: 100	Net per 100: 500
344006A	2½–7 V	$3.28	$273.50	$218.8
344012A	7–16 V	3.28	273.50	218.8
344024A	16–32 V	3.28	273.50	218.8
344125A	100–125 V	2.03	169.00	135.2
344250A	200–250 V	2.03	169.00	135.2

3AG INDICATING FUSEHOLDERS 344(400) SERIES

Same as 344(000) Series but with differen lens style.

L.F. No.	Voltage	Net Each	Net per 100: 100	Net per 100: 500
344401A	2½–7 V	$3.28	$273.50	$218.8
344402A	7–16 V	3.28	273.50	218.8
344403A	16–32 V	3.28	273.50	218.8
344404A	100–125 V	2.03	169.00	135.2
344405A	200–250 V	2.03	169.00	135.2

UNIVERSAL FUSE RETAINER

Comes with three different length spring for fuse sizes 7½ SFE thru 3AG. **L.F. No. 150145**—Net Each........ **47**
Net 100..**$39.00**; Lots 500, Net 100. **$31.2**

BAKELITE® IN-LINE FUSE HOLDERS ASSEMBLED WITH 19″ LEAD

L.F. No.	Use with Fuses	Net Ea., Lots of 5	Net per 100: 100	Net per 100: 500
155004A	SFE 4, 1AG	$0.47	$39.00	$31.2
155006A	SFE 6	.47	39.00	31.2
15507.5A	SFE 7½	.47	39.00	31.2
155009A	SFE 9, 7AG	.47	39.00	31.2
155014A	SFE 14	.47	39.00	31.2
155020A	SFE 20, 3AG	.47	39.00	31.2

®Bakelite Corp.

Buss® Military Fuses and Holders

BUSS FUSES LISTED UNDER MIL-F-15160D

Suffix **S** on Military designation (e.g., F01A250V1/500A-**S**) indicates silver plating; if not required, omit (e.g., F01A250V1/500A).

Military Type Designation	Nearest BUSS Equiv.	Price Each
F01A250V1/500A-S	AGX1/500	$1.43*
F01A250V1/200A-S	AGX1/200	.62*
F01A250V1/100A-S	AGX1/100	.53*
F01A250V1/32A-S	AGX1/32	.45*
F01A250V1/16A-S	AGX1/16	.30*
F01A250V1/8A-S	AGX1/8	.23*
F01A250V1/4A-S	AGX1/4	.14*
F01A250V3/8A-S	AGX3/8	.14*
F01A250V1/2A-S	AGX1/2	.14*
F01A125V3/4A-S	AGX3/4	.14*
F01A125V1A-S	AGX1	.096*
F01A125V1½A-S	AGX1½	.096*
F01A125V2A-S	AGX2	.096*
F02A250V1/100A-S	AGC1/100	.53*
F02A250V1/32A-S	AGC1/32	.45*
F02A250V1/16A-S	AGC1/16	.23*
F02A250V1/8A-S	AGC1/8	.23*
F02A250V1/4A-S	AGC1/4	.14*
F02A250V3/8A-S	AGC3/8	.14*
F02A250V1/2A-S	AGC1/2	.14*
F02A250V3/4A-S	AGC3/4	.14*
F02A250V1A-S	AGC1	.096*
F02A250V1½A-S	AGC1½	.096*
F02A250V2A-S	AGC2	.096*
F02A250V3A-S	AGC3	.096*
F02A250V4A-S	MTH4	.11*
F02A250V5A-S	MTH5	.11*
F02A250V6A-S	MTH6	.11*
F02A32V10A-S	AGC10	.075*
F02A32V15A-S	AGC15	.075*
F02A32V20A-S	AGC20	.075*
F02B250V1/100A-S	MDL1/100	.40*
F02B250V1/32A-S	MDL1/32	.40*
F02B250V1/16A-S	MDL1/16	.30*
F02B250V1/8A-S	MDL1/8	.30*
F02B250V1/4A-S	MDL1/4	.30*
F02B250V3/8A-S	MDL3/8	.30*
F02B250V1/2A-S	MDL1/2	.30*
F02B250V3/4A-S	MDL3/4	.30*
F02B250V1A-S	MDL1	.30*
F02B250V1½A-S	MDX1½	.32*
F02B250V2A-S	MDX2	.32*
F02B125V3A-S	MDX3	.23*
F02B125V5A-S	MDX5	.23*
F02B32V8A-S	MDL8	.23*
F02B32V10A-S	MDL10	.23*
F02B32V15A-S	MDL15	.23*
F02B32V20A-S	MDL20	.23*
F03A250V1A-S	ABC1	.19*
F03A250V3A-S	ABC3	.19*
F03A250V5A-S	ABC5	.16*
F03A250V8A-S	ABC8	.16*
F03A250V10A-S	ABC10	.16*
F03A250V12A-S	ABC12	.19*
F03A250V15A-S	ABC15	.19*
F03A125V20A-S	ABC20	.19*
F03A125V30A-S	ABC30	.25*
F03B250V1/100A-S	MDA1/100	.49*
F03B250V1/32A-S	MDA1/32	.49*
F03B250V1/16A-S	MDA1/16	.41*
F03B250V1/8A-S	MDA1/8	.41*
F03B250V15/100A-S	MDA15/100	.41*
F03B250V3/16A-S	MDA3/16	.41*
F03B250V1/4A-S	MDA1/4	.41*
F03B250V3/8A-S	MDA3/8	.41*
F03B250V1/2A-S	MDA1/2	$0.41*
F03B250V3/4A-S	MDA3/4	.41*
F03B250V1A-S	MDA1	.41*
F03B125V3A-S	MDA3	.30*
F03B125V5A-S	MDA5	.30*
F03B125V8A-S	MDA8	.30*
F03B125V10A-S	MDA10	.30*
F03B125V12A-S	MDA12	.30*
F03B125V15A-S	MDA15	.30*
F03B125V20A-S	MDA20	.30*
F03B125V30A-S	MDA30	.30*
F05A32V10A-S	AGS10	.12*
F05A32V15A-S	AGS15	.12*
F05A32V20A-S	AGS20	.12*
F05A32V25A-S	AGS25	.12*
F05A32V30A-S	AGS30	.12*
F05B32V10A-S	MDM10	.30*
F05B32V15A-S	MDM15	.30*
F05B32V20A-S	MDM20	.30*
F05B32V25A-S	MDM25	.30*
F05B32V30A-S	MDM30	.30*
F06A250V1A-S	ABS1	.30*
F06A250V2A-S	ABS2	.30*
F06A250V3A-S	ABS3	.30*
F06A250V5A-S	ABS5	.28*
F06A250V10A-S	ABS10	.28*
F06A250V15A-S	ABS15	.28*
F07A250V1A-S	AGU1	.17*
F07A250V2A-S	AGU2	.17*
F07A250V3A-S	AGU3	.17*
F07A32V5A-S	AGU5	.17*
F07A32V10A-S	AGU10	.17*
F07A32V15A-S	AGU15	.17*
F07A32V20A-S	AGU20	.17*
F07A32V30A-S	AGU30	.17*
F07B125V1A-S	MDR1	.45*
F07B125V2A-S	MDR2	.45*
F07B125V3A-S	MDR3	.38*
F07B32V5A-S	MDR5	.38*
F07B32V10A-S	MDR10	.38*
F07B32V15A-S	MDR15	.38*
F07B32V20A-S	MDR20	.38*
F07B32V30A-S	MDR30	.41*
F09A250V1A-S	BAN1	.17
F09A250V2A-S	BAN2	.17
F09A250V3A-S	BAN3	.17
F09A250V3½A-S	BAN3½	.17
F09A250V5A-S	BAN5	.17
F09A250V6A-S	BAN6	.17
F09A250V6¼A-S	BAN6¼	.17
F09A250V7A-S	BAN7	.17
F09A250V8A-S	BAN8	.17
F09A250V10A-S	BAN10	.17
F09A250V15A-S	BAN15	.17
F09A250V20A-S	BAN20	.17
F09A250V25A-S	BAN25	.17
F09A250V30A-S	BAN30	.17
F09B250V1/10A-S	FNM1/10	.40
F09B250V15/100A-S	FNM15/100	.40
F09B250V2/10A-S	FNM2/10	.40
F09B250V3/10A-S	FNM3/10	.40
F09B250V4/10A-S	FNM4/10	.40
F09B250V1/2A-S	FNM1/2	.40
F09B250V6/10A-S	FNM6/10	.40
F09B250V8/10A-S	FNM8/10	.40
F09B250V1A-S	FNM1	$0.40
F09B250V1¼A-S	FNM1¼	.40
F09B250V1-6/10A-S	FNM1-6/10	.40
F09B250V2A-S	FNM2	.40
F09B250V2½A-S	FNM2½	.40
F09B250V3-2/10A-S	FNM3-2/10	.40
F09B250V4A-S	FNM4	.40
F09B250V5A-S	FNM5	.40
F09B250V6¼A-S	FNM6¼	.40
F09B250V8A-S	FNM8	.40
F09B250V10A-S	FNM10	.40
F09B125V15A-S	FNM15	.40
F09B32V20A-S	FNM20	.40
F09B32V25A-S	FNM25	.40
F09B32V30A-S	FNM30	.40
F15A250V1A-S	NFA1	.19
F15A250V3A-S	NFA3	.19
F15A250V6A-S	NFA6	.19
F15A250V10A-S	NFA10	.19
F15A250V15A-S	NFA15	.19
F15A250V20A-S	NFA20	.19
F15A250V25A-S	NFA25	.19
F15A250V30A-S	NFA30	.19
F15B250V1A-S	FRN1	.54
F15B250V1-6/10A-S	FRN1-6/10	.54
F15B250V2A-S	FRN2	.54
F15B250V2½A-S	FRN2½	.54
F15B250V3-2/10A-S	FRN3-2/10	.54
F15B250V4A-S	FRN4	.54
F15B250V5A-S	FRN5	.54
F15B250V6¼A-S	FRN6¼	.54
F15B250V8A-S	FRN8	.54
F15B250V10A-S	FRN10	.51
F15B250V12A-S	FRN12	.51
F15B250V15A-S	FRN15	.51
F15B250V20A-S	FRN20	.51
F15B250V25A-S	FRN25	.51
F15B250V30A-S	FRN30	.51
F60C500V1/8A-S	KLM1/8	.90
F60C500V1/4A-S	KLM1/4	.90
F60C500V3/8A-S	KLM3/8	.90
F60C500V1/2A-S	KLM1/2	.90
F60C500V3/4A-S	KLM3/4	.90
F60C500V1A-S	KLM1	.90
F60C500V3A-S	KLM3	.90
F60C500V6A-S	KLM6	.90
F60C500V8A-S	KLM8	.90
F60C500V10A-S	KLM10	.90
F60C500V15A-S	KLM15	.90
F60C500V20A-S	KLM20	.90
F60C500V25A-S	KLM25	.90
F60C500V30A-S	KLM30	.90

*Add **$9.00** Stamping Charge and a minimum **$6.00** per thousand Silver Plating Charge per item.

FUSE CLIPS LISTED MIL-F-21346 DATED 24 APRIL 1958

FC21AN	5682-01	$0.066
FC21BN	5674-01	.11
FC21CN	5960-07	.17
FC22AN	5678-02	.11
FC22CN	5664	.26

INSTRUMENT TYPE FUSES LISTED UNDER MIL-F-23419A, DATED 19 DEC. 1966

Part No.	Designation	BUSS Equivalent	Each
M23419/1-001	FM01 1/200A	GMU 1/200A	$0.95
M23419/1-002	FM01 1/100A	GMU 1/100A	.95
M23419/1-003	FM01 1/64A	GMU 1/64A	.95
M23419/1-004	FM01 1/32A	GMU 1/32A	.95
M23419/1-005	FM01 1/16A	GMU 1/16A	.95
M23419/1-006	FM01 1/10A	GMU 1/10A	.73
M23419/1-007	FM01 1/8A	GMU 1/8A	.73
M23419/1-008	FM01 2/10A	GMU 2/10A	.73
M23419/1-009	FM01 1/4A	GMU 1/4A	.73
M23419/1-010	FM01 3/10A	GMU 3/10A	.73
M23419/1-011	FM01 4/10A	GMU 4/10A	.73
M23419/1-012	FM01 1/2A	GMU 1/2A	.73
M23419/1-013	FM01 6/10A	GMU 6/10A	.73
M23419/1-014	FM01 3/4A	GMU 3/4A	.73
M23419/1-015	FM01 1A	GMU 1A	.73
M23419/1-016	FM01 1½A	GMU 1½A	.73
M23419/1-017	FM01 2A	GMU 2A	.73
M23419/1-018	FM01 3A	GMU 3A	.73
M23419/1-019	FM01 4A	GMU 4A	.73
M23419/1-020	FM01 5A	GMU 5A	.73

FM03 listed under **MIL-F-23419A,** 1/100 to 25 amps.

OTHER BUSS MIL FUSES & BLOCKS

Fuses to MIL-F-15160D also available in styles:

F10A
F11A
F14A
F14B
F15B
F16A
F16B
F19A
F19B
F20A
F20B
F21A
F21B
F22A
F22B
F27A
F28A
F29A
F30A
F36A
F36B
F37A
F37B
F38A
F39A
F39B
F40A
F40B
F50A
F61C
F62C
F63C
F64C
F65C
F66C

Fuse Blocks to MIL-F-21346, Aircraft Limiters to MIL-F-5372C and Aircraft Blocks to MIL-F-5372C are also available.

BUSS FUSEHOLDERS LISTED UNDER MIL-F-19207B*

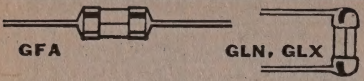
Extractor post, blown fuse indicating and non-indicating types.

BUSS and Military Type Designation	Electrical Rating	Price Each, Lots of 1-99	Price Each, Lots of 100-499	Price Each, Lots of 500-999
FHL10U	30A, 90–250V	$4.10	$3.56†	....
FHL11U	30A, 90–250V	3.30	2.75†	....
FHL12U	30A, 90–500V	3.75	3.25†	....
FHL17GI	20A, 90–250V	2.12	1.83	$1.52
FHL18GI-1	20A, 12–22V	3.24	2.79	2.33
FHL18GI-2	20A, 23–33V	3.24	2.79	2.33
FHL18GI-3	20A, 34–45V	3.24	2.79	2.33
FHL18GI-4	20A, 46–60V	3.24	2.79	2.33
FHL18GI-5	20A, 61–80V	3.24	2.79	2.33
FHL18GI-6	20A, 81–90V	3.24	2.79	2.33
FHL18GI-7	20A, 2.5–4V	3.24	2.79	2.33
FHL18GI-8	20A, 5–7V	3.24	2.79	2.33
FHL18GI-9	20A, 8–12V	3.24	2.79	2.33
FHN19G	15A, 250V	1.02	.88	.74
FHL22W	20A, 250V	1.46	1.26	1.06
FHN23W	30A, 250V	1.74	1.49	1.25
FHN26GI	30A, 250V	.80	.69	.57
FHL29G-1	30A, 12–22V	5.38	4.68†	....
FHL29G-2	30A, 23–33V	5.38	4.68†	....
FHL29G-3	30A, 34–45V	5.38	4.68†	....
FHL29G-4	30A, 46–60V	5.38	4.68†	....
FHL29G-5	30A, 61–80V	5.38	4.68†	....
FHL29G-6	30A, 81–90V	5.38	4.68†	....
FHL30G-1	30A, 12–22V	5.55	4.63†	....
FHL30G-2	30A, 23–33V	5.55	4.63†	....
FHL30G-3	30A, 34–45V	5.55	4.63†	....
FHL30G-4	30A, 46–60V	5.55	4.63†	....
FHL30G-5	30A, 61–80V	5.55	4.63†	....
FHL30G-6	30A, 81–90V	5.55	4.63†	....
FHN31GI	5A, 250V	1.00	.85	.68
FHN42W	5A, 125V	1.07	.89	.71

†Lots 100 Up. *Dated 31 Aug. 1966

Buss® and Fusetron® Fuses, Holders

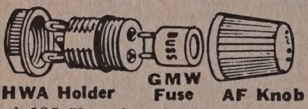
TRON® SUBMINIATURE PIG-TAIL FUSES



Glass-tube construction with 1½" leads of #24 tinned copper for 1/100–5 amp ratings, #18 tinned copper for 7–15 amp ratings. Hermetically sealed. Color coded to indicate amp ratings. For circuits with fault current of 50 amps or less (1/100–5 amps for 125 V or less, 7–15 amps for 32 V or less). GLN, GLX body size, .140" x .3"; GFA body size, .145" x .3".

Buss No.	Amperes	Net Price For	
		Ten	100
GLN	1/100	$14.60	$122.00
GLN	1/32, 1/20, 1/16, 1/10, 1/8, 3/10, 4/10, 7, 8, 15	12.40	103.00
GLX	15/100, 2/10, 1/4, 1/2, 6/10, 3/4, 1, 1½, 2, 3, 4, 5	16.00	133.00
GFA	1/100, 1/32, 1/20, 1/16, 1/10, 1/8, 15/100, 2/10, 1/4, 3/10, 4/10, 1/2, 6/10	5.30	44.00
GFA	3/4, 1, 1½, 2, 3, 4, 5, 7, 8, 15	4.50	38.00

SUBMINIATURE PRONG TYPE UNIT



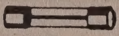
Rated 125 V or less, faulty current not over 300 amps; open at 200% within 10 sec. or less. Use AF knob for waterproof. Size, .27" dia., ¼" lg. (body).

Buss No.	Amperes	Net Price for	
		Ten	100
GMW	1/200, 1/100, 1/64, 1/32, 1/16	$8.80	$74.00
GMW	1/10, 2/10, ¼, 3/10, 4/10, ½, 6/10, ¾, 1, 1½, 2, 3, 4, 5	6.80	57.00
HWA*	Holder, fits all GMW	8.60	72.00
HWA†	Holder, fits all GMW	7.50	63.00
AF	Knob only, fits HWA	1.10	9.00

*With AF knob. †Without AF knob.

13/64 x 45/64 inch FUSES

(5 mm X 20 mm)

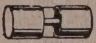


Protection of miniaturized circuits commonly used in foreign equipment. Carry 100% open at 200% in 10 sec.

Buss No.	Amperes	Net Price for	
		Five	100
GMA	1/32	$2.45	$41.00
GMA	1/20, 1/16	2.15	36.00
GMA	⅛, 1/10, 2/10	2.00	33.00
GMA	¼, 3/10, 4/10, ½, 6/10, 7/10	1.60	27.00
GMA	1, 1-2/10, 1½, 2, 2½, 3, 4, 5, 7, 8, 10	1.30	22.00

1/4 x 5/8 inch FUSES

FAST ACTING FUSES

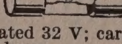


Glass tube, ¼" x ⅝". Rated 32 V, carry 110%, open at 135% in 1 hour.

AGA	1, 1½, 2, 2½, 3	$0.48	$8.50
AGA	5, 6, 7½, 10, 15, 20, 25, 30	.38	6.50

1/4 x 7/8 inch FUSES

FAST ACTING FUSES

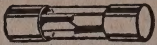


Glass tube, rated 32 V; carry 110%, open at 135% in 1 hour.

AGW	1, 2½, 3, 4	$0.48	$8.50
AGW	5, 6, 7½, 15, 20, 30	.38	6.50

1/4 x 1 inch FUSES

FAST ACTING FUSES



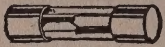
Glass tube, ¼" x 1". Carry 100%, open at 200% in 5 seconds. 1/500 to 1/32 amp sizes have bridge construction; all others straight-through element. UL Recognized.

Buss No.	Amperes	Volts	Net Price For	
			Five	100
AGX	1/500	250	$7.15	$119.00
AGX	1/200	250	3.10	52.00
AGX	1/100	250	2.65	44.00
AGX	1/32	250	2.25	38.00
AGX	1/16	250	1.50	25.00
AGX	1/10, ⅛, 3/16, 2/10	250	1.15	19.00
AGX	¼, ⅜, 4/10, ½, ¾	250	.70	12.00
AGX	1, 1½, 2, 3, 4	125*	.48	8.50
AGX	5, 8, 10, 15, 20	32†	.38	6.50
AGX	25, 30	32	.38	6.50
AGX	35	32	.48	8.50

*1A, 250. †5A, 125.

1/4 x 1-1/4 inch FUSES

FAST ACTING FUSES



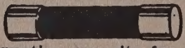
Glass tube, ¼" x 1¼". Carry 110%, open at 135% in 1 hour or less. 1/500 to 2 amp sizes will open at 200% in 5 seconds or less. 1/500 to 1/32 amp have bridge construction; all others straight-through element. UL Recognized.

AGC	1/500	250	$7.15	$119.00
AGC	1/200	250	3.10	52.00
AGC	1/100	250	2.65	44.00
AGC	1/32	250	2.25	38.00
AGC	1/16, ⅛, 15/100, 175/1000, 3/16, 1/10, 2/10	250	1.15	19.00
AGC	¼, 3/10, ⅜, 45/100, ½, 6/10, ¾	250	.70	12.00
AGC	1, 1¼, 1½, 1-6/10, 2	250	.48	8.50
AGC	2½, 3	250	.48	8.50
AGC	4	32‡	.48	8.50
MTH	4, 5, 6	250	.55	9.50
AGC	5, 6, 7½, 8, 10, 15	32‡	.38	6.50
AGC	20, 25, 30	32‡	.38	6.50
AGC	35	32‡	.48	8.50

‡Not UL Recognized.

1/4 x 1-1/4 inch FUSES

CERAMIC TUBE FUSES

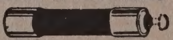


High interrupting capacity for use on circuit delivering as high as 25,000 amps at 125 V, or 10,000 amps at 250 V. ¼" x 1¼". Carry 110%, open at 135% in 1 hour. Up to 15 amp size. UL Recognized.

ABC	¼	250	$0.95	$16.00
ABC	1, 2, 3	250	.95	16.00
ABC	5, 6, 8, 10	250	.80	14.00
ABC	12, 15, 20	250	.95	16.00
ABC	25, 30	125	1.25	21.00

1/4 x 1-1/4 inch FUSES

VISUAL INDICATING FUSES



For use with HLD fuseholder. Bright red dot on indicating pin extends from end of fuse when fuse is open even after power is off. Rated 125 V or less, carries 110%, opens at 135% in 1 hour or less. Only ¼" x 1¼".

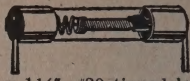
Buss No.	Amperes	Net Price For	
		Five	100
GBA	¾	$3.10	$52.00
GBA	1, 1½, 2, 3, 4, 5	2.25	38.00

Fiber tube with silver plated indicating pin which extends when fuse is blown. May be used to actuate a signal when used in HKA fuseholder or Signal Fuse Block. Dual tube construction in sizes larger than 5 amps (cannot be used in HKA fuseholder). Voltage, 125 volts, except 8 amp and over which are 32 volts. Size, ¼" x 1¼".

GLD	¾	$2.80	$47.00
	1, 1½, 2, 3, 4, 5	2.15	36.00
	6, 8, 10, 12, 15, 20	3.10	52.00

1/4 x 1-1/4 inch FUSES

FUSETRON PIG-TAIL FUSES



Body ¼" x 1¼", #20 tinned leads, 1¼
1/100 to 2-8/10 same as MDL type; 3 to
amps same as MDX type. UL Recognize

Buss No.	Amperes	Volts	Net Price F	
			Five	10
MDV	1/100, 1/32	250	$2.35	$39.
MDV	1/16, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, ¾, 8/10, 1	250	1.75	30.
MDV	1¼, 1½, 1-6/10, 1-8/10, 2, 2¼	125	1.70	28.
MDV	2½, 2-8/10, 3, 3-2/10, 4, 5, 6¼, 7	125	1.50	25.

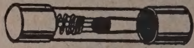
PIG-TAIL FUSES

Glass tube ¼" x 1¼" with 1¼" leads
#20 tinned wire. Carry 110%, open 135
in 1 hour. 250 V. UL Recognized.

Buss No.	Amperes	Net Price F	
		Five	10
GJV	1/16	$1.75	$30.
GJV	⅛	1.40	24.
GJV	¼, 3/10, ⅜, ½, ¾	1.15	19.
GJV	1, 1½, 1¾, 2, 3	.85	14.
GJV	4, 5, 6, 7	.85	15.

1/4 x 1-1/4 inch FUSES

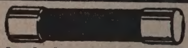
FUSETRON GLASS TUBE FUSES



Dual-element slow-blowing type, ¼"
1¼". Fuse link operates only on very hig
overloads or short-circuits; thermal cuto
functions on low overloads (cannot opera
quickly on any load, thus providing lo
time-lag). Carry 110%, open at 135% in
hour. MDL 1/100 to 2-8/10 amp and MD
3 to 7 amp sizes, UL Recognized. MD
type has longer time-lag than MDX typ

Buss No.	Amperes	Volts	Net Price F	
			Five	10
MDL	1/100, 1/32	250	$2.00	$33.
MDL	1/16, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, 7/10, ¾, 8/10, 1		1.50	25.
MDX	1¼, 1½, 1-6/10, 2	250	1.60	27.
MDL	1-2/10, 1¼, 1½, 1-6/10, 1-8/10, 2	125	1.40	24.
MDL	2½, 2-8/10	125	1.15	19.
MDX	3, 3-2/10, 4, 5	125	1.15	19.
MDX	6¼, 7	125	1.30	22.
MDL	3, 3-2/10, 4, 5, 6¼, 8, 10, 15, 20, 25, 30	32	1.15	19.

1/4 x 1-1/4 inch FUSES



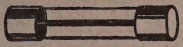
Fusetron dual-element fuse, slow-blowin
type, ceramic tube. Carry 110%, open
135% in one hour.

MDA	1/100, 1/32	250	$2.45	$41.
MDA	1/16, 1/10, ⅛, 15/100, 175/1000, 3/16, 2/10, ¼, 3/10, ⅜, 4/10, ½, 6/10, ¾, 8/10, 1, 1¼, 1½, 1-6/10, 2	250	2.05	35.
MDA	2½, 2-8/10, 3, 3-2/10, 4, 5, 6¼, 7, 8, 10, 15, 20	250	1.50	25.
MDA	25, 30	125	1.50	25.

Buss® and Fusetron® Fuses, Holders

9/32 x 1-1/4 inch FUSES

AGS GLASS TUBE FUSES

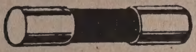


Test specification; carry, 110%, open at 135% within 1 hour except 35 and 40 amp units which open at 300% in 2 to 4 seconds when tested in standard 30-amp test circuit. **Note:** These units in sizes larger than 30 amps are not recommended for use in fuse clips or fuseholders as clips will not carry the high currents.

Buss No.	Amperes	Volts	Net Price For Five	Net Price For 100
AGS	1/16	250	$2.05	$35.00
AGS	⅛	250	1.60	27.00
AGS	¼, ½	250	.75	13.00
AGS	1, 2, 2½, 3	250	.70	12.00
AGS	5, 10, 15, 20, 25, 30	32	.60	10.00
AGS	35, 40, 50	32	.70	12.00

9/32 x 1-1/4 inch FUSES

CERAMIC TUBE FUSES

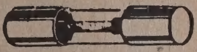


Carry at 110%, open at 135% in one hour; 30 and 40 amp units open at 300% in 2 to 4 seconds when tested in standard 30-amp test circuit.

ABS	1, 2, 3	250	$1.50	$25.00
ABS	5, 8, 10, 15, 20	250	1.40	24.00
ABS	25, 30	125	1.40	24.00
ABS	35, 40	32	1.50	25.00

9/32 x 1-1/4 inch FUSES

FUSETRON DUAL-ELEMENT FUSES



Glass tube, slow-blowing. Avoids needless blows from starting currents or surges, yet provides protection against short circuits or continuous overloads. Carry 110%, open at 135% in one hour. Approximate blowing time, 25 sec at 200% load, 8 sec at 300% load, 3 sec at 500% load.

MDM	1/10, 15/100, 2/10, ¼, 3/10, 4/10, ½, 6/10, ¾, 8/10, 1	250	$1.90	$32.00
MDM	1¼, 1-6/10, 2	125	1.90	32.00
MDM	2½, 2-8/10, 3	125	1.50	25.00
MDM	3-2/10, 4, 5, 6¼, 8, 10, 15, 20, 25, 30, 35, 40	32	1.50	25.00

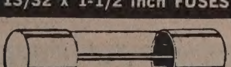
13/32 x 1-3/8 inch FUSES

"QUICK-BLOWING" 600 V FUSES

Designed to protect control circuits, fluorescent lighting circuits or similar uses where quick-blowing characteristics are desired. Use HPC-L fuseholder or 3845 fuse block. UL Recognized. Fiber tube 13/32″ x 1⅜″.

Buss No.	Amperes	Net Price For Ten	Net Price For 100
BBS	4/10, ¾, 8/10	$2.70	$23.00
BBS	1, 2, 3, 4, 5	2.50	21.00

13/32 x 1-1/2 inch FUSES



Glass tube; carry 110%, open at 135% in one hour. Below 4 amp sizes UL Recog.

Buss No.	Amperes	Volts	Net Price For Ten	Net Price For 100
AGU	1, 2, 3, 4	250	$1.70	$15.00
AGU	5, 10, 15, 20, 25, 30, 35, 40, 50, 60	32	1.70	15.00

13/32 x 1-1/2 inch FUSES

MIDGET TYPE FUSES

Up to 15 amp size UL Recognized.

Buss No.	Amperes	Volts	Net Price For Ten	Net Price For 100
BAF	1, 3, 6, 10	250	$1.50	$13.00
BAF	15, 20, 25, 30	125	1.50	13.00

INDICATING, LAMINATED TUBE FUSES

Red button on indicating pin extends from end of fuse when fuse is blown. Units are built in accordance with Navy Specifications. These units may be used in Buss HPC-C fuseholders. Voltage, (1-15 amps), 250, others, 125 V.

MIN	1, 2, 3, 5, 10, 15, 20, 25, 30	$4.50	$38.00

SIGNAL OR VISUAL INDICATING FUSES

MIC fuses have silver-plated indicating pin. Pin may be used as visual indicator or may be used to actuate a signal. **MIJ** fuses are similar to MIC types except they have been specially designed for complex circuitry as in computers. Voltage, 250 except 20 amps and over which are 32 V.

MIC	1, 2, 3, 5, 10, 15, 20, 25, 30	$5.30	$44.00
MIJ	1, 2, 3, 5, 10, 15, 20, 25, 30	6.20	52.00

FUSETRON FIBER TUBE FUSES

FUSETRON
DUAL ELEMENT FUSE
AMPERES SHOWN ON CAP

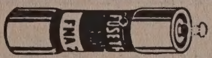
Dual-element slow-blowing type, 13/32″ x 1½″ overall. Fuse link operates only on very high overloads or short circuits; thermal cutout functions on low overloads (cannot operate quickly on any overload, thus providing longer time lag). Carry 110%, open at 135% in 1 hour. 125 and 250 volt sizes UL Recognized.

Buss No.	Amperes	Volts	Net Price For Ten	Net Price For 100
FNM	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6¼, 7, 8, 9, 10	250	$4.00	$34.00
FNM	12, 15	125	4.00	34.00
FNM	20, 25, 30	32	4.00	34.00

MDR same as series FNM above, except glass tube instead of fiber tube.

MDR	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10	250	$4.50	$38.00
MDR	1, 1½, 1-6/10, 2	125	4.50	38.00
MDR	2½, 3, 3-2/10, 4, 5, 6¼, 8, 10, 15, 20	32	3.80	32.00
MDR	25, 30, 35, 40	32	4.10	35.00

INDICATING FUSETRON FUSES



Similar to FNM types. Indicating pin extends from fuse when fuse blows. Use in signal fuse block or HPC-C fuseholder (larger than 10 amps units cannot be used in HPC-C). UL Recognized in 0–15 amp sizes.

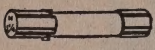
FNA	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6, 6¼, 7, 8, 10	$7.50	$62.00
FNA	12, 15, 20, 25, 30	8.40	70.00

13/32 x 1-1/2 inch FUSES

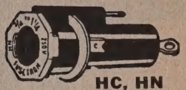
HIGH INTERRUPTING CAPACITY FUSES

Type KTK—For use on circuits as high as 100,000 amps at 600 volts or less, AC only. Glass fiber melamine tubes and sand filler surrounding a silver fuse element. **Amperes:** 1/10, ⅛, 2/10, ¼, 3/10, ½, ¾, 1, 1½, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30. Lot of 10, Net **$11.20** Lot 100, Net **$94.00**

TYPE C AND N FUSES, HOLDERS



C, N



HC, HN

Matched glass fuses and fuseholders for specific size ranges. **Type N** fuses are dual-element time-delay or slow-blowing type. 0 to 1¼ amp sizes, ¼″ x 1¼″; 1-3/10 to 7 amp sizes, ¼″ x 1 7/16″. **Type C** fuses are single-element quick-blowing type. 0 to 3½ amp sizes, ¼″ x 1 1/16″; 3-6/10 to 10 amp sizes, ¼″ x 1¼″. Holders rated at 250 volts.

TYPE N FUSES

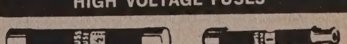
Amperes	Holder No. HN-	Volts	Net Price For Five	Net Price For 100
1/100, 1/32 1/16, 1/10, 15/100, 2/10, ¼, 3/10	0 to 3/10	250	$2.00 1.50	$33.00 25.00
4/10	3/10 to ½	250	1.50	25.00
½	3/10 to ½	250	1.50	25.00
6/10	½ to ¾	250	1.50	25.00
7/10, ¾	½ to ¾	250	1.50	25.00
8/10, 1	¾ to 1¼	250	1.50	25.00
1¼	¾ to 1¼	250	1.40	24.00
1-6/10	1-3/10 to	125	1.40	24.00
1¾	1¾	125	1.40	24.00
2	1¾ to 2½	125	1.40	24.00
2½	1¾ to 2½	125	1.40	24.00
2-8/10	2½ to 3½	125	1.40	24.00
3-2/10	2½ to 3½	125	1.40	24.00
3½	2½ to 3½	125	1.40	24.00
4	3½ to 5	125	1.40	24.00
5	3½ to 5	125	1.40	24.00
6¼	5 to 7	125	1.40	24.00
7	5 to 7	125	1.40	24.00

TYPE C FUSES

Amperes	Holder No. HC-	Volts	Net Price For Five	Net Price For 100
1/32	0 to 3/10	250	$2.15	$36.00
1/16	0 to 3/10	250	1.50	25.00
⅛, 3/16	0 to 3/10	250	1.15	19.00
¼	0 to 3/10	250	.85	15.00
3/10	0 to 3/10	250	.85	15.00
⅜	3/10 to ½	250	.85	15.00
½	3/10 to ½	250	.85	15.00
¾	½ to ¾	250	.85	15.00
1	¾ to 1¼	250	.55	9.00
1¼	¾ to 1¼	250	.55	9.00
1½	1¼ to 1¾	250	.55	9.00
1¾	1¼ to 1¾	250	.55	9.00
2	1¾ to 2½	250	.55	9.00
2½	1¾ to 2½	250	.55	9.00
3	2½ to 3½	250	.55	9.00
3½	2½ to 3½	250	.60	10.00
4	3-6/10 to 5	250	.60	10.00
5	3-6/10 to 5	250	.60	10.00
6	5 to 7	250	.60	10.00
7	5 to 7	250	.60	10.00
8	7 to 10	250	.95	16.00
10	7 to 10	250	.95	16.00

Type HC and Type HN Fuseholders—All sizes (specify). Net for 10...**$ 2.00**
Net for 100.................... **17.00**

HIGH VOLTAGE FUSES



Designed for protection of circuits up to 20 kW on DC and 30 kVA on AC.

Buss No.	Amperes	V	Net Price For Ten	Net Price For 100
HVA	⅜, ½, ¾, 1, 1½, 2	1000	$ 3.20	$26.00
HVB	½, ¾, 1, 1½, 2	2500	4.50	38.00
HVJ	1/16, ⅛, ¼, ⅜, ½, ¾, 1, 1½, 2	5000	8.10	68.00
HVL	1/16, ⅛, ¼, ⅜, ½, ¾, 1, 1½, 2	10K	15.80	131.00

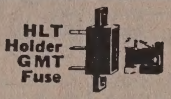
Buss® and Fusetron® Fuses, Holders

SFE STANDARD FUSES

Different amperages are different lengths, making it impossible to over-fuse. Glass tube, ¼″ dia. Carry 110%, open at 135% in 1 hour. Made to SAE specifications and UL Recognized, 32 volts or less.

Buss No.	Amperes	Lgth. In.	Net Price For Five	Net Price For 100
SFE	4	⅝	$0.38	$6.50
SFE	6	¾	.38	6.50
SFE	7½, 9	⅞	.38	6.50
SFE	14	1 1/16	.38	6.50
SFE	20	1¼	.38	6.50
SFE	30	1 7/16	.38	6.50

SIGNAL-INDICATING ALARM ACTIVATING TYPE UNIT

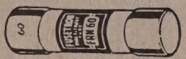


Takes only ¼″ x 1 15/32″ space. Color indicator. Rated 300 V or less; 100% for 10 min.; open at 150% within 5 min.

Buss No.	Amperes and Color of Indicator	Net Price for Ten	Net Price for 100
GMT	18/100*, ¼†, ½‡, 65/100§, ¾#, 1•, 1⅓▲, 2■, 3♦, 5⌶, 7½⁑, 10**	$4.90	$41.00
HLT	Holder, fits all GMT	5.30	44.00

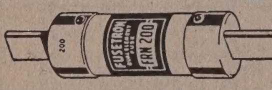
Color of Indicator: *Yellow; †violet; ‡red; §black; #brown; •gray; ▲white; ■orange; ♦blue; ⌶green; ⁑black-white; **red-white.

FUSETRON DUAL-ELEMENT FUSES



Long time-lag prevents useless shut-downs caused by ordinary fuses opening on starting currents or other harmless overloads, yet protects against short-circuits. On normal installations will guard motors against burnout from overloads or single phasing. UL Recognized for motor running and circuit protection up to 250 volts.

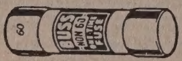
Buss No.	Amperes	Net Price For Ten	Net Price For 100
FRN	1/10, 15/100, 2/10, 3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6¼, 7, 8, 9	$5.40	$46.00
FRN	10, 12, 15, 17½, 20, 25, 30	5.10	43.00
FRN	35, 40, 45, 50, 60	9.40	78.00



Buss No.	Amperes	Net Price For Ten	Net Price For 100
FRN	70, 80, 90, 100	$21.40	$178.00

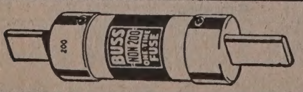
BUSS ONE-TIME FUSES

FAST ACTING FUSE



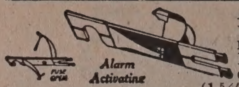
Get same care in engineering and manufacture as other BUSS products. Each can be depended upon to operate as intended under all service conditions. UL Recognized. For voltages up to 250.

Buss No.	Amperes	Net Price For Ten	Net Price For 100
NON	1, 3, 6, 10, 15, 20, 25, 30	$1.50	$13.00
NON	35, 40, 45, 50, 60	2.70	23.00



Buss No.	Amperes	Net Price For Ten	Net Price For 100
NON	70, 80, 90, 100	$11.70	$97.00

GRASSHOPPER FUSES



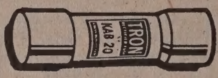
Alarm activating and signal indicating. Length: 1 43/64″, except 35D (1⅝″), 35E (1 63/64″).

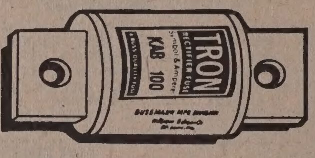
Buss No.	Amps	Blowing Time Amp	Blowing Time Sec.	Net Price For Ten	Net Price For 100
35A*	1⅓ #	2	90	$3.50	$29.00
35B*	1⅓**	2	90	3.50	29.00
35B*	2**	3	180	3.50	29.00
35C*	2#	3	180	3.50	29.00
35D*	1⅓**	2	90	6.70	56.00
35E*	3**	4	300	3.70	31.00
35F*	½ #	¾	9	3.50	29.00
35G*	3**	4½	300	3.50	29.00
35H*	5**	6½	300	3.50	29.00
35J†	½ #	¾	90	4.80	40.00
35K†	1⅓ #	2	180	6.70	56.00
35L†	2#	3	180	6.70	56.00
35M†	3**	4½	300	6.10	51.00
35N†	5**	6½	300	6.10	51.00
35P†	¾ #	1⅛	90	4.50	37.00
35R*	18/100#	.270	90	4.50	37.00
35S†	¼ #	.375	90	4.80	40.00
35T*	65/100#	1.1	180	4.80	40.00

Volts: *90 or less. †160 or less. Mounting Screw: #No. 10. **No. 6.

TRON® RECTIFIER FUSES

For Protection of Semiconductor Rectifiers and Similar Applications





Especially designed for protection of semiconductor rectifiers, thyristors and other solid state devices. High interrupting capacity and very fast clearing to restrict let-through current and energy to very low values. Give safe short-circuit protection for systems with fault current to 200 kA at 600 volts or less. Carry 100%, open at 1000 secs between 150% and 180% of rating; open within 1 sec at 250% of rating.

GBB SERIES

Size, 1¼″ lg. x ¼″ dia.

Buss No.	Amperes	Max. Volts	Net Each
GBB	¼, 1, 1¼, 2, 3, 4, 5, 6, 7, 8, 9, 10	130	$0.79
GBB	12, 15, 20, 25, 30	65	.79

KAA SERIES

Size, 1½″ lg. x 13/32″ dia. Also available up to 1000 amps; prices on request.

Buss No.	Amperes	Max. Volts	Net Each
KAA	½, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30	130	$1.08

KAW SERIES

Size, 1½″ lg. x 13/32″ dia.

Buss No.	Amperes	Max. Volts	Net Each
KAW	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30	130	$1.08

KAB SERIES

Size, 9/16″ dia. x 2″ lg., values to 30 amps; 17/32″ dia. x 3⅛″ lg., 70 amps to 200 amps. Also available up to 800 amps; prices on request.

Buss No.	Amperes	Max. Volts	Net Each
KAB	½, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 17½, 20, 25, 30	250	$1.22
KAB	70, 80, 90, 100, 125, 150, 175, 200	250	6.16

KAC SERIES

Size, 2⅞″ lg. x 9/16″ dia. Also available up to 800 amps; prices on request.

Buss No.	Amperes	Max. Volts	Net Each
KAC	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 17½, 20, 25, 30	600	$1.63

BLOCKS FOR TRON® RECTIFIER FUSES

Buss No.	No. Poles	For Fuse* No.	For Fuse* Amp	Base Size, In.	Net Each
4515	1	KAA or KAW	1–30	¾ x2 9/16	$0.68
4525	2			1 5/16 x2 9/16	1.30
4535	3			2 1/16 x2 9/16	1.91
4386	1	KAB	1–30	¾ x3¼	.99
4287	2			2 x3½	1.91
3959	3			3 x3½	2.98
3556	1	KAB	70–100	1½ x3⅛	2.17
3521	3			5 23/32x3⅛	6.50
3595	1	KAC	1–30	1¼ x3½	1.58
3528	2			2½ x3½	3.15

***GBB** series, use any BUSS block for ¼ x 1¼ in. fuses.

BLOCKS FOR 1/4 x 5/8 inch FUSES

Buss No.	No. of Poles	Terminal Type	Net Each
4511	1	Screw	$0.43
4521	2	Screw	.86
4531	3	Screw	1.31

BLOCKS FOR 1/4 x 7/8 inch FUSES

Buss No.	No. of Poles	Terminal Type	Net Each
4393	1	None	$0.25
4398	1	Solder	.25
4399	1	Screw	.35
4401	2	Solder	.41
4402	2	Screw	.70
4403	3	Solder	.65
4404	3	Screw	1.03
4485	2	Solder	.41
4517	1	Screw	.43
4520	1	Solder	.25
4537	3	Screw	1.31

BLOCKS FOR 1/4 x 1 inch FUSES

Buss No.	No. of Poles	Terminal Type	Net Each.
3828-1	1	Solder	$0.25
3828-2	2	Solder	.41
3828-3	3	Solder	.65
3828-4	4	Solder	.80
3828-5	5	Solder	1.00
3828-6	6	Solder	1.20
3828-7	7	Solder	1.35
3828-8	8	Solder	1.52
3828-9	9	Solder	1.73
3828-10	10	Solder	1.90
3828-11	11	Solder	2.10
3828-12	12	Solder	2.30
4393	1	None	.25
4398	1	Solder	.25
4399	1	Screw	.35
4401	2	Solder	.41
4402	2	Screw	.70
4403	3	Solder	.65
4404	3	Screw	1.03
4485	2	Solder	.41
4514	1	Screw	.43
4520	1	Solder	.25
4524	2	Screw	.86
4534	3	Screw	1.31

BLOCKS FOR 1/4 x 1-1/4 inch FUSES

Buss No.	No. of Poles	Terminal Type	Net Each
4405	1	Solder	$0.25
4408	2	Solder	.41
4411	3	Solder	.65
4512	1	Screw	.43
4522	2	Screw	.86
4532	3	Screw	1.31

Buss® and Fusetron® Fuses, Holders

BLOCKS FOR ¼ x 1¼ INCH FUSES (CONT'D)

All types have molded black phenolic bases; spring clips are Albaloy plated for strong grip and high corrosion resistance.

SOLDER TERMINAL TYPE ON SMALL BASE

Buss No.	No. of Poles	Base Size, Inches	Net Each
3823-1	1	½ x 1⅝	$0.25
3823-2	2	1⅛ x 1⅝	.41
3823-3	3	1¾ x 1⅝	.65
3823-4	4	2⅜ x 1⅝	.80
3823-5	5	3 x 1⅝	1.00
3823-6	6	3⅝ x 1⅝	1.20
3823-7	7	4¼ x 1⅝	1.35
3823-8	8	4⅞ x 1⅝	1.52
3823-9	9	5½ x 1⅝	1.73
3823-10	10	6⅛ x 1⅝	1.90
3823-11	11	6¾ x 1⅝	2.10
3823-12	12	7⅜ x 1⅝	2.30

SCREW TERMINAL TYPE ON FULL BASE

3833-1	1	25/32 x 2⅜	$0.43
3833-2	2	1 11/16 x 2⅜	.88
3833-3	3	2 19/32 x 2⅜	1.35
3833-4	4	3⅓ x 2⅜	1.78
3833-5	5	4 13/16 x 2⅜	2.23
3833-6	6	5 11/16 x 2⅜	2.68
3833-7	7	6 7/32 x 2⅜	3.11
3833-8	8	7⅛ x 2⅜	3.58
3833-9	9	8 1/32 x 2⅜	4.03
3833-10	10	8 15/16 x 2⅜	4.48
3833-11	11	9 27/32 x 2⅜	4.90
3833-12	12	10¾ x 2⅜	5.34

BLOCKS FOR 9/32 x 1-1/4 inch FUSES

Buss No.	No. of Poles	Terminal Type	Net Each
4413	1	Solder	$0.35
4414	1	Solder	.35
4415	1	Screw	.62
4416	2	Solder	.70
4417	2	Solder	.70
4418	2	Screw	1.10
4419	3	Solder	1.03
4420	3	Screw	1.65
4481	1	Screw	.62
4482	2	Screw	1.10
4483	3	Screw	1.65

BLOCKS FOR 13/32 x 1-3/8 inch FUSES

Buss No.	No. of Poles	Terminal Type	Net Each
3845	1	Screw	$0.77

BLOCKS FOR 13/32 x 1-1/2 inch FUSES

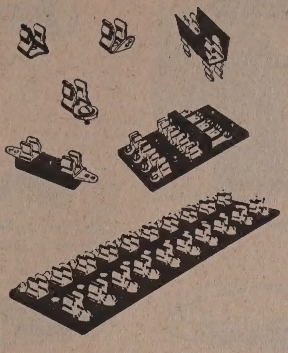
Buss No.	No. of Poles	Terminal Type	Net Each
2807	1	Screw	$0.68
2808	2	Screw	1.12
2809	3	Screw	1.51
2810	1	Pressure lug	1.43
2811	2	Pressure lug	2.80
2812	3	Pressure lug	4.21
3792	1	Screw	.77
4421	1	Solder	.50
4422	1	Solder	.50
4423	1	Screw	.58
4424	2	Solder	1.03
4426	2	Solder	1.03
4427	2	Screw	1.10
4428	3	Solder	1.52
4429	3	Screw	1.65
4439	3	Screw	2.21
4415	1	Screw	.62
4525	2	Screw	1.30
4535	3	Screw	1.91
4575	2	Screw	1.37

POLARIZED BLOCKS FOR SILICON RECTIFIERS

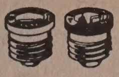
Buss No.	No. of Poles	Terminal Type	Net Each
3794	1	Solder	$0.25
3795	2	Solder	.41

BLOCKS FOR HIGH VOLTAGE FUSES

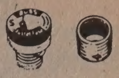
Buss No.	No. of Poles	For Fuse	Net Each
4528	1	Buss HVA	$1.22
4529	1	Buss HVB	1.78
4530	1	Buss HVJ	2.50



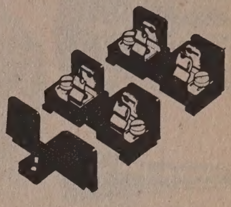
Fuse Clips and Blocks



Plug Fuses



Fustat Fuses



Add-on Fuse Block

BLOCKS FOR 13/32 x 1-1/2 inch FUSES

SIGNAL FUSE BLOCK

Base dimensions, 2.688″ x 4.375″. For use with BUSS FAN and FNJ indicating fuses.

Buss No.	No. of Poles	Terminal Type	Net Each
3839	4	Screw	$4.95

ADD-ON FUSE BLOCKS

Make fuse block of any number of poles. Each single pole nests against next one; new poles can be added at any time. Order one end barrier plus any number of poles. Marking strip available to identify poles. Rated 30 A at 600 V. UL Recognized.

Buss No.	Description	Terminal Type	Net Ea.
3742	End barrier only	....	$0.14
3743	One pole block only	Screw	1.01
......	Marking strip, 50″	....	.45

BUSS FUSE CLIPS

Buss No.	Description	For Fuse Dia., In.	Net Each
3434	Insul. twin clip	¼	$0.19
5681-15	Clip	¼	.038
5678-14	Clip and terminal	¼	.043
4431	Clip assembly	¼	.11
4432	Clip assembly	¼	.14
5682-01	Clip	¼	.066
5682-41	Clip	¼	.034
5682-44	Clip	¼	.034
4567	Clip assembly	¼	.11
4583	Clip assembly	¼	.13
5682-02	Clip	¼	.066
5672-11	Clip	9/32	.058
5674-41	Clip	9/32	.058
4560	Clip assembly	9/32	.17
4585	Clip assembly	9/32	.25
5674-01	Clip	9/32	.11
5956-16	Clip	13/32	.058
5960-61	Clip	13/32	.075
5960-07	Clip	13/32	.17
5960-63	Clip	13/32	.075
4561	Clip assembly	13/32	.17
4586	Clip assembly	13/32	.30
5960-09	Clip	13/32	.17

CLEAR WINDOW PLUG FUSE

Shockproof fuses are insulated with porcelain-like high voltage power lines. Top cap protects fingers from shock and cuts. Always fit fuseholders. UL Recognized.

Buss No.	Amperes	Net Price for Five	Net Price for 100
W	1, 2, 3, 5, 6, 8, 10	$0.60	$10.50
W	15, 20, 25, 30	.55	9.60

FUSETRON DUAL-ELEMENT PLUG FUSES

Time-delay fuses recommended by N.E. Code. Will not blow under motor-starting or other current surges, yet provides full protection against heavy currents or short circuits. Rated up to 125 V. UL Recognized.

Buss No.	Amperes	Net Price for Four	Net Price for 100
T	3/10, 4/10, ½, 6/10, 8/10, 1, 1⅛, 1¼, 1-4/10, 1-6/10, 1-8/10, 2, 2¼, 2½, 2-8/10, 3-2/10, 3½, 4, 4½, 5, 5-6/10, 6¼, 7, 8, 9, 10, 12, 14	$1.00	$21.00
T	15, 20, 25, 30	.88	19.00

FUSTAT FUSES AND ADAPTERS

Time-delay fuses with type S base recommended by N.E. Code. Prevents overfusing when used with proper size adapter. Rated up to 125 V. UL Recognized. Adapters not included with Fustat fuses; order separately and specify size.

Fustat Fuses, Amps	Adapter	Fustat Fuses, Amps	Adapter
S3/10	SA1*	S3½	SA4
S4/10	SA1*	S4	SA4
S½	SA1*	S4½	SA5§
S6/10	SA1*	S5	SA5§
S8/10	SA1*	S5-6/10	SA6¼#
S1	SA1*	S6¼	SA6¼#
S1⅛	SA1¼*	S7	SA8
S1¼	SA1¼*	S8	SA8
S1-4/10	SA1-6/10*	S9	SA10•
S1-6/10	SA1-6/10*	S10	SA10•
S1-8/10	SA2	S12	SA15▲
S2	SA2	S14	SA15▲
S2¼	SA2½†	S15	SA15▲
S2½	SA2½†	S20	SA20
S2-8/10	SA3-2/10‡	S25	SA30■
S3-2/10	SA3-2/10‡	S30	SA30■

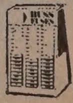
*Adapter also takes all smaller sizes. †Also takes 2, 1-8/10 sizes. ‡Also takes 2½, 2¼, 2, 1-8/10 sizes. §Also takes 4, 3½ sizes. #Also takes 5, 4½, 4, 3½ sizes. •Also takes 8, 7 sizes. ▲Also takes 10, 9, 8, 7 sizes. ■Also takes 20 size.

Buss Fustats—3/10 through 14 amp sizes. Net Each........................**$0.25**

Buss Fustats—15 through 30 amp sizes. Net Each........................**$0.22**

Fustat Adapters—SA1 through SA30. Net Each........................**$0.17**

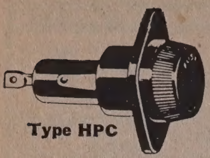
FUSE ASSORTMENT



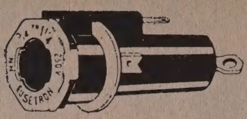
Sturdy metal stand holds 130 fuses (5 fuses per box, 26 sizes in individual 5″ boxes). Inventory feature shows what fuses need reordering.

Buss No. 130—Net...**$22.10**

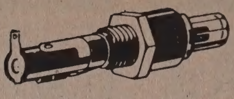
Buss® Fuseholders



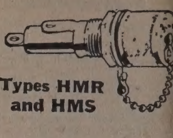
Type HPC



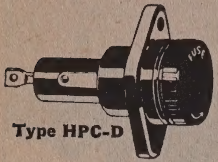
Types HC and HN



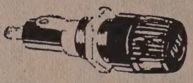
Type HKL



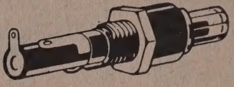
Types HMR and HMS



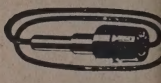
Type HPC-D



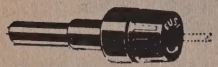
Series HJ and HK



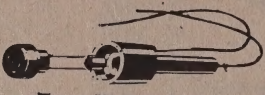
Type HKA



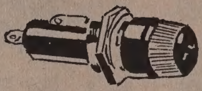
Series HR



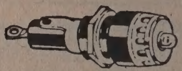
Series HH and HI



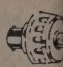
Types HLQ and HLR



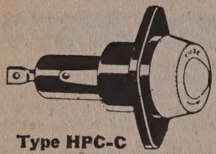
Series HCM



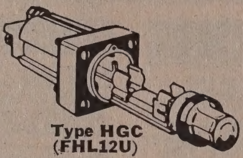
Type HLD



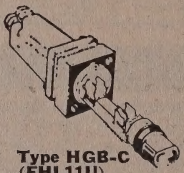
No. 5487



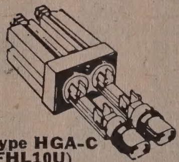
Type HPC-C



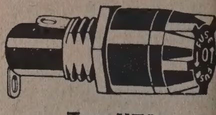
Type HGC (FHL12U)



Type HGB-C (FHL11U)



Type HGA-C (FHL10U)



Type HTA

Fuse voltage on lamp indicating holders shows operating range for lamp indication.

Fuse voltage on non-indicating holders shows maximum voltage of fuses commercially available that will fit holders.

LAMP-INDICATING FOR 1/4 x 1 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HJL	Panel	100–250	20 A	$2.03

SIGNAL ACTIVATING-LAMP INDICATING FOR 1/4 x 1-1/4 inch INDICATING FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HKA	Panel	125 or less	5 A	$4.40

LAMP INDICATING FOR 1/4 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HGA	Panel	100–250	30 A	$4.41
HGA-C	Panel	100–250	30 A	4.85
HGB	Panel	100–250	30 A	3.75
HGB-C	Panel	100–250	30 A	4.13
HKL	Panel	100–250	20 A	2.03
HKL-X	Panel	100–250	20 A	2.03
HKR	Panel	24–32	20 A	3.28
HKT	Panel	10–14	20 A	3.28
HKU	Panel	4–6	20 A	3.28
HKX	Panel	24–32	20 A	3.28

VISUAL INDICATING FOR 1/4 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HLD	Panel	125 or less	30 A	$0.53
5487	Knob assembly for HLD			.28

SHIELDED NON-INDICATING FOR 1/4 x 1 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HMS	Panel	250 or less	30 A	$5.60

NON-INDICATING FOR 1/4 x 1 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HDI	Inline	250 or less	15 A	$0.19
HHI	Inline	250 or less	15 A	.28
HJM	Panel	125 or less	30 A	.47
HJM-CC	Panel	125 or less	30 A	.47
HJM-H	Panel	125 or less	30 A	.50
9969	Spring nut for panel mounting inline holder			.038

SHIELDED NON-INDICATING FOR 1/4 x 1-1/4 INCH FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HMR	Panel	250 or less	30 A	$5.60

NON-INDICATING FOR 1/4 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HCM	Panel	250 or less	18 A	$0.70
HCM-H	Panel	250 or less	18 A	.74
HDJ	Inline	250 or less	15 A	.19
HHJ	Inline	250 or less	15 A	.28
HKP	Panel	250 or less	30 A	.47
HKP-CC	Panel	250 or less	30 A	.47
HKP-H	Panel	250 or less	30 A	.50
HLF	Panel	250 or less	30 A	.47
HMB	Panel	250 or less	30 A	.47
HTA	Panel	250 or less	15 A	.47
9969	Spring nut for panel mounting inline holders			.038
HMJ	HDJ holder w/SFE-20 fuse and wire leads			.38
HRJ	HHJ holder w/SFE-20 fuse and wire leads			.47

NON-INDICATING FOR 9/32 x 1-1/4 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HCM	Panel	250 or less	18 A	$0.70
HCM-H	Panel	250 or less	18 A	.74

VISUAL INDICATING FOR 13/32 x 1-1/2 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HPC-C	Panel	250 or less	30 A	$0.94

LAMP INDICATING FOR 13/32 x 1-1/2 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HGC	Panel	200–500	30 A	$4.70

NON-INDICATING FOR 13/32 x 1-3/8 inch FUSES

Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HPC-L	Panel	600 or less	5 A	$0.75

NON-INDICATING FOR 13/32 x 1-1/2 inch FUSES

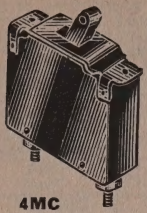
Buss No.	Type of Mount	Fuse Voltage	Cur. Cap.	Net Each
HPC	Panel	250 or less	30 A	$0.75
HPC-D	Panel	250 or less	30 A	1.52

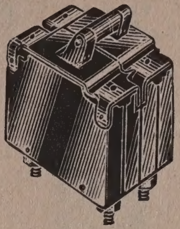
OTHER STANDARD AND SPECIAL FUSES, BLOCKS AND HOLDERS

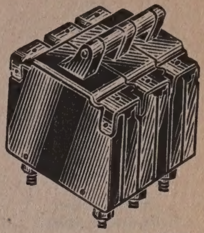
If the fuses, fuse blocks and holders shown do not fit your requirements ask for information on other types. Fuses and fuse mountings to meet JAN and Military specifications also available. If you have a special problem in protection, send description or sketch giving number of circuits, type of fuse, terminals, etc., desired. We welcome such inquiries.

MAGNETIC TYPES

SERIES 4MC, 12MC AND 13MC


4MC


12MC


13MC

- **Current ratings—.020 to 100 amps**
- **Ambient temperature insensitive**
- **Quick response time**
- **Voltage ratings to 60 VDC, 250 VAC, 60 Hz**

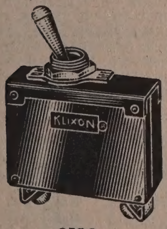
eaturing insensitivity to ambient temperature, and quick response time, magnetic circuit breakers are available in one, two, nd three pole configuration. AC and DC ratings range from .020 100 amps. Breakers can carry 100% rated load and ultimately rip at 125%. **Interruption Capacity:** 5000 amps at 32 VDC; 500 amps at 60 VDC; 2000 amps at 125 VAC; 1000 amps at 50 VAC. **Vibration:** Up to 10G. **Shock:** Up to 50G. **Temperaure:** −65° F to +160° F. **Size:** 1-pole, ¾" x 2½" x 2"; 2-pole, ½" x 2½" x 2"; 3-pole, 2¼" x 2½" x 2".

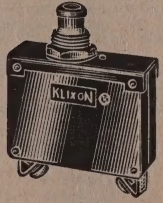
rdering Information: To order, choose the model number from he table below and add the desired current rating. For example, 2MC2-1-**2.5** is a 2-pole breaker with 2.5 amps rating for each pole.

Klixon® Number	Ratings, Amp*	Voltage Maximum	No. of Poles	Auxiliary Circuit	Trip Time (200%) Sec	Net Each, Lots of
4MC1-1	.020–50	60 VDC	1	Yes	.005–.02	Write for Quantity Prices
4MC1-6	.020–50	60 VDC	1	Yes	3–10	
4MC2-1	.020–50	60 VDC	1	No	.005–.02	
4MC2-6	.020–50	60 VDC	1	No	3–10	
4MC1-106	.020–50	250 VAC	1	Yes	.005–.02	
4MC1-104	.020–50	250 VAC	1	Yes	3–10	
4MC2-106	.020–50	250 VAC	1	No	.005–.02	
4MC2-104	.020–50	250 VAC	1	No	3–10	
12MC1-1	.020–50	60 VDC	2	Yes	.005–.02	
12MC1-6	.020–50	60 VDC	2	Yes	3–10	
12MC2-1	.020–50	60 VDC	2	No	.005–.02	
12MC2-6	.020–50	60 VDC	2	No	3–10	
12MC1-206	.020–50	250 VAC	2	Yes	.005–.02	
12MC1-104	.020–50	250 VAC	2	Yes	3–10	
12MC2-106	.020–50	250 VAC	2	No	.005–.02	
12MC2-104	.020–50	250 VAC	2	No	3–10	
13MC1-1	.020–50	60 VDC	3	Yes	.005–.02	
13MC1-6	.020–50	60 VDC	3	Yes	3–10	
13MC2-1	.020–50	60 VDC	3	No	.005–.02	
13MC2-6	.020–50	60 VDC	3	No	3–10	
13MC1-106	.020–50	250 VAC	3	Yes	.005–.02	
13MC1-104	.020–50	250 VAC	3	Yes	3–10	
13MC2-106	.020–50	250 VAC	3	No	.005–.02	
13MC2-104	.020–50	250 VAC	3	No	3–10	

*For 50–100 amps, add a "3" after MC in model number; Example, 4MC31-1-70.

SERIES 2MC, 3MC, 6MC AND 7MC


2MC


3MC

- **Small and lightweight**
- **Push-pull or toggle actuated**
- **Current ratings—.050 to 25 amps**
- **Voltage ratings to 32 VDC, 120 VAC, 60 Hz**
- **Meets MIL-C-5809 requirements (6MC and 7MC)**

Available in both military (6MC and 7MC) as well as commercial (2MC and 3MC) versions, units feature subminiature size and convenient panel mounting (threaded neck mount). These units are fast acting and ambient temperature insensitive. Breaker carries 110% load and ultimately trips at 135%. **Interruption Capacity:** 2500 amps, 32 VDC; 1000 amps, 120 VAC. **Vibration:** Up to 10G (6MC and 7MC). **Temperature:** −54° C to +71° C (6MC and 7MC). **Size:** 1¾" x ⅔" x 2½". Weight, 2 oz.

Ordering Information: To order, choose the model number from the table below and add the desired current rating. For example, 2MC1-100-**10** for 10 amp current rating.

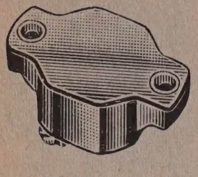
Klixon® Number	Actuator Style	Ratings, Amp	Max. Volts	Auxiliary Circuit	Trip Time 200% Sec	Types 2MC and 3MC, Net Each, Lots of*
2MC1-3, 6MC1-3	Toggle	.250–25	32 DC	No	.005–.02	Write for Quantity Prices
2MC1-5, 6MC1-5	Toggle	.250–25	32 DC	No	.6–4	
2MC3-3, 6MC3-3	Toggle	.250–25	32 DC	Yes	.005–.02	
2MC3-5, 6MC3-5	Toggle	.250–25	32 DC	Yes	.6–4	
2MC1-100, 6MC1-100	Toggle	.250–25	120 AC	No	.005–.025	
2MC1-102, 6MC1-102	Toggle	.250–25	120 AC	No	.7–4	
2MC3-100, 6MC3-100	Toggle	.250–25	120 AC	Yes	.005–.025	
2MC3-102, 6MC3-102	Toggle	.250–25	120 AC	Yes	.7–4	
3MC1-3, 7MC1-3	Push-Pull	.250–25	32 DC	No	.005–.02	
3MC1-5, 7MC1-5	Push-Pull	.250–25	32 DC	No	.6–4	
3MC3-3, 7MC3-3	Push-Pull	.250–25	32 DC	Yes	.005–.02	
3MC3-5, 7MC3-5	Push-Pull	.250–25	32 DC	Yes	.6–4	
3MC1-100, 7MC1-100	Push-Pull	.250–25	120 AC	No	.005–.025	
3MC1-102, 7MC1-102	Push-Pull	.250–25	120 AC	No	.7–4	
3MC3-100, 7MC3-100	Push-Pull	.250–25	120 AC	Yes	.005–.02	
3MC3-102, 7MC3-102	Push-Pull	.250–25	120 AC	Yes	.7–4	

*Contact us for pricing on Military versions, Types 6MC and 7MC.

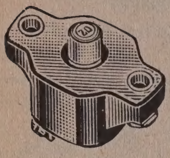
KLIXON® PRECISION CIRCUIT BREAKERS

COMMERCIAL THERMAL TYPES

"C" SERIES AUTOMATIC AND MANUAL RESET*



Type PDA—Automatic Reset



Type PDM—Manual Reset

Designed especially for applications of 30 VDC; may also be used on most 110 or 220 VAC application Extra accurately calibrated, each breaker is individually checked to close tripping limits in controlled 25° ambient temperature, carrying 100% of nominal rating continuously; trip ultimately at not more than 130 of nominal rating. Vibration-proof Klixon snap-acting disc assures positive contact action and ample ruptur capacity. Light, compact design withstands shock and vibration far in excess of 10G. **Type CM:** Manual rese 2" lg. x 1¼" w. x 1¹⁷⁄₆₄" d. behind panel; 8-32 screw terminal; 1.574" mounting centers. **Type CDA:** Weatherpro automatic reset version of CM. **Type CDM:** Weatherproof manual reset version of CDA. **Type CLA:** Automat reset; 3⁵⁄₃₂" lg. x 1⅞" w. x 1⁷⁄₁₆" d.; terminal screws of ¼ x 28 x ½; 2.406" mounting centers. **Type CDL** Weatherproof version of CLA. **Type CDLM:** Weatherproof manual reset version of CLA.

Current Amps	Automatic Reset Types			Manual Reset Types		
	CLA Type	CDA Type	CDLA Type	CM Type	CDM Type	CDLM Type
2	....	CDA-2	....	CM-2	CDM-2	....
3	....	CDA-3	....	CM-3	CDM-3	....
4	....	CDA-4	....	CM-4	CDM-4	....
5	....	CDA-5	....	CM-5	CDM-5	....
6	....	CDA-6	....	CM-6	CDM-6	....
8	....	CDA-8	....	CM-8	CDM-8	....
10	....	CDA-10	....	CM-10	CDM-10	....
12½	....	CDA-12½	....	CM-12½	CDM-12½	....
15	....	CDA-15	....	CM-15	CDM-15	....
17½	....	CDA-17½	....	CM-17½	CDM-17½	....
20	....	CDA-20	....	CM-20	CDM-20	....
25	....	CDA-25	....	CM-25	CDM-25	....
30	....	CDA-30	....	CM-30	CDM-30	....
35	CLA-35	CDA-35	CDLA-35	CM-35	CDM-35	CDLM-35
40	CLA-40	CDA-40	CDLA-40	CM-40	CDM-40	CDLM-40
45	CLA-45	....	CDLA-45	....	....	CDLM-45
50	CLA-50	....	CDLA-50	....	....	CDLM-50
60	CLA-60	....	CDLA-60	....	....	CDLM-60
70	CLA-70	....	CDLA-70	....	....	CDLM-70
80	CLA-80	....	CDLA-80	....	....	CDLM-80
90	CLA-90	....	CDLA-90	....	....	CDLM-90
105	CLA-105	....	CDLA-105	....	....	CDLM-105
120	CLA-120	....	CDLA-120	....	....	CDLM-120
135	CLA-135	....	CDLA-135	....	....	CDLM-135
150	CLA-150	....	CDLA-150	....	....	CDLM-150

*Also available with 110% hold, 130% trip. To order, change C to P in type number; e.g., PDM.

SERIES 7277 LOW AMPERAGE, PUSH-PULL

Designed specifically for commercial applications, the Klixon® 7277 provides fast response time, indication, and push-pull actuation. These features make the 7277 an ideal fuse replacement. The response time is faster than a slo-blow fuse; the white band indicates which circuit has an overload and the push-pull mechanism allows the breaker to be opened. In addition, it can be reset manually, thus saving costly equipment downtime. Available with auxiliary circuit (7277-1). Mounting, ⁷⁄₁₆-32NS-2TH'D. Bushing, 359" lg. Size, .562" w. x 1.420" d. x .750" lg.

Rating, Amps	Klixon® Number	Rating, Amps	Klixon® Number
½	7277-2-½	4	7277-2-4
¾	7277-2-¾	5	7277-2-5
1	7277-2-1	7½	7277-2-7½
1½	7277-2-1½	10	7277-2-10
2	7277-2-2		
3	7277-2-3		

SERIES 7855 HEAVY-LOAD PRECISION TYPE

Automatic and manual reset breakers for weatherproof, precision operation. Ideal for generating equipment and similar heavy-duty use in 105-200 ampere range. Calibrated to close tripping limits; carry 110% of nominal rating continuously with ultimate trip at not more than 130% of nominal rating at 25° C ambient. Shock and corrosion resistance per MIL-STD-202; dustproof per MIL-D-13570. Glass filled melamine case. Size, 4" l. x 2⅛" w. x 2⁷⁄₃₂" d., behind panel Four mtg. holes on 1" x 3½" centers; ⅜-24 stud terminals.

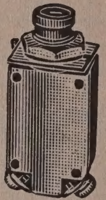
Rating, Amps	Klixon® Number	
	Manual Reset Type	Automatic Reset Type
105	7855-6-105	7855-7-105
120	7855-6-120	7855-7-120
135	7855-6-135	7855-7-135
150	7855-6-150	7855-7-150
160	7855-6-160	7855-7-160
175	7855-6-175	7855-7-175
200	7855-6-200	7855-7-200

SERIES 7235 AND 7236 OVERLOAD SENSING CONTROLS

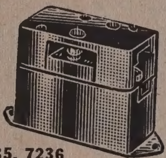
Designed for the remote sensing of overloads in aircraft electrical systems or other applicable remote systems. Protect 28 VDC circuits or 115 VAC single or 3-phase circuits operating at 60 to 1,000 Hz. A 28-volt DC control circuit is required. **Type 7235:** Size, 3⅝" lg. x 1⅜" w. x 2²¹⁄₆₄" d.; mtg. centers 3⅛". Screw terminals on 7, 10, 12 and 15 amp units; stud terminals, all others. **Type 7236:** Size, 4¹¹⁄₁₆" lg. x 1⅝" w. x 2³⁷⁄₆₄" d.; mtg. centers 4³⁄₁₆". Stud terminals.

Klixon® Type	Rating, Amps Available	Contact Resis., Ohms	Contact Rtg., Amps	Cont. Cur. Cap., Amps
7235-1*	7 to 125	0.75	10	3
7235-2	7 to 125	....	10	....
7236-1*	150 to 400	0.75	10	3
7236-2	150 to 400	....	10	....

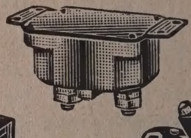
*With limited current resistance built-in for use with 3MC1-3-2 magnetic circuit breaker.



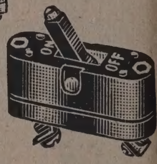
7277-2



7235, 7236



7855



6363

SERIES 6363 AND 6364 SWITCH TYPE CIRCUIT BREAKERS

Combines the function of a toggle switch with a circuit breake in a single, compact device. A thermal disc is used to achiev rapid, snap-acting response to system overloads. Primarily fo systems up to 30 VDC; may also be used on many 115 VA applications where very high rupture capacity is not a critica consideration. **Series 6363:** Covers lower amperages. Size, 2¹³⁄₁₆" lg x ⁴⁹⁄₆₄" w. x 1½" d. behind panel; 8-32 screw terminals; mounts b two 8-32 self-locking inserts on 1.808" centers. **Series 6364:** Fo higher amperages. Size, 2¹³⁄₆₄" lg. x 1³⁵⁄₆₄" w. x 2¹⁄₃₂" d. behind panel ¼-28 x ⅜" screw terminals; mounts by four 8-32 self-lockin inserts on .781" x 1.812" centers.

SERIES 6363

Rating, Amps	Trip-Free Type	Non-Trip Free Type	Momentary Contact Type
2	6363-1-2	6363-2-2	6363-3-2
3	6363-1-3	6363-2-3	6363-3-3
4	6363-1-4	6363-2-4	6363-3-4
5	6363-1-5	6363-2-5	6363-3-5
6	6363-1-6	6363-2-6	6363-3-6
8	6363-1-8	6363-2-8	6363-3-8
10	6363-1-10	6363-2-10	6363-3-10
12.5	6363-1-12.5	6363-2-12.5	6363-3-12.5
15	6363-1-15	6363-2-15	6363-3-15
17.5	6363-1-17.5	6363-2-17.5	6363-3-17.5
20	6363-1-20	6363-2-20	6363-3-20
25	6363-1-25	6363-2-25	6363-3-25
30	6363-1-30	6363-2-30	6363-3-30
35	6363-1-35	6363-2-35	6363-3-35

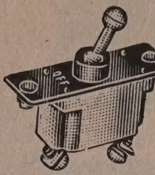
SERIES 6364

Rating, Amps	Trip-Free Type	Non-Trip Free Type	Momentary Contact Type
35	6364-1-35	6364-2-35	....
40	6364-1-40	6364-2-40	....
45	6364-1-45	6364-2-45	....
50	6364-1-50	6364-2-50	....
60	6364-1-60	6364-2-60	....
70	6364-1-70	6364-2-70	....
80	6364-1-80	6364-2-80	....
90	6364-1-90	6364-2-90	....
100	6364-1-100	6364-2-100	....
120	6364-1-120	6364-2-120	....

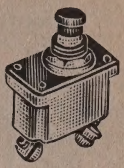
THERMAL AIRCRAFT TYPES

SERIES 7270 AND 7271 MINIATURE AIRCRAFT SWITCH AND PUSH-PULL TYPES

High rupture capacity circuit breaker offers trip-free, snap action; equires a minimum of panel mounting space. Both switch and push-pull types have "conventional" actuator action; i.e., the toggle switch on 7270 moves to the "off" position for trip ndication and the button on the 7271 pops out. Rupture capacity, 3,500 amps, 120 VAC, 400 Hz; 6,000 amps, 30 VDC. **Type 7270-1:** Threaded neck mounting switch type; 1⅜″ lg. x ¾″ w. x 1$\frac{5}{16}$″ d. behind panel; 8-32 screw terminals; $\frac{15}{32}$-32NS threaded bushing ¼″ lg. **Type 7270-7:** Same, but with standard cover plate 2$\frac{3}{16}$″ long with mtg. centers on 1$\frac{13}{16}$″. **Type 7271-8:** Threaded neck mounting push-pull version of 7270-1; neck bushing $\frac{1}{32}$″ lg. **Type 7271-3:** Push-pull version of Type 7270-7.



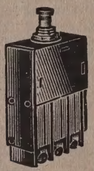
7270-7



7271-8

Rating, Amps	Toggle Type 7270-		Push-Pull Type 7271-	
	Thd. Neck	Military No.	Thd. Neck	Military No.
3	1-3	....	8-3	....
5	1-5	MS24509-5	8-5	MS24510-5
7½	1-7	MS24509-7	8-7	MS24510-7
10	1-10	MS24509-10	8-10	MS24510-10
15	1-15	MS24509-15	8-15	MS24510-15
20	1-20	....	8-20	....
25	1-25	....	8-25	....
30	1-30	....	8-30	....
35	1-35	....	8-35	....

SERIES 7276-101 THREE-PHASE, LOW AMPERAGE, PUSH-PULL TYPE

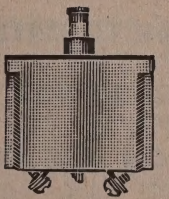


7276-101

Incorporates three single-phase type 7274-2 circuit breakers for low current, three-phase circuit protection. All phases opened and closed manually with single pushbutton. When one is tripped, other two phases also trip for complete protection. Mounting, $\frac{15}{32}$-32NS-2A threaded neck bushing. Size, .850″ w. x 2.765″ d. x 2.0″ lg.

Rating, Amps	Klixon® Number	Rating, Amps	Klixon® Number
½	7276-101-½	3	7276-101-3
¾	7276-101-¾	4	7276-101-4
1	7276-101-1	5	7276-101-5
1½	7276-101-1½	7½	7276-101-7½
2	7276-101-2	10	7276-101-10
2½	7276-101-2½		

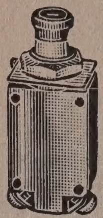
SERIES 6752-2 PUSH-PULL, TRIP-FREE TYPE



6752-2

Thermal type, push-pull, trip-free circuit breaker specially designed for use in large aircraft electrical systems requiring high rupture capacity. It has successfully interrupted circuits adjusted for 6,000 amperes at 30 VDC and 3,500 amps on a 120/208 VAC, 400 cycle system at altitudes up to 50,000 feet. Inherent thermal time delay remains unaffected by transient overloads; unique magnetic assist provides for instantaneous tripping at heavy overloads. Once breaker has opened, it must be manually reset; if, however, a dangerous overload exists, it cannot remain closed even though the pushbutton is fully depressed. Minimum life, 10,000 cycles as an aircraft switch. Glass melamine enclosure is explosion-proof per MIL-E-5272A. Size, 2$\frac{3}{16}$″ l. x ¾″ w. x 2″ d. behind panel. Mounts by 6-32 self-locking nut on 1$\frac{13}{16}$″ centers; 8-32 screw terminals.

Rating, Amps	Klixon® Number	Rating, Amps	Klixon® Number
5	6752-2-5	25	6752-2-25
7½	6752-2-7	30	6752-2-30
10	6752-2-10	35	6752-2-35
15	6752-2-15	50	6752-2-50
20	6752-2-20		



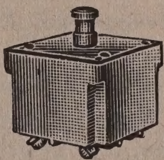
7274-2

TYPE 7274-2 LOW AMPERAGE, PUSH-PULL, MICRO-MINIATURE TYPE

Provides aircraft, radio and electronic equipment industries with a very small size, low amperage, manually operable circuit breaker. Features fast tripping response at various levels of overload for more than adequate protection to low thermal mass components. Offers satisfactory results on most MIL-C-5809C specifications. Threaded neck mtg. Size, ¾″ lg. x $\frac{9}{16}$″ w. x 1.420″ d. behind panel. Also available with auxiliary terminals (7274-4) and larger frame size (7274-11).

Rating, Amps	Type 7274-2		Type 7274-11	
	Klixon® Number	Military Number	Klixon® Number	Military Number
½	7274-2-½	MS26574-½	7274-11-½	MS22073-½
¾	7274-2-¾	MS26574-¾	7274-11-¾	MS22073-¾
1	7274-2-1	MS26574-1	7274-11-1	MS22073-1
1½	7274-2-1½	MS26574-1½	7274-11-1½	MS22073-1½
2	7274-2-2	MS26574-2	7274-11-2	MS22073-2
2½	7274-2-2½	MS26574-2½	7274-11-2½	MS22073-2½
3	7274-2-3	MS26574-3	7274-11-3	MS22073-3
4	7274-2-4	MS26574-4	7274-11-4	MS22073-4
5	7274-2-5	MS26574-5	7274-11-5	MS22073-5
7½	7274-2-7½	MS26574-7½	7274-11-7½	MS22073-7½
10	7274-2-10	MS26574-10	7274-11-10	MS22073-10

SERIES 6760 THREE-PHASE SIMUL-TRIP® CIRCUIT BREAKER

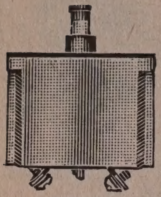


6760-1

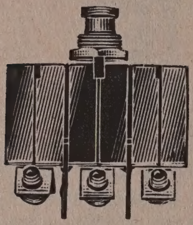
Used with three thermal independent elements, will trip all three circuits simultaneously when an overload occurs in any one of the phases. A single push-pull button opens and recloses all three phases simultaneously. Meets all applicable MIL-C-5809 requirements. Fast tripping time has been tested on 2,500 amps, 120 VAC, 400 Hz within 2 to 4 milliseconds after application of fault. **Type 6760-1:** Size, 2$\frac{13}{64}$″ lg. x 2¼″ w. x 2¼″ d. behind panel; 8-32 screw terminals. Four mtg. holes with 6-32 self-locking nuts on 1.486″ x 1.812″ ctrs. **Type 6760-4:** Same, but only two 6-32 self-locking nut mounts on 1$\frac{13}{16}$″ centers. **Type 6760-5:** Special version of Type 6760-1 available for use in 220/440 V, 400 Hz systems. Available in same ratings as Type 6760-1. Satisfactorily interrupts short circuits approaching 1,000 amps.

Rating, Amps	Four-Hole Mounting Type		Two-Hole Mtg
	Klixon No.®	MIL No.	Klixon® No.
5	6760-1-5	MS21984-5	6760-4-5
7½	6760-1-7	MS21984-7	6760-4-7
10	6760-1-10	MS21984-10	6760-4-10
15	6760-1-15	MS21984-15	6760-4-15
20	6760-1-20	MS21984-20	6760-4-20
25	6760-1-25	MS21984-25	6760-4-25
30	6760-1-30	MS21984-30	6760-4-30
35	6760-1-35	MS21984-35	6760-4-35
50	6760-1-50	MS21984-50	6760-4-50

AMBIENT COMPENSATED THERMAL AIRCRAFT TYPES


6752-12

2TC


6TC

SERIES 6752-12 AMBIENT COMPENSATED PRECISION TYPE

Aircraft push-pull indicating breaker with the same overload tripping characteristics over −65° F to +250° F ambient range. Meets MIL-C-27715 (USAF) and MS24571 specifications. Size, 2.189″ lg. x .750″ w. x 2.370″ d. behind panel. Mounts with 6-32 self-locking nuts on 1.810″ centers.

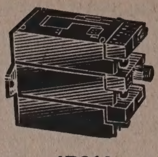
Rating, Amps	Klixon® Number	Military Number	Rating, Amps	Klixon® Number	Military Number
2½	6752-12-2	MS24571-2	20	6752-12-20	MS24571-20
5	6752-12-5	MS24571-5	25	6752-12-25	MS24571-25
7½	6752-12-7	MS24571-7	35	6752-12-35	MS24571-35
10	6752-12-10	MS24571-10	50	6752-12-50	MS24571-50
15	6752-12-15	MS24571-15			

SERIES 2, 3, 6, AND 9TC14 MINIATURE AMBIENT COMPENSATED SINGLE- AND THREE-PHASE PRECISION TYPE

Series TC is the smallest and lightest precision circuit breaker available, offering the exacting performance specifications and reliability required by aircraft and military applications. Available in standard current ratings from 1 to 35 amps in both single- and three-phase versions. Ambient temperature compensated circuit breakers permit system designers to specify smaller gauge wire where circuit breaker and wiring are exposed to different ambient temperatures. Special series 2TC2 has been qualification tested and approved to MIL-C-5809 under Military Standard MS3320. **Series 2TC14:** Single-phase; 1 to 15 amps, 120 VAC, 60 to 400 Hz, 2500-amp rupture; 1 to 20 amps, 120 VAC, 60 to 400 Hz, 2000-amp rupture; 1 to 20 amps, 28 VDC, 6000-amp rupture; size, ¾″ lg. x $\frac{9}{16}$″ w. x 1.218″ d. (behind panel). **Series 3TC14:** Single-phase; 15 to 35 amps, 120 VAC, 60 to 400 Hz, 2000-amp rupture; 15 to 35 amps, 28 VDC, 6000-amp rupture; size, 1.1″ lg. x ¾″ w. x 1.218″ d. (behind panel). **Series 6TC14:** Three-phase; 2 to 10 amps, 120 VAC, 60 to 400 Hz, 2000-amp rupture; size, ¾″ lg. x 1$\frac{25}{32}$″ w. x 1.53″ d. (behind panel). **Series 9TC14:** Three-phase; 1, 15 to 35 amps, 120 VAC, 60 to 400 Hz, 2000-amp rupture; size, 1.1″ lg. x 1.35″ d. (behind panel).

Rating, Amps	Klixon® Number		Special Series 2TC2	
	Single Phase	Three Phase	Klixon® Number	Military Number
1	2TC14-1	9TC14-1	2TC2-1	MS3320-1
2	2TC14-2	6TC14-2	2TC2-2	MS3320-2
2½	2TC14-2½	6TC14-2½	2TC2-2½	MS3320-2½
3	2TC14-3	6TC14-3	2TC2-3	MS3320-3
4	2TC14-4	6TC14-4	2TC2-4	MS3320-4
5	2TC14-5	6TC14-5	2TC2-5	MS3320-5
7½	2TC14-7½	6TC14-7½	2TC2-7½	MS3320-7½
10	2TC14-10	6TC14-10	2TC2-10	MS3320-10
15	2TC14-15	9TC14-15	2TC2-15	MS3320-15
20	2TC14-20	9TC14-20	2TC2-20	MS3320-20
25	3TC14-25	9TC14-25	....	....
30	3TC14-30	9TC14-30	....	....
35	3TC14-35	9TC14-35	....	....

REMOTE CONTROL CIRCUIT BREAKER (RCCB)


4RC1A

3RC1A

Remote control circuit breaker (RCCB) is an electronic/electro-mechanical device designed to function as a contactor and circuit breaker. Available in three types; three phase AC (Model 4RC1A—rating), single phase AC (Model 3RC1A—rating) and DC (Model 3RC1B—rating). These three types control and protect equipment serviced by 115 VAC, 400 Hz, 3 phase; 115 VAC, 400 Hz, single phase; or 28 VDC. All RCCB's are sealed units and have external power and control connection terminals. **Rupture Capacity:** 2800 amps. **Current Ratings:** Single phase AC, 20 amps single phase DC, 5, 7½, 10, 15 and 50 amps; three phase AC, 7½ 10, 15, 35 and 50 amps. **Size:** 4.75″ lg. x 3.375″ w. x 1.35″ d. for single phase AC or DC; 4.75″ lg. x 3.375″ w. x 3.85″ d. for three phase AC.

SERIES 20TC—ROCKER ACTUATED SWITCH TYPE CIRCUIT BREAKER

Provides dual function of a rocker actuated switch and circuit breaker in a single, compact package. The snap-on actuators are available in a variety of colors, styles and indication markings. Current ratings range from 3 to 35 amps at 30 VDC or 120 VAC (60–400 Hz). Trip time at 200% overload; 10–130 sec. Size, 1.375″ lg. x .750″ w. x 1.624″ d. behind panel; #8-32 screw terminals; #6-32 mounting holes 1.620″ apart.

Ordering Information: Order by complete part number. Part number consists of four parts: Basic type—20TC2; actuator style (see table below); actuator color (see table below); ampere rating (see table below). For example, **20TC2-BC-20** is a smooth rocker switch, grey color, and is rated for 20 amps.

Actuator Style		Actuator Colors		Available Ratings, Amps
Code	Style	Code	Color	
A	Serrated	A	White	3
B	Smooth	B	Black	5
E	Smooth Off-On Marking	C	Grey	7
		D	Red	10
		E	Blue	15
		F	Transparent	20
		G	Translucent	25
				30
				35

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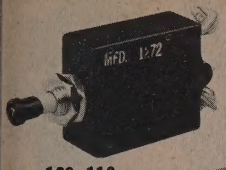
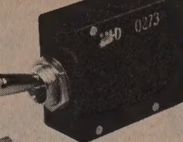
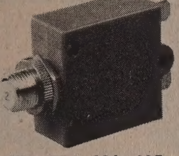
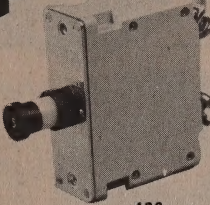
WOOD ELECTRIC CIRCUIT BREAKERS

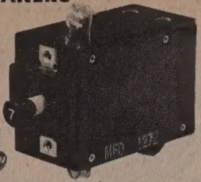
THERMAL CIRCUIT BREAKERS

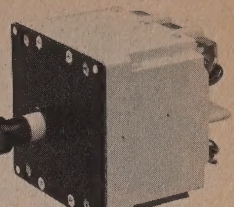

109, 110, 111

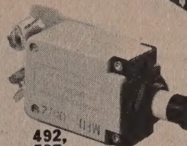

112, 548


374, 375, 431, 435


436


114


437


492, 507

Thermal AC-DC circuit breakers pass safe surge currents and momentary overloads, but trip on dangerous overloads and short circuits. Breakers contain trip-free mechanism which allows contacts to open on overload even if manually held in reset position. Pushbutton models feature visible trip indication in the form of a white band which appears when the reset button extends on overload. Contacts have wiping action on make and break to help insure positive, clean contact. All metallic latching materials are heat treated and plated for long life.

MODELS 109 AND 110

Models 109 and 110 thermal circuit breakers feature a white band on the body of the reset button which becomes visible upon breaker trip. Maximum operating voltages are 50 VDC and 250 VAC (to 400 Hz). Interruption capacities are 3000 amps at 250 VAC and 5000 amps at 50 VDC. Use #8-32 screw terminals and mount with two ⅜-24 dress nuts. Model 109 has screw terminals situated at 90° to each other. Model 110 has screw terminals situated parallel to each other. Size, .690″ w. x 1.600″ d. x 1.375″ h. Weight, less than 2 oz.

Wood Model 109—Net Each........................**$4.40**
Wood Model 110—Net Each........................**4.55**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
109-205-101	5	**109-220-101**	20	**109-240-101**	40
109-507-101	7.5	**109-225-101**	25	**109-250-101**	50
109-210-101	10	**109-230-101**	30	**109-260-101**	60
109-215-101	15	**109-235-101**	35	**110-205-102**	5

MODEL 111

Model 111 thermal circuit breaker insures fast trip by employing a heater wire in close proximity to the thermal contact arm. Heat generated by overload currents flowing through the wire quickly activates the thermal contact and opens the circuit. Maximum operating voltages are 32 VDC and 250 VAC (to 400 Hz). Interruption capacity is over 100 amps at 250 VAC, and 150 amps at 32 VDC. Has #8-32 screw terminals and mounts with a single ⅜-24 dress nut. Size, .690″ w. x 1.600″ d. x 1.375″ h. Weight, less than 2 oz.

Wood Model 111—Net Each........................**$9.50**

Wood Model	Rating, Amps	Wood Model	Rating, Amps
111-201-101	1	**111-203-101**	3
111-202-101	2	**111-204-101**	4

MODELS 112 AND 548

Models 112 and 548 thermal circuit breakers feature toggle trip. Model 112 has a plain steel toggle with rating marked on the end. Model 548 has a silver toggle with no rate marking. Maximum operating voltages are 32 VDC and 250 VAC (to 400 Hz). Interruption capacity is over 3000 amps at 250 VAC and 5000 amps at 50 VDC. Use #8-32 screw terminals and mount with a single dress nut. Size, .690″ w. x 1.600″ d. x 1.375″ h. Weight, less than 2 oz.

Wood Model 112—Net Each........................**$4.70**
Wood Model 548—Net Each........................**5.70**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
112-205-101	5	**112-220-101**	20	**112-240-101**	40
112-507-101	7.5	**112-225-101**	25	**112-250-101**	50
112-210-101	10	**112-230-101**	30	**548-205-106**	5
112-215-101	15	**112-235-101**	35	**548-210-106**	10

MODEL 114

Model 114 thermal circuit breaker features auxiliary SPDT switch electrically isolated but mechanically connected to the breaker circuit. SPDT contacts rated 5 amps at 120 VAC or 1 amp at 50 VDC. Maximum operating voltages are 32 VDC and 250 VAC (to 400 Hz). Interruption capacity is over 200 amps at 250 VAC and 300 amps at 32 VDC. Mounts with two #6-32 panel-mount screws. Termination of breaker contacts is to two #6-32 screw terminals; of the auxiliary switch, to three #53 taper receptacles. Size, .930″ w. x 1.875″ d. x 1.344″ h. Weight, less than 3 oz. UL Recognized, File E39205, except 114-209-101.

Wood Model 114—Net Each........................**$10.90**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
114-201-101	1	**114-206-101**	6	**114-215-101**	15
114-202-101	2	**114-207-101**	7	**114-220-101**	20
114-203-101	3	**114-209-101**	9	**114-225-101**	25
114-205-101	5	**114-210-101**	10		

MODELS 374, 375, 431 AND 435

Thermal circuit breakers feature recessed reset button which cannot be manually pulled out to disconnect the circuit. The button has a red band around it for visible trip indication. Maximum voltage ratings are 50 VDC and 250 VAC (to 400 Hz). Interruption capacity: Models 374 and 431, over 1000% of rated load; Models 375 and 435, 1,000 amps, minimum. Quick-connect terminals on Models 374 and 375; #6-32 screw terminals on Models 431 and 435. Mounting is with knurled thumb nut on bushing. Size, .660″ w. x 1.375″ d. x 1.375″ h. Weight, less than 1.5 oz. Models 374 and 375 (except 8, 12, 20, 30 and 35 amp units) are UL Recognized under File E39205 and listed under CSA File 30671.

Wood Model 374—Net Each........................**$2.80**
Wood Model 375—Net Each........................**1.70**
Wood Model 431—Net Each........................**3.85**
Wood Model 435—Net Each........................**2.75**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
374-201-101	1	**375-215-101**	15	**435-206-101**	6
374-202-101	2	**375-220-101**	20	**435-207-101**	7
374-203-101	3	**375-225-101**	25	**435-208-101**	8
374-204-101	4	**375-230-101**	30	**435-210-101**	10
375-205-101	5	**375-235-101**	35	**435-212-101**	12
375-206-101	6	**431-201-101**	1	**435-215-101**	15
375-207-101	7	**431-202-101**	2	**435-220-101**	20
375-208-101	8	**431-203-101**	3	**435-225-101**	25
375-210-101	10	**431-204-101**	4	**435-230-101**	30
375-212-101	12	**435-205-101**	5	**435-235-101**	35

MODEL 436

Model 436 thermal circuit breaker has a special magnet which assists during millisecond tripping of heavy overloads. Reset button has white band around it for visible trip indication. Meets MIL-C-5809 and MIL drawing MS-25017 (ASG). Maximum voltage ratings are 28 VDC and 120 VAC (to 400 Hz). Will safely interrupt over 3500 amps at 120 VAC, and 6000 amps at 28 VDC. Termination to #8-32 screw terminals; mounting is with #6-32 screws. Size, .750″ w. x 1.66″ d. x 2.189″ h. Weight, less than 3 oz.

Wood Model 436—Net Each........................**$8.40**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
436-205-101	5	**436-220-101**	20	**436-240-101**	40
436-507-101	7.5	**436-225-101**	25	**436-250-101**	50
436-210-101	10	**436-230-101**	30		
436-215-101	15	**436-235-101**	35		

MODEL 437

Model 437 thermal circuit breaker is a 3-phase, magnetic assist breaker with a white band around the reset button for visible trip indication. Excessive current flow in any of the three lines causes all contacts to open. Meets MIL-C-5809 and military drawing MS-21984. Maximum voltage rating: Single phase, 120 VAC; three phase, 208 VAC. Will safely interrupt over 1,000 amps at 208 VAC. 3 phase, to 400 Hz; or 2,500 amps at 120 VAC, single phase, to 400 Hz. Six 8-32 screw terminals, four 6-32 mounting screws. Size, 2.250″ w. x 2.125″ d. x 2.203″ h. Weight, less than 8 oz.

Wood Model 437—Net Each........................**$74.70**

Wood Model	Rating, Amps	Wood Model	Rating, Amps
437-205-101	5	**437-210-101**	10
437-507-101	7.5	**437-215-101**	15

MODELS 492 AND 507

Models 492 and 507 thermal circuit breakers have a white band around the base of the reset button which becomes visible upon breaker trip. Model 507 meets MS MIL-C-5809 and MIL drawing MS25244. Model 492 has a glass melamine barrier on one side of its housing. Maximum operating voltages are 28 VDC and 120 VAC (to 400 Hz). Will safely interrupt over 3500 amps at 120 VAC and and 6000 amps at 28 VDC. Size, .750″ w. x 1.490″ d. x 1.094″ h. Weight, 2 oz.

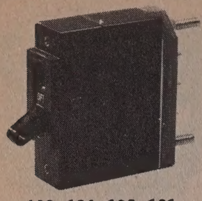
Wood Model 492—Net Each........................**$8.85**
Wood Model 507—Net Each........................**8.10**

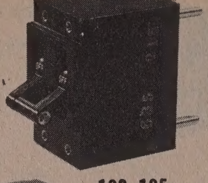
Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
492-205-102	5	**492-235-102**	35	**507-225-101**	25
492-507-102	7.5	**507-205-101**	5	**507-230-101**	30
492-210-102	10	**507-507-101**	7.5	**507-235-101**	35
492-215-102	15	**507-210-101**	10	**507-240-101**	40
492-220-102	20	**507-215-101**	15	**507-250-101**	50
492-225-102	25	**507-220-101**	20		

SEE NEXT PAGE FOR TRIP TIME VALUES

AMF | POTTER & BRUMFIELD
WOOD ELECTRIC OPERATIONS

WOOD ELECTRIC CIRCUIT BREAKERS


122, 124, 130, 131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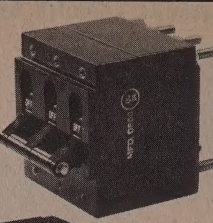
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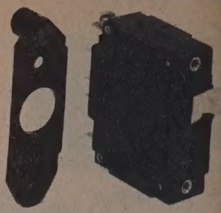
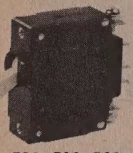
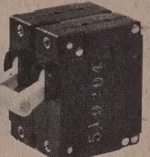

Adapter Plate


508, 511, 512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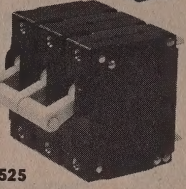
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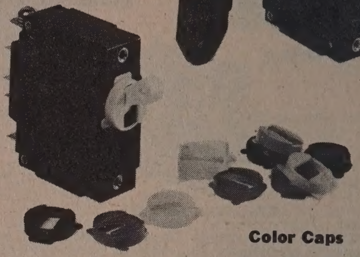

Color Caps

MAGNETIC-HYDRAULIC CIRCUIT BREAKERS

Highly versatile magnetic-hydraulic circuit breakers pass safe surge currents and momentary overloads, but trip on dangerous overloads. Trip times range from instantaneous on loads of approximately 800% of rating and higher, to 0.5 sec or more at 200% of load. (Model 130 is instantaneous, it has no time delay.) Between the must-trip values of 101%–125% of load, at DC to 60 Hz, breakers are temperature stable from −49° C or lower to +85° C. Contacts have wiping action on make and break to insure positive, clean contact. Breakers contain a trip-free mechanism which allows contacts to open on overload even if manually held in reset position. Maximum operating voltages are 50 VDC and 250 VAC. Interruption capacities are 1000 amps at 250 VAC, 2000 amps at 50 VDC. UL Recognized, File E39205, except Model 256.

MODELS 122, 124, 130, 131 SPST CIRCUIT BREAKERS

Mount with #6-32 screws. Models 122, 124 and 130 have quick-connect solder terminals. Model 131 has #10-32 stud terminals. Model 130 features auxiliary SPDT switch with quick-connect solder terminals. Max. Voltage: Models 130, 131, 50 VDC; others 250 VAC, 60 Hz. Size, .760″ w. x 2″ d. x 2.53″ h.

Wood Model 130—Net Each **$9.40**
Wood Models 122, 124, 131—Net Each **7.20**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
122-201-101	1	**122-235-101**	35	**130-210-101**	10
122-202-101	2	**122-240-101**	40	**130-215-101**	15
122-203-101	3	**122-250-101**	50	**130-220-101**	20
122-204-101	4	**124-205-101**	5	**130-225-101**	25
122-205-101	5	**124-210-101**	10	**130-230-101**	30
122-207-101	7	**124-215-101**	15	**130-235-101**	35
122-210-101	10	**130-201-101**	1	**130-240-101**	40
122-215-101	15	**130-202-101**	2	**130-250-101**	50
122-220-101	20	**130-203-101**	3	**131-210-101**	10
122-225-101	25	**130-205-101**	5		
122-230-101	30	**130-207-101**	7		

MODELS 190 AND 195 DPST CIRCUIT BREAKERS

Trip on dangerous overloads. An overload in either of the two circuits will disconnect both circuits. Breakers have #6-32 screw, #10-32 stud terminals. Max. voltage, 250 VAC, 60 Hz. Size, 1.530″ w. x 2″ d. x 2.530″ h.

Wood Models 190 and 195—Net Each **$18.65**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
190-201-101	1	**190-210-101**	10	**190-240-101**	40
190-202-101	2	**190-215-101**	15	**190-250-101**	50
190-203-101	3	**190-220-101**	20	**195-215-101**	15
190-204-101	4	**190-225-101**	25	**195-220-101**	20
190-205-101	5	**190-230-101**	30	**195-230-101**	30
190-207-101	7	**190-235-101**	35	**195-250-101**	50

MODELS 220 AND 256 3PST CIRCUIT BREAKERS

Disconnect on all three circuits if an overload occurs on any of the three circuits. Breakers have #6-32 screw mounting, and #10-32 stud terminals. Maximum Voltage: Model 220, 250 VAC, 60 Hz. Model 256, 250 VAC to 400 Hz. Size, 2.280″ w. x 2″ d. x 2.530″ h.

Wood Model 220—Net Each **$28.70**
Wood Model 256—Net Each **37.65**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
220-201-101	1	**220-210-101**	10	**220-240-101**	40
220-202-101	2	**220-215-101**	15	**220-250-101**	50
220-203-101	3	**220-220-101**	20	**256-205-101**	5
220-204-101	4	**220-225-101**	25	**256-210-101**	10
220-205-101	5	**220-230-101**	30	**256-215-101**	15
220-207-101	7	**220-235-101**	35	**256-230-101**	30

"MINI-MAG" MAGNETIC-HYDRAULIC CIRCUIT BREAKERS

"Mini-Mag" series magnetic-hydraulic circuit breakers feature SPST, DPST and 3PST models in small case sizes. Pass safe surge currents and momentary overloads, but trip on dangerous overloads. Trip times from instantaneous on loads of approx. 800% of rating and higher, to 0.5 sec or more at 200% of load. Between must-trip values of 101%–125% of load from DC to 60 Hz, breakers temp. stable from −49° C or lower, to +85° C. Contacts wipe on make and break. Trip-free mechanism allows contacts to open on overload even if manually held in reset position. UL Recognized, File E39205.

MODELS 508, 511 AND 512 SPST CIRCUIT BREAKERS

Mount with #6-32 screws. .032″ x .250″ quick-connect/solder terminals. Model 508 has aux SPDT switch with solder terminals. Max. Volt.: 250 VAC, 60 Hz. Size, .750″ w. x 1.500″ d. x 2″ h.

Wood Model 508—Net Each **$6.45**
Wood Models 511 and 512—Net Each **5.40**

Wood Model	Rating, Amps	Wood Model	Rating, Amps	Wood Model	Rating, Amps
508-205-101	5	**511-215-101**	15	**512-205-101**	5
511-050-101	0.5	**511-220-101**	20	**512-207-101**	7
511-201-101	1	**511-225-101**	25	**512-210-101**	10
511-202-101	2	**511-230-101**	30	**512-215-101**	15
511-203-101	3	**512-050-101**	0.5	**512-220-101**	20
511-204-101	4	**512-201-101**	1	**512-225-101**	25
511-205-101	5	**512-202-101**	2	**512-230-101**	30
511-207-101	7	**512-203-101**	3		
511-210-101	10	**512-204-101**	4		

MODEL 518 DPST CIRCUIT BREAKER

Trips on dangerous overloads. An overload in either circuit will disconnect both circuits. Breaker has #6-32 screw mtg., quick-connect solder terminals. Max. voltage, 250 VAC, 60 Hz. Size, 1.500″ sq. x 2″ h.

Wood Model 518—Net Each **$14.00**

518-050-101	0.5	**518-204-101**	4	**518-215-101**	15
518-201-101	1	**518-205-101**	5	**518-220-101**	20
518-202-101	2	**518-207-101**	7	**518-225-101**	25
518-203-101	3	**518-210-101**	10	**518-230-101**	30

MODEL 525 3PST CIRCUIT BREAKER

Disconnects all three circuits if an overload occurs in any of the circuits. Has #6-32 screw mtg., quick-connect solder terminals. Max. voltage, 250 VAC, 60 Hz. Size, 2.250″ w. x 1.500″ d. x 2″ h.

Wood Model 525—Net Each **$22.10**

525-050-101	0.5	**525-204-101**	4	**525-215-101**	15
525-201-101	1	**525-205-101**	5	**525-220-101**	20
525-202-101	2	**525-207-101**	7	**525-225-101**	25
525-203-101	3	**525-210-101**	10	**525-230-101**	30

COLOR CAPS

"Mini-Mag" colored caps available to help identify breakers in various circuits. Caps snap in place over breaker handle.

Wood Color Caps—Box of 25, Each Color, Net **$1.75**

Order No.	Cap Color	P & B Part No.	Order No.	Cap Color	P & B Part No.
9WD1	Black	23-001A	**9WD6**	Green	23-001F
9WD2	Brown	23-001B	**9WD7**	Blue	23-001G
9WD3	Red	23-001C	**9WD8**	Gray	23-001H
9WD4	Orange	23-001D	**9WD9**	White	23-001J
9WD5	Yellow	23-001E			

ADAPTER PLATE

"Mini-Mag" adapter plate allows circuit breaker to be mounted in a regular sized magnetic-hydraulic breaker panel cutout. Adapter plate screws in regular panel cutout and "Mini-Mag" mounts to it.

Wood Model #96-220, Order No. 9WD10. Net/Box of 10... **$2.00**

TRIP TIME VS. PERCENT OF LOAD

Wood Model	Trip Time in Seconds at		Wood Model	Trip Time in Seconds at	
	200% of Load	800% of Load		200% of Load	800% of Load
109-	8–20	0.22–0.77	**130-**	.009–.04	.0083–.038
110-	8–20	0.22–0.77	**131-**	2.5–8.0	.012–.067
111-	.55–1.7	.018–.08	**190-**	3–10	.045–.15
112-	8–20	0.22–0.77	**195-**	.25–0.8	.012–.04
114-	13–30	.33–0.9	**220-**	3–10	.045–.15
122-	3–10	.045–.15	**256-**	.23–.85	.01–.03
124-	.25–0.8	.012–.04	**374-**	9–30	1.5–3.2

Wood Model	Trip Time in Seconds at		Wood Model	Trip Time in Seconds at	
	200% of Load	800% of Load		200% of Load	800% of Load
375-	5.8–40	.54–.94	**508-**	2.3–20	.007–.15
431-	9–30	1.5–3.2	**511-**	2.3–20	.007–.15
435-	5.8–40	.54–.94	**512-**	.16–1.6	.003–.07
436-	15–55	0.6–2.2	**518-**	2.3–20	.007–.15
437-	15–75	.58–2.7	**525-**	2.3–20	.007–.15
492-	15–49	0.4–0.9	**548-**	8–20	.32–.78
507-	15–49	0.4–0.9			

HICAGO MINIATURE LAMP WORKS

SPECIALISTS IN DESIGN & MANUFACTURE OF MINIATURE ILLUMINATING, INDICATING AND ENERGY EMITTING DEVICES

This is a partial listing of miniature and subminiature lamps. Miniature lamps are most commonly used in numerous applications for panel indicators, aircraft, flashlight and radio or TV pilot lights. The subminiature lamps were specifically designed for modern, up-to-date special equipment such as computers, miniature switches, medical electronic equipment, aircraft, aerospace, etc. Many other uses are met where the ultimate in precision miniature lamp techniques is demanded. Engineered to military specifications, they are used as standards on many classified government projects and business machines. Lamps listed herein are the most popular types available from Chicago Miniature. If your application requires a special lamp or one not shown, send us your application needs. We will be pleased to submit our recommendations.

MINIATURE LAMPS

Lamp No.	Design		MSCP*	Base		Net/10-Pack		
	V	A	Approx.	Fig.	Bulb	1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
R-2	2.38	.50	.80	G§	B-3½	$ 1.50	$ 1.30	$ 1.10
R-3*	3.57	.50	1.50	G§	B-3½	1.50	1.30	1.10
R-4	2.33	.27	.40	G§	B-3½	1.50	1.30	1.10
R-6*	2.47	.30	.45	G§	B-3½	1.50	1.30	1.10
R-7	3.70	.30	.90	G	B-3½	2.20	1.70	1.50
R-12	5.95	.50	3.10	G§	B-3½	1.50	1.30	1.10
R-13	4.75	.50	2.20	G§	B-3½	1.50	1.30	1.10
R-16	12.5	.25	.27	G	B-3½	2.10	1.60	1.40
2	6.3	.15	.35	Q	G-3½	2.10	1.70	1.40
3*	3.7	.30	.98	H	G-3½	1.30	1.10	.90
4*	2.47	.30	.50	H	G-3½	1.30	1.10	.90
7*	4.9	.30	1.4	H	G-4½	1.60	1.30	1.10
1*	6.15	.30	2.0	H	G-4½	2.10	1.60	1.40
0*	6.3	.15	.52	H	T-3¼	1.10	.90	.80
2*	3.2	.35	.50	H	T-3¼	2.70	2.30	1.90
3	2.5	.50	.50	J	T-3¼	2.20	1.70	1.50
4*	6.3	.25	.90	J	T-3¼	1.10	.90	.80
5*	3.2	.35	.50	J	T-3¼	1.70	1.40	1.20
6*	6.3	.25	.90	H	T-3¼	1.10	.90	.80
7*	6.3	.15	.52	J	T-3¼	1.10	.90	.80
8	2.0	.06	.04	H	T-3¼	2.20	1.70	1.50
9	2.0	.06	.04	J	T-3¼	1.70	1.40	1.20
0	7.5	.22	1.0	H	G-3½	1.30	1.10	.90
1*	7.5	.22	1.0	J	G-3½	1.10	.90	.80
3*	14.4	.12	1.0	J	G-3½	1.20	1.00	.90
5*	7.0	.41	2.0	J	G-4½	1.20	1.00	.90
7	14.0	.24	2.0	J	G-4½	1.30	1.10	.90
7*	13.5	.59	4.0	K	G-6	1.60	1.30	1.10
8*	13.5	.59	4.0	L	G-6	2.40	1.90	1.60
2	22.0	.18	3.0	L	G-6	3.60	2.80	2.50
2*	6.5	1.05	6.0	L	G-6	1.80	1.50	1.30
7*	6.8	1.91	15.0	K	S-8	2.90	2.40	2.10
8*	6.8	1.90	15.0	L	S-8	2.90	2.40	2.10
8L	6.8	2.0	15.0	L	S-8	7.80	6.40	5.40
0*	13.0	.58	6.0	L	G-6	1.70	1.40	1.20
3*	12.8	1.04	15.0	K	S-8	2.50	1.90	1.70
4*	12.8	1.0	15.0	L	S-8	2.80	2.30	1.90
13	1.3	.22	....	H	GTL-3	2.60	2.10	1.70
23	1.25	.30	10.0	H	G-3½	1.40	1.10	1.00
31*	1.3	.10	.03	H	G-3½	1.50	1.20	1.10
36	1.25	.60	.20	H	G-4½	1.80	1.50	1.30
59	6.3	.15	3.8	R	T-3¼	2.10	1.70	1.40
09	6.5	1.78	15.0	K	B-6	3.10	2.60	2.20
22*	2.25	.25	....	H	GTL-3	1.30	1.10	.90
24	2.15	.22	....	SP‡	GTL-2¾	1.80	1.50	1.30
33	2.33	.27	.42	H	G-3½	1.90	1.50	1.30
39	6.3	.36	.67	J	T-3¼	2.50	1.90	1.70
40	6.3	.36	.67	J	T-3¼	2.30	1.80	1.50
45	2.46	.50	.90	H	G-3½	2.10	1.60	1.40
52	2.5	.35	....	D	GTL-1¾	24.40	19.90	17.00
53X	2.5	.35	....	D	GTL-1¾	29.60	24.00	20.50
61	2.5	.35	....	B	GTL-1¾	47.50	38.60	33.00
01*	28.0	.17	3.0	K	G-5	3.50	2.80	2.40
04*	28.0	.30	6.0	L	G-6	4.00	3.20	2.70
05*	28.0	.51	15.0	K	S-8	6.30	5.10	4.30
07*	28.0	.66	21.0	K	S-8	5.60	4.50	3.90
09	28.0	.90	32.0	K	S-11	6.50	5.30	4.50
13*	28.0	.17	.35	J	T-3¼	2.60	2.20	1.80
23*	3.0	.19	.250	P	T-1¼	11.70	9.50	8.10
24	3.0	.19	.250	S	T-1¼	4.90	4.00	3.40
325	3.0	.19	.250	T‡	T-1¼	14.60	11.80	10.00
327*	28.0	.04	.340	D	T-1¾	5.20	4.20	3.60
327LSV	28.0	.06	.340	D	T-1¾	11.30	9.20	7.90
328*	6.0	.20	.60†	D	T-1¾	4.10	3.40	2.80
330	14.0	.08	.500	D	T-1¾	6.90	5.60	4.80
331	1.35	.06	.01	D	T-1¾	8.00	6.50	5.50
334	28.0	.04	.340	B	T-1¾	7.80	6.30	5.40
334LSV	28.0	.06	.340	B	T-1¾	14.10	11.40	9.80
337	6.0	.20	.60	B	T-1¾	14.00	11.40	9.80
344	10.0	.014	.002	B	T-1¾	11.20	9.10	7.70
346	18.0	.04	.15	B	T-1¾	10.30	8.30	7.10
363	14.0	.20	2.0	J	G-3½	1.80	1.50	1.30
370	18.0	.04	.15	D	T-1¾	12.40	10.00	8.60
375	3.0	.015	.003	D	T-1¾	20.50	16.70	14.30
380	6.3	.04	.020	D	T-1¾	17.30	14.00	12.00
381	6.3	.20	.40	D	T-1¾	9.20	7.50	6.40
386	14.0	.08	.30	B	T-1¾	12.50	10.20	8.80
387*	28.0	.04	.30	D	T-1¾	5.90	4.90	4.10
388	28.0	.04	.30	B	T-1¾	12.50	10.20	8.60
425	5.0	.50	2.3	H	G-4½	1.70	1.40	1.20
502	5.1	.15	.60	H	G-4½	1.40	1.10	1.00
503	5.1	.15	.60	J	G-4½	1.80	1.50	1.30
509K	24.0	.18	2.8	E	G-6	5.50	4.40	3.80

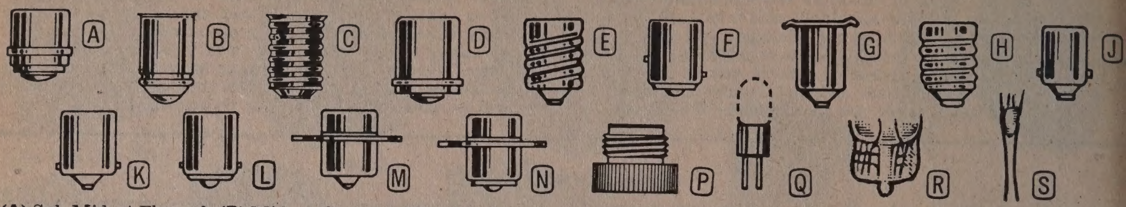
Lamp No.	Design		MSCP*	Base		Net/10-Pack		
	V	A	Approx.	Fig.	Bulb	1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
605	6.15	.50	3.4	H	G-4½	$ 1.90	$ 1.50	$ 1.30
958	5.5	2.00	14.0	L	G-16½	38.90	31.60	27.00
	6.0	.82	5.0					
965	9.8	.50	6.0	H	T-4½	2.50	1.90	1.70
1003	12.8	.94	15.0	K	B-6	2.40	1.90	1.60
1004	12.8	.94	15.0	L	B-6	2.40	1.90	1.60
1034	12.8	1.80	32.0	F	S-8	3.30	2.70	2.40
	14.0	.51	4.0					
1047	26.0	2.70	105.00	K	RP-11	10.30	8.30	7.10
1073*	12.8	1.80	32.00	K	S-8	2.40	1.90	1.60
1129*	6.4	2.63	21.00	K	S-8	2.50	2.10	1.70
1130*	6.4	2.00	21.00	L	S-8	3.30	2.70	2.30
1133*	6.2	3.91	32.00	K	RP-11	4.30	3.60	3.00
1141*	12.8	1.44	21.00	K	S-8	2.40	1.90	1.60
1142*	12.8	1.44	21.00	L	S-8	2.80	2.30	1.90
1143*	12.5	2.00	32.00	K	RP-11	5.70	4.60	4.00
1154*	6.4	2.63	21.00	F	S-8	3.10	2.60	2.20
	7.0	.75	3.0					
1184*	5.5	6.25	50.00	L	RP-11	6.20	5.00	4.20
1209	6.1	4.10	32.00	M	RP-11	10.90	8.90	7.60
1224	34.0	.16	3.8	E	G-6	5.30	4.30	3.70
1240*	32.0	3.5	225.0	N	G-16½	17.40	14.10	12.10
1251*	28.0	.23	3.0	K	G-6	4.00	3.20	2.80
1252*	28.0	.23	3.0	L	G-6	4.50	3.70	3.10
1385*	28.0	.....	20W	K	R-12	19.40	15.80	13.50
1449	14.0	.20	2.0	H	G-3½	1.40	1.10	1.00
1458	20.0	.25	4.2	H	G-5	2.90	2.40	1.90
1471	12.0	.26	2.3	E	G-6	5.90	4.90	4.10
1476	18.0	.17	2.2	H	T-3	4.30	3.60	3.00
1477	24.0	.17	3.3	H	T-3	5.40	4.40	3.80
1483	6.0	.04	.10	H	G-4½	2.80	2.30	1.90
1487	14.0	.20	1.4	H	T-3¼	2.20	1.70	1.50
1488	14.0	.15	1.5	J	T-3¼	2.30	1.80	1.60
1489	6.5	2.75	25.0	K	T-5	25.70	20.80	17.80
1490	3.2	.16	.20	J	T-3¼	1.70	1.40	1.20
1491*	2.4	.80	1.3	L	G-8	9.00	7.20	6.20
1493	6.5	2.80	23	L	S-8	10.20	8.30	7.00
1503	5.9	6.53	50	M	RP-11	12.60	10.30	8.90
1630	6.5	2.75	23.0	N	S-8	13.30	10.80	9.30
1705	14.0	.08	.50	S	T-1¾	5.40	4.40	3.80
1728	1.35	.06	.01	S	T-1¾	4.00	3.20	2.80
1738	2.7	.06	.04	S	T-1¾	4.00	3.20	2.80
1763	6.1	4.10	32.0	M	S-11	12.30	10.00	8.50
1764	28.0	.04	.34	M	T-1¾	4.40	3.60	3.10
1764LSV	28.0	.06	.34	M	T-1¾	7.30	5.90	5.10
1767*	2.5	.20	.22	C	T-1¾	6.40	5.20	4.40
1768*	6.0	.20	.60	C	T-1¾	7.60	6.20	5.20
1783	2.5	.20	.22	S	T-1¾	3.90	3.10	2.70
1813	14.4	.10	.86	J	T-3¼	2.30	1.80	1.50
1815*	14.0	.20	1.4	J	T-3¼	1.90	1.50	1.30
1816	13.0	.33	3.0	J	T-3¼	1.80	1.50	1.30
1819*	28.0	.04	.34	J	T-3¼	2.80	2.30	1.90
1820	28.0	.10	1.6	J	T-3¼	3.00	2.40	2.10
1821	28.0	.17	3.5	H	T-3¼	6.60	5.30	4.50
1822	36.0	.10	2.5	J	T-3¼	5.20	4.20	3.70
1828	37.5	.05	.65	J	T-3¼	5.60	4.50	3.90
1829*	28.0	.07	1.0	J	T-3¼	2.90	2.40	2.10
1835	55.0	.05	1.1	J	T-3¼	6.40	5.20	4.40
1847	6.3	.15	.38	J	T-3¼	1.50	1.20	1.10
1850	5.0	.09	.25	J	T-3¼	2.90	2.40	2.10
1855	6.3	.80	3.6	J	T-4½	3.00	2.50	2.20
1866	6.3	.25	.65	J	T-3¼	1.80	1.50	1.30
1869	10.0	.014	.002	S	T-1¾	9.60	7.80	6.70
1891	14.0	.24	2.0	J	T-3¼	1.30	1.10	1.00
1892	14.4	.12	.75	J	T-3¼	2.20	1.70	1.50
1893	14.0	.33	2.0	J	T-3¼	1.50	1.20	1.10
2102	18.0	.04	.15	S	T-1¾	7.10	5.80	5.00
2107	10.0	.04	.08	S	T-1¾	10.90	8.90	7.60
2112	6.3	.20	.55	S	T-1¾	6.50	5.30	4.50
2124	2.5	.35	....	S	GTL-1¾	18.40	14.90	12.70
2158	3.0	.015	.003	S	T-1¾	11.30	9.20	7.90
2162	14.0	.088	.100	S	T-1¾	5.50	4.50	3.90
2180	6.3	.04	.02	S	T-1¾	9.20	7.50	6.40
2181	6.3	.20	.40	S	T-1¾	5.00	4.00	3.50
2182	14.0	.08	.30	S	T-1¾	5.30	4.30	3.70
2185	28.0	.04	.20	S	T-1¾	9.20	7.50	6.40
2187	28.0	.04	.30	S	T-1¾	7.80	6.30	5.40

*Mean Spherical Candlepower is the measurement of the total integrated light output of the lamp operated at design voltage. †At 5 volts. ‡Special, not illustrated. ***See following page for MS numbers.** §Single Contact.

CHICAGO MINIATURE LAMP WORKS

SPECIALISTS IN DESIGN & MANUFACTUR
OF MINIATURE ILLUMINATING, INDICAT
ING AND ENERGY EMITTING DEVICES

BASE STYLES FOR CHICAGO MINIATURE LAMPS



(**A**) Sub-Midget Flanged, (**B**) Midget Grooved, (**C**) Midget Screw, (**D**) Midget Flanged, (**E**) Candelabra, (**F**) DC Bayonet Index, (**G**) Miniature Flange, (**H**) Miniature Screw, (**J**) Miniature Bayonet, (**K**) SC Bayonet, (**L**) DC Bayonet, (**M**) SC Prefocus, (**N**) DC Prefocus, (**P**) Threaded Knurled, (**Q**) Bi-Pin, (**R**) Wedge, (**S**) Wire Terminal. (SC for Single Contact; DC for Double Contact.)

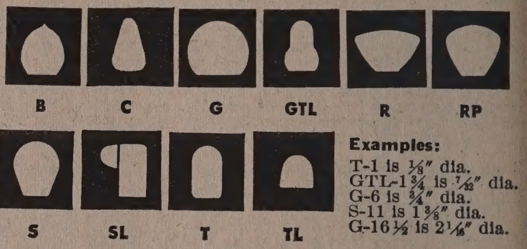
MINIATURE AND SUBMINIATURE LAMPS

Lamp No.	Design V	Design A	MSCP* Approx.	Base Fig.	Bulb	Net/10-Pack 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
313	28.0	.17	3.5	J	T-3¼	$ 2.60	$ 2.20	$ 1.80
334	28.0	.04	.340	B	T-1¾	7.80	6.30	5.40
334LSV	28.0	.06	.340	B	T-1¾	14.10	11.40	9.80
335	28.0	.04	.34	C	T-1¾	11.90	9.70	8.30
336	14.0	.08	.50	B	T-1¾	11.90	9.60	8.20
338	2.7	.06	.04	D	T-1¾	7.10	5.80	5.00
345	6.0	.04	.03	D	T-1¾	9.10	7.30	6.30
349	6.3	.20	.55	D	T-1¾	8.90	7.10	6.20
367	10.0	.04	.08	D	T-1¾	11.30	9.20	7.90
CM8-363	28.0	.04	....	S	TL-1½	7.60	6.20	5.20
CM8-373	2.5	.35	....	B	TL-1¾	14.50	11.80	10.00
CM8-374	2.5	.35	....	S	TL-1¾	12.90	10.50	9.00
380	6.3	.04	.020	D	T-1¾	17.30	14.00	12.00
381	6.3	.20	.40	D	T-1¾	9.20	7.50	6.40
382	14.0	.08	.30	D	T-1¾	10.50	8.50	7.20
399	28.0	.04	.30	C	T-1¾	10.90	8.90	7.10
CM8-428	5.0	.18	.35	D	T-1¾	20.20	16.40	14.00
CM8-503	6.3	.35	....	J	TL-2¾	30.30	24.60	21.10
634	6.0	.20	.63	S	T-1¼	9.30	7.60	6.50
680*	5.0	.06	.03	S	T-1	14.10	11.60	9.80
680AS15*	5.0	.06	.03	S	T-1	16.40	13.40	11.40
682*	5.0	.06	.03	A	T-1	17.20	13.90	11.19
682AS15*	5.0	.06	.03	A	T-1	19.10	15.60	13.30
683*	5.0	.06	.05	S	T-1	14.10	11.60	9.80
683AS15*	5.0	.06	.05	S	T-1	16.40	13.40	11.40
685*	5.0	.06	.05	A	T-1	17.20	13.90	11.90
685AS15*	5.0	.06	.05	A	T-1	19.10	15.60	13.30
713*	5.0	.075	.09	S	T-1	14.10	11.60	9.80
713AS15*	5.0	.075	.09	S	T-1	16.40	13.40	11.40
714*	5.0	.075	.09	A	T-1	17.20	13.90	11.90
714AS15*	5.0	.075	.09	A	T-1	19.10	15.60	13.30
715*	5.0	.115	.15	S	T-1	14.10	11.60	9.80
715AS15*	5.0	.115	.15	S	T-1	16.40	13.40	11.40
718*	5.0	.115	.15	A	T-1	17.20	13.90	11.90
718AS15‡	5.0	.115	.15	A	T-1	19.10	15.60	13.30
755	6.3	.15	.33	J	T-3¼	2.60	2.20	1.80
757	28.0	.08	....	J	T-3¼	3.90	3.10	2.70
965	9.8	.50	6.0	H	T-4½	2.50	1.90	1.70
CM8-967	120	.025	.36	J	T-2	9.00	7.30	6.30
6803	5.0	.06	.03	S	T-¾	22.40	18.10	15.60
6833	5.0	.06	.05	S	T-¾	20.20	16.40	14.00
6839	28.0	.024	.15	A	T-1	25.50	20.70	17.70
7153	5.0	.115	.15	S	T-¾	20.20	16.40	14.00
7216•	5.0	.125	.22	S	T-1	22.00	17.90	15.30
8610•	6.3	.20	.55	S	T-1¼	7.30	5.90	5.10
8627	28.0	.04	.32	S	T-1¼	9.70	7.90	6.80
8628•	6.0	.20	.63	D	T-1¼	13.60	11.00	9.40
8631•	1.35	.06	.006	D	T-1¼	9.50	7.80	6.60
8632	28.0	.04	.32	‡	T-1¼	15.80	12.90	10.90
8635	28.0	.04	.32	§	T-1¼	16.50	13.40	11.40
8637•	3.0	.19	.25	D	T-1¼	16.20	13.10	11.20
8640•	14.0	.08	.50	S	T-1¼	7.00	5.60	4.90
8666	5.0	.08	.15	S	T-1¾	20.20	16.40	14.00
8805•	5.0	.06	.03	A	T-1¾	6.40	5.20	4.40

*Mean Spherical Candlepower. †Silvered base. ‡Special midget flanged, not illus. §Special screw, not illus. •New vs. former No.: 7216 = CM8-715F1; 8610 = CM8-610; 8628 = CM8-628; 8631 = CM8-631; 8637 = CM8-637; 8640 = CM8-640; 8805 = CM8-805.

BULB SHAPES AND SIZES

The bulb is the glass envelope which houses the lamp filament assembly, and contains the vacuum or gas seal. A letter and number identifies bulb shape and approximate bulb diameter in eighths of an inch. Popular bulb shapes are:



Examples:

T-1 is ⅛″ dia.
GTL-1¾ is 7/32″ dia.
G-6 is ¾″ dia.
S-11 is 1⅜″ dia.
G-16½ is 2 1/16″ dia.

CM7 SERIES BI-PIN LAMPS

Lamp No. CM7-	Design Volts	Design Amps	MSCP* Approx.	Base Fig.	Bulb	Net/10-Pack 1-9 Pkgs.	10-49 Pkgs.	50 U Pkgs.
7327	28.0	.04	.34	Q	T-1¾	$ 7.00	$ 5.60	$4.9
7328	6.0	.20	.60	Q	T-1¾	7.30	5.90	5.1
7330	14.0	.08	.50	Q	T-1¾	7.00	5.60	4.9
7838	2.7	.06	.04	Q	T-1¾	9.50	7.80	6.6
7375	3.0	.015	.003	Q	T-1¾	14.40	11.70	9.9

*Mean Spherical Candlepower.

STANDARD VOLTAGE LAMPS

Lamp No.	Design Volts	Design Watts	Base Fig.	Bulb	Net Each
3S6/5	120–125	3	E	S-6	**$0.59**
6S6	115–125	6	E	S-6	**.26**
6S6	130	6	E	S-6	**.31**
6S6	145	6	E	S-6	**.59**
6S6DC	120	6	L	S-6	**.43**
6T4½/1	115–125	6	E	T-4½	**.81**
7C7	115–125	7	E	C-7	**.23**
10C7	115–125	10	E	C-7	**.32**
10C7DC*	115–125	7.0	L	C-7	**.43**
10S6C	230	10	E	S-6	**.68**

NEON GLOW LAMPS

Cold-cathode gas discharge type lamps. Neon gas ionizes and glows when voltage is applied. Lamp 83(5AH) is a circuit glow lamp; all others are neon indicator lamps.

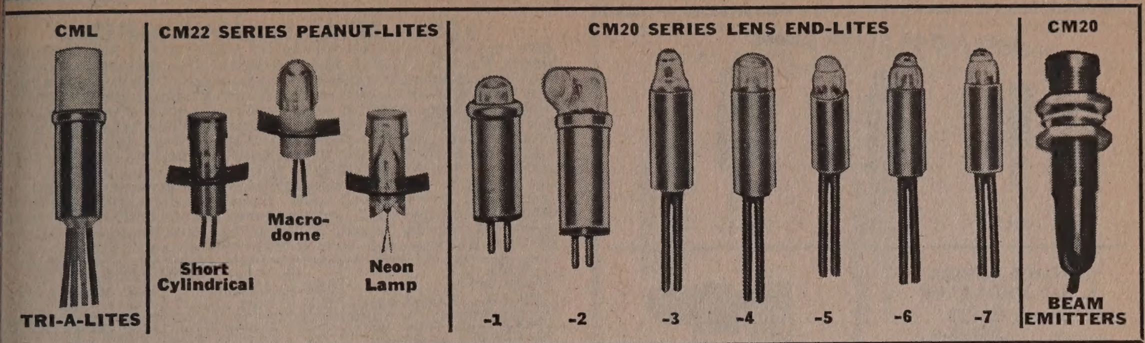
Lamp No. NE-§	Design Volts	Design W	A	Base Fig.	Bulb	Net/10-Pack 1-99 Pkgs.	100-499 Pkgs.	500Up Pkgs.
2(A1A)	105–125	1/17	0.5	S	T-2	$1.90	$1.13	$0.86
2D(C7A)*	105–125	1/12	0.7	D‡	T-2	14.50	8.66	6.42
2H(C2A)	105–125AC	1/4	1.9	S	T-2	2.20	1.29	.95
45(B7A)	105–125	1/4	2.0	E	T-4½	16.50	9.90	7.33
48(B9A)	105–125	1/4	2.0	L	T-4½	13.50	8.07	5.97
51(B1A)	105–125	1/25	0.3	J	T-3¼	4.80	2.86	2.12
51H(B2A)	105–125AC	1/7	1.2	J	T-3¼	4.80	2.86	2.12
83(5AH)	60–65	.....	10.0	S	T-2	4.60	2.43	2.04

§Numbers in parentheses are ASA (American Standards Association) numbers. ‡Single contact.

★MILITARY (MS) EQUIVALENTS

Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number	Lamp No.	MS Number
PR-3	15610-2	**46**	15536-1	**88**	15584-1	**313**	25231-313	**1133**	15565-1	**1385**	35480-2	**683‡**	24367-683‡
PR-6	15610-1	**47**	15571-2	**90**	15569-4	**323**	15530-1	**1141**	35478-4	**1491**	14468-1	**685‡**	24515-685‡
13	15611-1	**51**	15573-1	**93**	35478-93	**327**	25237-327	**1142**	15584-4	**1767**	15612-3	**713‡**	24367-713‡
14	15611-3	**53**	15573-3	**94**	15584-2	**328**	25237-328	**1143**	15565-3	**1768**	15612-1	**714‡**	24515-714‡
27	15587-1	**55**	15572-1	**131**	15611-4	**365**	15611-2	**1154**	35481-1	**1815**	15571-8	**715‡**	24367-715‡
31	15587-2	**64**	15569-1	**222**	15537-1	**387**	18209	**1158**	15584-13	**1819**	15571-6	**718‡**	24515-718‡
40	15536-4	**67**	15570-4	**301**	25238-301	**1016**	35481-2	**1184**	15564-1	**1829**	25231-1829	**NE2D (C7A)**	25252-NE2
42	15536-3	**68**	15569-6	**304**	15569-8	**1073**	35478-1073	**1240**	15618-5	**10C7DC**	16123		
44	15571-1	**82**	15569-3	**305**	35478-305	**1129**	35478-1129	**1251**	*	**680‡**	24367-680‡		
45	15571-11	**87**	35478-87	**307**	25232-307	**1130**	15584-3	**1252**	15579-1	**682‡**	24515-682‡		

*15570-1251. ‡Also AS15 (aged and selected with candlepower indicated) versions; e.g., 680AS15 = 24367–680AS15.



CML SERIES TRI-A-LITES

A unique indicator device that appears white in the off position and turns red, green, or yellow when an input voltage is applied to one of the color coded lead wires. Uses type T-¾ lamps rated at 5V, .115A/lamp, 15,000 hours average life. Unit mounts in a 19/64″ clearance hole with 10380 mounting clip (supplied). Housed in clear anodized aluminum with translucent polycarbonate cap. Terminates in 24 AWG stranded wire, color coded, end stripped leads. CML 9501-RGY has flush style white cap; CML 9601-RGY has a short cylindrical style white cap. Optional features are other color combinations, different lead length, hot stamped legends, and black anodized housings.

CML Number CML-	Net Each, Lots of*					
	1-9	10-24	25-99	100-249	250-499	500-999
9501 or 9601-RGY	$7.06	$6.48	$6.02	$5.33	$4.83	$4.28

CM22 SERIES PEANUT-LITES

Versatile, low-cost indicator assemblies with incandescent or neon lamps. Ideal for stereo amplifiers, mobile equipment, instrumentation, computer and display panels, etc. Incandescent types have high-temperature polycarbonate shells with T-1¾ lamps and 6″ wire leads, permanently potted in place for strain relief. Available in two cap styles, macrodome (Type CM22-1) or short cylindrical (Type CM22-2). Type CM22-1000 Peanut-Lites include T-2 neon lamps which snap into place in butyrate shells. All types include speed clips for mounting.

HOW TO ORDER: Insert two digits in CML number, replacing XX, to indicate cap color: **01**, clear transparent; **02**, red transparent; **03**, amber transparent; **04**, green transparent (incandescent types only); or **05**, white translucent. CM22-1000-01-A1A (NE-2) has clear transparent short cylindrical cap with NE-2 neon lamp.

WITH T-1¾ INCANDESCENT LAMP

Size: .340″ dia. x .800″ long; #24 AWG wire leads, 6″ long. Type B lead insulation per MIL-W-16878. Semi-resilient thermosetting resin encapsulant. Numbers shown are for macrodome cap; for short cylindrical cap, change **1** in CML number to **2**; e.g., CM22-2-XX-15; prices are the same.

CML Number* CM22-	Volts	Amps	M.S. C.P.	Aver. Life, Hours	Net Each, Lots of*			
					1-9	10-24	25-99	100-249
1-XX-15	1.35	.06	.01	500	$1.04	$0.95	$0.88	$0.78
1-XX-17	2.5	.20	.22	500	1.04	.95	.88	.78
1-XX-18	2.7	.06	.04	6,000	1.04	.95	.88	.78
1-XX-43	3.0	.015	.004	10,000	1.71	1.57	1.46	1.29
1-XX-50	3.0	.03	.02	1,800	1.35	1.23	1.15	1.01
1-XX-41	5.0	.06	.05	100,000	1.04	.95	.88	.78
1-XX-12	6.0	.04	.03	10,000	.98	.90	.83	.74
1-XX-06	6.0	.20	.63†	1,000	1.04	.95	.88	.78
1-XX-52	6.3	.20	.55	3,000	.93	.85	.79	.70
1-XX-27	6.3	.04	.02	50,000	1.13	1.04	.97	.86
1-XX-19	6.3	.075	.22	500	1.04	.95	.88	.78
1-XX-13	6.3	.20	.40	50,000	1.30	1.20	1.11	.98
1-XX-20	6.3	.20	.55	3,000	1.04	.95	.88	.78
1-XX-07	10.0	.014	.002	10,000	.93	.85	.79	.70
1-XX-08	10.0	.04	.08	5,000	.98	.90	.83	.74
1-XX-28	14.0	.08	.30	50,000	1.13	1.04	.97	.86
1-XX-09	14.0	.08	.50	750	.93	.85	.79	.70
1-XX-10	18.0	.04	.15	10,000	1.26	1.16	1.08	.95
1-XX-40	28.0	.04	.30	25,000	1.09	1.00	.93	.82
1-XX-29	28.0	.04	.30	25,000	1.13	1.04	.97	.86
1-XX-11	28.0	.04	.34	7,000	1.09	1.00	.93	.82
1-XX-45	28.0	.06	.34	25,000	1.09	1.00	.93	.82

WITH T-2 NEON LAMP

Short cylindrical cap. Size: .370″ dia. x .850″ long; Dumet wire leads. For 105–125 VAC. **Series Resistance Required:** A1A, 200K ohms; A9A, 62K ohms; C2A, 22K ohms.

CML Number* CM22-1000-	Nominal		Aver. Life, Hours	Net Each, Lots of*			
	mA	Watts		1-9	10-24	25-99	100-249
XX-A1A(NE-2)	0.3	1/25	25,000	$0.27	$0.25	$0.23	$0.20
XX-A9A(NE-2E)	1.0	1/10	5,000	.27	.25	.23	.20
XX-C2A(NE-2H)	2.0	1/4	5,000	.27	.25	.23	.20

*See How To Order information above and insert two digits in CML no. as indicated. †At 5 volts.

CM20 SERIES SUBMINIATURE LENS END-LITES

Subminiature end-lites produce axially centered spots for minimal adjustment problems and easy lamp replacement. Ideal for close proximity use with photo sensors, where an intense spot of luminous and infrared energy is required. Typical applications include encoders, tape sensors, card readers and optical scanners. Types CM20-1, -2, -17 and -19 have clear anodized aluminum cartridge body; stainless steel terminals (CM20-19 #24 AWG stranded wire leads); nylon insulation. Types CM20-3 thru -7 and -20 have gold anodized aluminum shell; #24 AWG stranded wire leads; Type B insulation per MIL-W-16878; semi-resilient thermosetting resin encapsulation. Types CM20-5 thru CM20-7 are small enough to be mounted on .250″ centers for card reader applications. **Spot Specifications:** CM20-1, -19: When projected ⅜″ from end of bulb, spot covers ⅛″ dia. target, concentric with long axis at minimum intensity of 750 ft.-candles. CM20-2: When projected 1″ from end of bulb, spot covers 1″ dia. target with minimum of 350 ft.-candles. CM20-3: When projected ⅜″ from end of bulb, spot covers 1/16″ dia. target concentric with sleeve; intensity ⅜″ from bulb is minimum of 750 ft.-candles; spot is narrow elliptical. CM20-4: Same as CM20-3 except covers ⅛″ dia. target; spot is "round" elliptical. CM20-5 thru -7, -20 have no spot specifications, but have axially aligned lamp; CM20-17 spot is axially aligned with housing.

CML No.	Lamp Type	V	Amps (±10%)	Aver. Life, Hours	Net Each, Lots of*			
					1-9	10-49	50-99	100-499
CM20-1	TL-1¾	2.5	.350	10,000	$2.50	$2.32	$2.06	$1.86
CM20-2	SL-2	2.5	.325	10,000	4.70	4.37	3.86	3.50
CM20-3	TL-1¾	2.5	.350	10,000	2.56	2.39	2.11	1.91
CM20-4	TL-1¾	2.5	.350	10,000	3.12	2.90	2.57	2.33
CM20-5	TL-1¼	2.5	.200	1,000	2.50	2.32	2.06	1.86
		2.1	.180	10,000				
CM20-6	TL-1¼	6.0	.200	1,000	2.34	2.17	1.92	1.74
		5.1	.180	10,000				
CM20-7	TL-1¼	28.0	.040	1,000	2.40	2.23	1.97	1.79
		24.0	.036	10,000				
CM20-17	TL-1¾	5.0	.180	10,000	4.25	3.95	3.49	3.16
CM20-19	CM20-1 with 6″ leads				3.14	2.92	2.58	2.34
CM20-20	TL-1¾	5.0	.180	10,000	4.72	4.38	3.88	3.51

CM20 SERIES BEAM EMITTERS

Compact assemblies designed to project narrow cones of infrared and luminous energies over distances of 3″ to 20″. Spots produced are round, varying from ⅜″ to 1¼″. Infrared outputs are approximately 75% of input power, ideal for integration with silicon type sensors. Low power consumption (782 mW), axially aligned spots, easy mounting and long life. **Volts:** 2.3. **Current:** .340 amps, ±10%. **Average Life:** 10,000 hours. **Construction:** Anodized aluminum housing, #24 AWG wire leads, semi-resilient thermosetting resin encapsulation. **Size:** .475″ dia.; CM20-8-01, 1.33″ long; CM20-9-01, 2.08″ long.

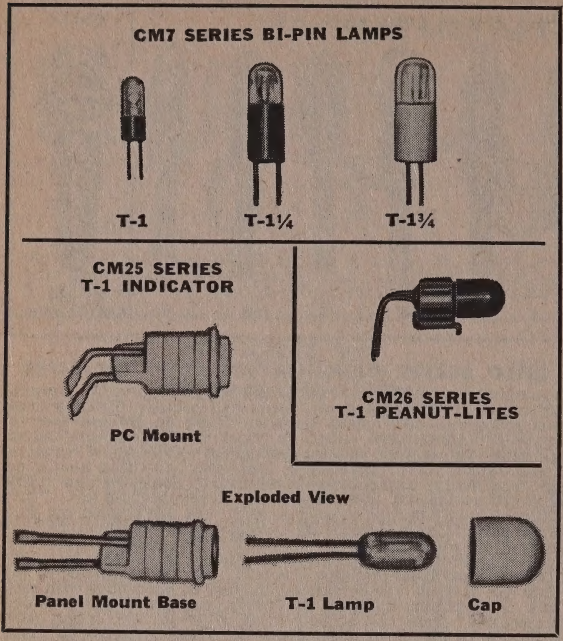
CML Number	Focal Distance	Projected Spot Dia.	Net Each, Lots of*			
			1-9	10-24	25-49	50-99
CM20-8-01	7″–9″	1¼″–1¾″	$20.51	$18.15	$16.44	$14.60
CM20-9-01	14″–16″	1″–1⅛″	23.68	20.95	18.96	16.85

CM39 SERIES LAMP FILTERS (Not Illus.)

Slip-on filters are translucent, precision molded silicone rubber caps; for subminiature and miniature lamps. They assume basic lamp contours, are impervious to color shift. Replaceable and reusable. Temperature range, −62° to +225° C. **TO ORDER:** Add suffix to CML Number to indicate color: **-1**, red; **-2**, blue/white; **-3**, clear; **-4**, amber; **-5**, green; **-6**, blue; **-7**, yellow.

CML Number	Lamp Size	Size, In. Dia. x L.	Net Each, Lots of*				
			1-9	10-24	25-99	100-249	250-499
CM39-02	T-¾	.090 x .230	$0.29	$0.27	$0.25	$0.22	$0.20
CM39-03	T-1	.096 x .3125	.29	.27	.25	.22	.20
CM39-04	T-1	.096 x .219	.29	.27	.25	.22	.20
CM39-05	T-1¼	.175 x .265	.29	.27	.25	.22	.20
CM39-06	T-1¾	.214 x .375	.29	.27	.25	.22	.20
CM39-07	T-1¾	.218 x .3125	.29	.27	.25	.22	.20
CM39-08	T-1¾	.325 x .279	.29	.27	.25	.22	.20
CM39-09	T-2	.250 x .522	.29	.27	.25	.22	.20
CM39-10	T-2	.250 x .272	.29	.27	.25	.22	.20
CM39-11	T-3¼	.370 x .672	.38	.35	.33	.29	.26
CM39-12	S-6	.584 x 1.120	.38	.35	.33	.29	.26

★WRITE FOR PRICES ON LARGER QUANTITIES



CM7 SERIES BI-PIN INDICATOR LAMPS

High quality, low cost incandescent lamps fit CM21 sockets below. Available with variations (right angle leads, flying leads, etc.) or with commercial or aviation color coating, on special order. Write for information.

T-1 BI-PIN INDICATOR LAMPS

Size: .130″ dia. x .350″ long; .020″ dia. pins, .190″ long.

CML No. CM7-	Volts	Amps	M.S. C.P., Approx.	Aver. Life, Hours	Net Each, per Pkg. of		
					10	100	500
7680	5.0	.06	.03	100,000	$1.72	$1.39	$1.19
7683	5.0	.06	.05	100,000	1.72	1.39	1.19
7714	5.0	.075	.09	25,000	1.72	1.39	1.19
7715	5.0	.115	.15	40,000	1.72	1.39	1.19
8095	10.0	.027	.10	10,000	2.65	2.15	1.84
8097	12.0	.06	.15	16,000	2.65	2.15	1.84
8099	18.0	.026	.15	16,000	2.65	2.15	1.84
7839	28.0	.024	.15	16,000	2.55	2.07	1.77

T-1¼ BI-PIN INDICATOR LAMPS

Size: .200″ dia. x .600″ long; .020″ dia. pins, .250″ long.

7636	1.35	.03	.006	100	$1.89	$1.53	$1.32
7637	3.0	.19	.25	350	1.62	1.31	1.12
7660	6.0	.04	.03	1,000	1.89	1.53	1.32
7628	6.0	.20	.63	1,000	1.62	1.31	1.12
7646	14.0	.08	.50	1,000	1.62	1.31	1.12

T-1¾ BI-PIN INDICATOR LAMPS

Size: .230″ dia. x .625″ long; .020″ dia. pins, .250″ long.

7931	1.35	.06	.01	500	$0.95	$0.78	$0.66
7868	2.5	.350	.21	10,000	1.20	.97	.80
7968	2.5	.20	.22	500	.95	.78	.66
7838	2.7	.06	.04	6,000	.95	.78	.66
7375	3.0	.015	.003	10,000	1.44	1.17	.99
7945	6.0	.04	.03	10,000	.95	.78	.66
7328	6.0	.20	.60	1,000	.73	.59	.51
7380	6.3	.04	.02	50,000	.95	.78	.66
7377	6.3	.075	.22	500	.70	.56	.49
7349	6.3	.20	.55	3,000	.70	.56	.49
7381	6.3	.20	.40	50,000	.77	.63	.54
7344	10.0	.014	.002	10,000	1.05	.83	.72
7382	14.0	.08	.30	50,000	.77	.63	.54
7330	14.0	.08	.50	750	.70	.56	.49
7370	18.0	.04	.15	10,000	1.16	.94	.80
7459	22.0	.04	.30	2,000	1.20	.97	.83
7387	28.0	.04	.30	25,000	.81	.66	.56
7327	28.0	.04	.34	7,000	.70	.56	.49

CM21 SERIES SOCKETS FOR BI-PIN LAMPS

Pushfit Teflon® sockets accept all CM7 Bi-Pin lamps listed above. Snap directly into panels, brackets or PC boards. Type CM21-1 has beryllium copper contacts with .050″ pin centers, for T-1 lamps. CM21-2 has phosphor bronze contacts with gold over silver plating, with .125″ pin centers for T-1¼ and T-1¾.

®Registered DuPont trademark.

CML No.	For Bi-Pin Lamp	Mtg. Hole	Net Each, Lots of*				
			1-9	10-24	25-99	100-249	250-499
CM21-1	T-1	.122″	$0.73	$0.67	$0.62	$0.55	$0.50
CM21-2	T-1¼, T-1¾	.221″	.95	.87	.81	.72	.65

CM26 SERIES T-1 PEANUT-LITES

Low cost commercial substitutes for MS25446 and MS90308 indicators. Each T-1 Peanut-Lite contains a subminiature lamp sealed in a high-temperature polycarbonate housing. Lamps range from 3 to 28 volts. Can be mounted with spring mounting clips (CM26-1012) which are provided with T-1 Peanut-Lites. Type 10384 clip for circuit board mounting is also available. Three types of terminal material are available—CM26-1 has .750″ tinned wire leads; CM26-2 has .312″ long .020″ nickel pins; CM26-3 has #26 AWG stranded wire, 6″ long. White, red, amber, green, and blue caps are standard; other colors available. Also available are special length and type pins and leads. Write for information. **HOW TO ORDER:** For cap color, substitute for **XX** in CML number: **05,** white; **07,** red; **09,** amber; **10,** green; **11,** blue. Example: CM26-1-07-19 is the wire lead version with red cap and 5V, .06A lamp.

CML Number* CM26-	Volts	Amps	M.S. C.P.	Aver. Life, Hrs.	Net Each, Lots of*			
					1-9	10-24	25-99	100-249
1-XX-02	3.0	.0125	.001	16,000	$2.00	$1.84	$1.71	$1.50
1-XX-05	5.0	.03	.03	75,000	1.78	1.63	1.51	1.34
1-XX-19	5.0	.06	.05	50,000	.98	.91	.84	.75
1-XX-20	5.0	.11	.05	25,000	.98	.91	.84	.75
1-XX-14	10.0	.027	.10	10,000	1.57	1.44	1.34	1.19
1-XX-15	12.0	.06	.15	16,000	1.57	1.44	1.34	1.19
1-XX-17	18.0	.026	.15	16,000	1.86	1.71	1.58	1.40
1-XX-18	28.0	.024	.15	16,000	1.88	1.72	1.60	1.41
2-XX-02	3.0	.0125	.001	16,000	2.17	2.00	1.86	1.64
2-XX-05	5.0	.03	.03	75,000	1.95	1.79	1.66	1.47
2-XX-19	5.0	.06	.05	50,000	1.17	1.07	.99	.87
2-XX-20	5.0	.11	.05	25,000	1.17	1.07	.99	.87
2-XX-14	10.0	.027	.10	10,000	1.75	1.61	1.49	1.32
2-XX-15	12.0	.06	.15	16,000	1.75	1.61	1.49	1.32
2-XX-17	18.0	.026	.15	16,000	2.03	1.87	1.74	1.53
2-XX-18	28.0	.024	.15	16,000	2.05	1.89	1.75	1.56
3-XX-02	3.0	.0125	.001	16,000	2.21	2.03	1.89	1.67
3-XX-05	5.0	.03	.03	75,000	2.00	1.84	1.71	1.50
3-XX-19	5.0	.06	.05	50,000	1.21	1.11	1.04	.92
3-XX-20	5.0	.11	.05	25,000	1.21	1.11	1.04	.92
3-XX-14	10.0	.027	.10	10,000	1.79	1.65	1.53	1.35
3-XX-15	12.0	.06	.15	16,000	1.79	1.65	1.53	1.35
3-XX-17	18.0	.026	.15	16,000	2.07	1.90	1.77	1.57
3-XX-18	28.0	.024	.15	16,000	2.10	1.92	1.78	1.58

*See How To Order information above and insert two digits in CML no. as indicated.

CM25 SERIES T-1 INDICATORS

Subminiature T-1 indicators which meet MS-90308. Unbased T-1 lamp is inserted into housing and cap is snapped on to hold lamp and provide color identification. Features include dimpled terminals (patent pending) for positive electrical contact and internally flared lead guides for easy wire-terminal lamp insertion. Hot-stamped legends can be provided with new cylindrical cap style. Units are small enough to mount on .250″ centers and still allow adequate wiring room and space to replace lamp. Base and cap are polycarbonate. **HOW TO ORDER:** For **base style,** substitute for first **X** in CML number: **5,** panel mount; **6,** PC mount. For **cap style,** substitute for second **X** in CML number: **7,** round; **8,** lens; **9,** square. For **cap color,** substitute for final **XX** in CML number; **01,** clear transparent; **02,** red transparent; **03,** yellow transparent; **04,** green transparent; **05,** white translucent; **06,** blue transparent; **07,** red translucent; **08,** yellow translucent; **09,** green translucent; **10,** blue translucent; **11,** amber translucent. Final number is lamp number; to order less lamp, omit lamp number. **Example:** CM25-5-706-715 is panel mounted with a round, blue transparent cap and a 5 V, .115 A lamp. CM25-5-706 is the same thing without the lamp. Also available as MS90308 -X (**2,** red; **4,** yellow; **5,** green; **6,** blue; **9,** clear) -XXX (lamp number 680, 683, or 715). Requires .190″/.186″ dia. round mounting hole.

CML No. CM25-X-XX-	Volts	Amps	M.S. C.P.	Aver. Life, Hrs.	Net Each, Lots of*		
					1-9	10-24	25-99
7201	1.5	.015*	.01†	5,000	$2.31	$2.13	$1.98
8846	3.0	.008*	.001†	16,000	2.31	2.13	1.98
2128	3.0	.0125*	.001†	16,000	2.31	2.13	1.98
7207	3.0	.060	.03	100,000	2.31	2.13	1.98
7210	5.0	.030	.03	75,000	2.31	2.13	1.98
6150	5.0	.060	.15	5,000	1.87	1.73	1.60
680	5.0	.060	.03	100,000	1.87	1.73	1.60
683	5.0	.060	.05	100,000	1.87	1.73	1.60
713	5.0	.075	.09	25,000	1.87	1.73	1.60
715	5.0	.115	.15	40,000	1.87	1.73	1.60
7218	10.0	.027	.10	10,000	2.33	2.14	1.99
7219	12.0	.060	.15	16,000	2.33	2.14	1.99
7220	18.0	.026	.15	16,000	2.33	2.14	1.99
6838	28.0	.024	.15	16,000	2.41	2.21	2.05

*±20%. †Nominal.

Base Only

CML Number	Net Each, Lots of*				
	1-9	10-24	25-99	100-249	250-499
CM25-1005	$0.71	$0.65	$0.60	$0.54	$0.49
CM25-1006	.71	.65	.60	.54	.49

Cap Only

CM25-1007-XX*	$0.23	$0.21	$0.19	$0.18	$0.15
CM25-1008-XX*	.23	.21	.19	.18	.15
CM25-1009-XX*	.23	.21	.19	.18	.15

*Replace **XX** with color indicators; see How to Order, above.

★WRITE FOR PRICES ON LARGER QUANTITIES

CML SERIES CARTRIDGE INDICATORS

Cartridge housings with incandescent or neon lamps; cool operating temperatures for long life. Mount in cartridge holder, or panel mounting with speed clip (not included). Clear anodized aluminum housings, nylon insulation, transparent or translucent polycarbonate or butyrate (color matched to industrial standards) caps. Meet requirements of MIL-L-3661. Stainless steel pins are located off-center for polarization. Stainless steel pin terminals, or #24 AWG wire leads. Available with hot stamped legends; write for prices. **Body Size:** .284″ dia. x .634″ long.

HOW TO ORDER: Insert two interfixes in CML number, replacing **XX** shown in tables below. First interfix indicates cap style and terminal configuration: **1,** flush cap with wire leads; **2,** short cylindrical cap with wire leads; **3,** long cylindrical cap with wire leads; **4,** macrodome cap with wire leads; **5,** flush cap with pin terminals; **6,** short cylindrical cap with pin terminals; **7,** macrodome cap with pin terminals; **8,** long cylindrical cap with pin terminals. Second interfix indicates cap type: **1,** butyrate, transparent; **2,** butyrate, translucent; **3,** polycarbonate, transparent; or **4,** polycarbonate, translucent.

Also replace final **X** in CML no., to indicate cap color: **1,** red; **2,** green; **3,** amber; **4,** blue; **5,** white; **6,** yellow; or **7,** clear. Examples: CML-530077 has clear transparent flush cap, pin terminals, and 10 V, 14 mA lamp. CML-140431 has red translucent flush cap, wire lead terminals, and 3.0 V, 15 mA lamp. CML-830012 has green transparent long cylindrical cap, pin terminals and 0.3 mA, 1/25 watt neon lamp.

WITH T-1¾ INCANDESCENT LAMPS

CML Number* CML-	Volts	Amps	M.S. C.P., Approx.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
XX015X	1.35	.06	.01	500	$1.08	$1.00	$0.92	$0.83
XX017X	2.5	.20	.22	500	1.12	1.04	.96	.85
XX018X	2.7	.06	.04	6,000	1.05	.96	.87	.79
XX043X	3.0	.015	.004	10,000	1.75	1.66	1.51	1.29
XX012X	6.0	.04	.03	10,000	.97	.90	.83	.73
XX006X	6.0	.20	.63	1,000	.97	.90	.83	.73
XX027X	6.3	.04	.02	50,000	1.26	1.16	1.06	.97
XX019X	6.3	.075	.22	500	1.12	1.04	.96	.85
XX013X	6.3	.20	.40	50,000	1.17	1.05	.97	.89
XX020X	6.3	.20	.55	3,000	1.12	1.04	.96	.85
XX007X	10.0	.014	.002	10,000	1.50	1.33	1.23	1.12
XX008X	10.0	.04	.08	5,000	1.56	1.41	1.30	1.18
XX028X	14.0	.08	.30	50,000	1.26	1.16	1.06	.97
XX009X	14.0	.08	.50	750	.97	.87	.81	.75
XX010X	18.0	.04	.15	10,000	1.29	1.19	1.08	.97
XX040X	28.0	.04	.20	50,000	1.19	1.09	1.02	.90
XX029X	28.0	.04	.30	25,000	1.25	1.14	1.05	.95
XX011X	28.0	.04	.34	7,000	1.04	.96	.87	.79

WITH T-2 INCANDESCENT LAMPS (NO CAP)

CML Number CML-	Volts	Amps	End Ft.-Candles, Approx.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
0X047X	10	.017	100	5,000	$1.38	$1.27	$1.19	$1.05
0X069X	12	.170	2500	5,000	1.38	1.27	1.19	1.05
0X048X	16	.017	150	5,000	1.44	1.32	1.22	1.08
0X035X	28	.040	2000	5,000	1.38	1.27	1.19	1.05
0X033X	48	.053	1500	5,000	1.38	1.27	1.19	1.05
0X068X	60	.050	2600	5,000	1.38	1.27	1.19	1.05

WITH NEON LAMPS (105-125 VAC)

CML Number* CML-	Nominal mA	Nominal Watts	Built-in Resis.	Aver. Life, Hours	Net Each, Lots of* 1-9	10-24	25-99	100-249
XX001X	0.3	1/25	220K†	25,000	$0.97	$0.90	$0.83	$0.73
XX004X	0.8	1/10	68K†	25,000	.97	.90	.83	.73
	1.2‡	1/9	22K	2,000				
XX014X	1.7§	1/45	33K	5,000	1.90	1.75	1.62	1.44
XX016X	2.0§	1/4	22K	14,000	1.90	1.75	1.62	1.44
XX022X	1.9§	1/4	30K†	25,000	.85	.78	.72	.64
XX023X	1.0§	1/10	56K	8,500	1.90	1.75	1.62	1.44
XX024X	0.7§	1/15	100K	25,000	1.90	1.75	1.62	1.44
XX025X	0.7§	1/15	None	25,000	.85	.78	.72	.64
XX030X	0.9	1/8	47K	12,000	2.02	1.85	1.72	1.52
XX031X	0.35	1/16	150K	16,000	2.02	1.85	1.72	1.52
XX032X	0.3	1/25	220K	25,000	2.02	1.85	1.72	1.52
XX036X	0.7§	1/15	None	25,000	.92	.84	.78	.69
XX042X	1.0§	1/10	56K	100,000#	1.90	1.75	1.62	1.44

*See How To Order information above, and add two interfixes and suffix, as indicated. †Valve of external resistor required. ‡Not available in flush cap style. §Available only in long cylindrical and macrodome cap styles. #Over 100,000 hours.

No. CML-10380 Cartridge Indicator Mounting Clip—For mounting CML series indicators directly in panel, in 9⁄32″ clearance hole. Spring tempered steel. Net Each, Lots of 1–9 . . . . **10c***

No. CM21-3 Cartridge Indicator Connector—Accepts CML series indicators for low-cost mounting (not in panels). Phenolic body, cadmium plated brass contacts. Net Each, Lots of 1–9 . **29c***

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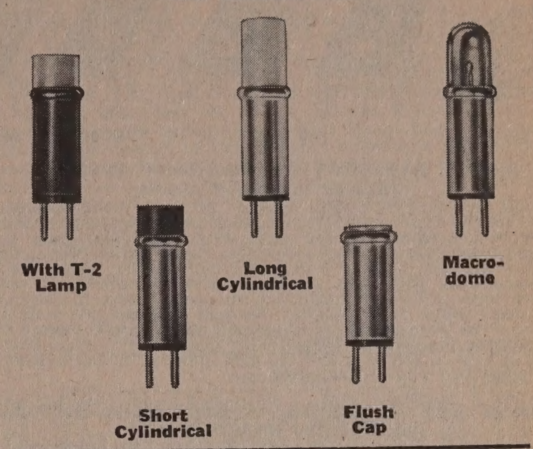
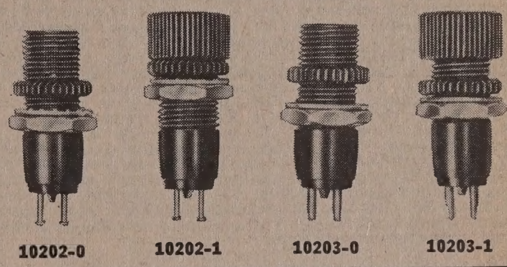
CML SERIES CARTRIDGE INDICATORS AND HIDE-A-LITES



CML SERIES CARTRIDGE HOLDERS



CML SERIES HIDE-A-LITES

Electrical and mechanical specifications identical to CML Series Cartridge Indicators except all indicators appear **white** in off position and take on color only when activated. Colors available: Red, green, blue, amber. Translucent cap only. **HOW TO ORDER:** Replace **XX** in CML number with 50, 60, 70, or 80 to indicate cap style and terminal configuration—**50,** flush, pin; **60,** short cylindrical, pin; **70,** long cylindrical, pin; **80,** macrodome, pin. Replace final suffix **X** with R, G, B, or A for activated color—**R,** red; **G,** green; **B,** blue; **A,** amber. Example: CML 50406 W/R—Flush, translucent cap, 6 volt, .20A, white (red when activated).

CML Number* CML-XX4	V	A	M.S. C.P.	Avg. Life, Hrs.	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
17 W/X	2.5	.20	.22	500	$1.77	$1.63	$1.51	$1.34	$1.21
06 W/X	6.0	.20	.63	1,000	1.64	1.50	1.39	1.23	1.12
52 W/X	6.3	.20	.55	3,000	1.64	1.50	1.39	1.23	1.12
19 W/X	6.3	.075	.22	500	1.77	1.63	1.51	1.34	1.21
13 W/X	6.3	.20	.40	50,000	1.92	1.76	1.64	1.45	1.31
20 W/X	6.3	.20	.55	3,000	1.77	1.63	1.51	1.34	1.21
28 W/X	14.0	.08	.30	50,000	1.92	1.76	1.64	1.45	1.31
09 W/X	14.0	.08	.50	750	1.64	1.50	1.39	1.23	1.12
53 W/X	14.0	.09	.50	10,000	2.21	2.03	1.89	1.67	1.51
10 W/X	18.0	.04	.15	10,000	1.92	1.76	1.64	1.45	1.31
54 W/X	22.0	.04	.30	2,000	1.92	1.76	1.64	1.45	1.31
40 W/X	28.0	.04	.30	25,000	1.92	1.76	1.64	1.45	1.31
11 W/X	28.0	.04	.34	7,000	1.67	1.54	1.43	1.26	1.14
45 W/X	28.0	.06	.34	25,000	2.16	1.98	1.84	1.62	1.48
55 W/X	28.0	.06	.60	5,000	2.31	2.12	1.97	1.74	1.58

*See How To Order information above.

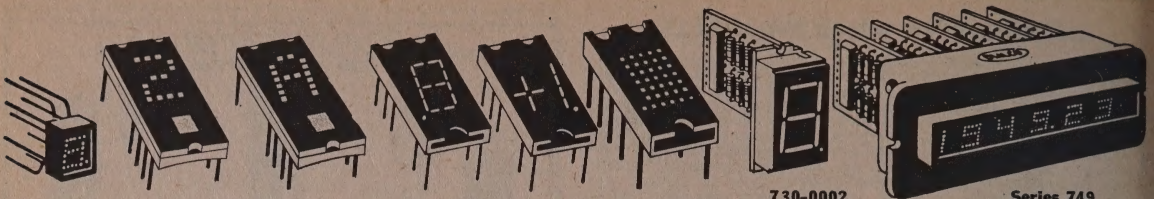
CML SERIES CARTRIDGE HOLDERS

Panel mounting holders for T-1¾ or T-2 lamps. Body, collar and facing nut are black anodized aluminum. Molded phenolic insulation. Turret terminals are spring brass, gold over nickel plate; solder cup terminals are spring brass, tintilate plate. Types 10202-1 and 10203-1 have 9⁄32″ thick knurled collar nut. Mount in round or "D" hole, .375″ dia., in panels to 15⁄32″ thick (when not using collar nut). Terminal pins are polarized.

CML Number CML-	Mounting	Terminals	Net Each, Lots of* 1-9	10-24	25-99	100-249	250-499
10202-0	Front/rear	Turret	$1.01	$0.93	$0.83	$0.77	$0.70
10202-1	Front	Turret	1.15	1.06	.94	.88	.80
10203-0	Front/rear	Solder	1.01	.93	.83	.77	.70
10203-1	Front	Solder	1.15	1.06	.94	.88	.80

DIALIGHT LED Readouts

DIALCO®



MODEL 745-0001 DIODE-LITE™ READOUT

(CHARACTER HEIGHT .125″)

Single digit readout module designed for use in hand operated, portable or desk top instruments such as calculators, data terminals, test equipment and status indicators. Solid state, extremely long life and high reliability. Highly legible bright red characters read at 3 to 5 ft.; wide 140° viewing angle. Fully encapsulated, withstands rough production handling and user environments. Variable brightness; compact, 12 digits in less than 3″ panel width; IC compatible. **Forward Voltage:** 1.65 volts at 5 mA. **Peak Wavelength:** 660 nM bright red. **Reverse Voltage:** 3 V. **Operating Temperature Range:** −20° C to +100° C. **Size:** Overall, .220″ w. x .125″ d. x .270″ h.; digit, .090″ w. x .125″ h. **Characters:** 0 to 9 with decimal point.

SERIES 745 READOUTS, HEXADECIMAL DISPLAY

(CHARACTER HEIGHT .270″)

Compatible with most TTL and DTL circuits. Standard 14 pin DIP. Gallium arsenide phosphide light source, single-plane wide angle visibility. Available with left or right decimal. **Reverse Voltage at 25° C Ambient:** 6 volts, each segment; 3 volts, decimal point. **Peak Forward Current:** 75 mA. **Continuous Forward Current:** Each segment or decimal point, 30 mA; total for 745-0003 or 745-0006, 240 mA; total for 745-0004, 150 mA. **Luminance:** 550 fL. typical. **Wavelength at Peak Emission:** 6500° A. **Static Forward Voltage:** 3.2 V typ. **Ambient Temperature Range:** 0° to 70° C. **Size:** 745-0003 or 745-0006, overall, .400″ w. x .120″ d. x .740″ h.; digit, .187″ w. x .270″ h. 745-0004, overall, .400″ w. x .120″ d. x .740″ h.; digit, .270″ h.; plus sign, .130″ w. x .170″ h. **Characters:** 745-0003 or 745-0006, 0 to 9, five special functions and blank (total 16); 745-0003 has decimal point to right and 745-0006 to left. 745-0004, plus-minus one with a decimal point. Model 745-0007 has hexadecimal display with left and right hand decimals. Model 745-0008 has numeric display with left hand decimal including latch. Model 745-0009 has numeric display, left hand decimal, plus counter and latch.

MODEL 745-0005 ALPHA-NUMERIC DISPLAY

(CHARACTER HEIGHT .300″)

Gallium arsenide phosphide display mounted on a 14 pin dual inline substrate and cast within an electrically non-conductive transparent epoxy. High brightness, low power requirements, single-plane wide-angle visibility, compatible with USASCII and EBCDIC codes. Complete alpha-numeric and symbol capability, 35 dot matrix. 5 x 7 array with X-Y select and decimal point. **Reverse Voltage at 25° C Ambient:** 3 volts. **Peak Forward Current:** Each diode, 100 mA. **Continuous Forward Current:** Each diode, 20 mA; total, 400 mA. **Luminance:** 300 fL typical. **Wavelength at Peak Emission:** 6500° A typ. **Static Forward Voltage:** 1.6 V typ. **Ambient Temperature Range:** 0° to 70° C. **Size:** Overall, .400″ w. x .120″ d. x .740″ h. **Characters:** Alpha-numeric with decimal point.

SERIES 730 DIODE-LITE READOUTS

(CHARACTER HEIGHT .625″)

Unique lens design in seven segment format results in bright highly legible characters with lowest cost per character for comparable size. **Models 730-0001 and 730-0002:** Decoder/driver requires four lines or bits of information in a 8421 BCD code for each character in display. Terminals are brought out on PC board where user has the option of wiring directly to it or using an edge connector, automatic blanking of leading and/or trailing edge zeros, resulting in easily readable displays. Display malfunction can be checked by built-in lamp-test. Model 730-0001 comes without decimal point and Model 730-0002 with decimal point. **Models 730-0003, 730-0004 and 730-0005:** These units require a resistor for each LED. Resistor value is 180 ohms ¼ watt for 5 volts operation. Model 730-0003 readout module comes without decimal point, 730-0004 with decimal point, 730-0005 is plus-minus one module with decimal point. **Model 730-0011:** Plus-minus one module with decimal point with resistors. **Model 730-1001:** Readout with decoder/driver. **Model 730-1005:** Plus-minus. **Model 730-1011:** Plus-minus with PC board. SPECIFICATIONS: **Supply Voltage per Character (Typical):** 730-0001, 5 V at 160 mA; 730-0002, 5 V at 175 mA; 730-0003, 5 V at 105 mA; 730-0004, 5 V at 120 mA; 730-0005 and 730-0011, 5 V at 105 mA; 730-1001, 5 V at 240 mA; 730-1005, 5 V at 175 mA; 730-1011, 5 V at 175 mA. **Logical Inputs:** Four lines of BCD per character. **Logic "1":** 2.4–5.5 volts. **Logic "0":** 0–.8 volt sink 1.6 mA. **Operating Temperature:** 0–70° C. **Size:** .688″ w. x .473″ d. x 1.375″ h. all models; Models 730-0001 and 730-0002 with 1.589″ x 1.062″ h., decoder/driver; Model 730-0011 with 1.589″ x 1.062″ h. resistors card.

A snap-on non-glare red window is provided with each readout module. Its use is recommended.

SERIES 730 FOR BEZEL ASSEMBLY MOUNTING

Same as Series 730 above, but mounts in Series 733 bezel assembly.

730-0006—Same as 730-0001.
730-0007—Same as 730-0002.
730-0008—Same as 730-0003.
730-0009—Same as 730-0004.
730-0010—Same as 730-0005.
730-0012—Same as 730-0011.
730-1006—Same as 730-1001.
730-1010—Same as 730-1005.
730-1012—Same as 730-1011.

SERIES 733 BEZEL ASSEMBLIES

Dialco No.	*	Panel Cutout†	Mtg. Ctrs.	Dialco No.	*	Panel Cutout†	Mtg. Ctrs.
733-0002	2	1.570″	1.906″	733-0007	7	5.010″	5.346″
733-0003	3	2.258″	2.594″	733-0008	8	5.698″	6.034″
733-0004	4	2.964″	3.282″	733-0009	9	6.386″	6.722″
733-0005	5	3.634″	3.970″	733-0010	10	7.074″	7.410″
733-0006	6	4.322″	4.658″				

*No. of characters. †Height of panel cutout, 1.114″, all models.

SERIES 749 READOUT ASSEMBLY

(CHARACTER HEIGHT .125″ or .205″)

Complete with decoder/driver and stylish black bezel assembly for instant mounting. Readout is a six by eight dot matrix connected for seven segment driving. Fully encapsulated, bright red character offers low power consumption. Terminals on PC board for automatic blanking of leading and/or trailing edge zeros. Contains a lamp test input for checking malfunction. Decimal point with each character, illuminated by returning its input terminals to +5 V. **Supply Voltage:** 5 V at 90 mA typ. per character. **Logic Inputs:** Four lines of BCD per character. **Logical "1":** 2.4 to 5.5 V. **Logical "0":** 0 to .8 V sink 1.6 mA. **Oper. Temp.:** 0° to +70° C.

Dialco Number		No. of Characters	Dimensions, Inches		
Character Height			Projected Display	Mtg. Ctrs.	Total Panel
.125″	.205″				
749-0101	749-0201	1	.882	1.218	1.374
749-0102	749-0202	2	.882	1.218	1.374
749-0103	749-0203	3	1.570	1.906	2.062
749-0104	749-0204	4	1.570	1.906	2.062
749-0105	749-0205	5	2.258	2.594	2.750
749-0106	749-0206	6	2.258	2.594	2.750
749-0107	749-0207	7	2.946	3.282	3.438
749-0108	749-0208	8	2.946	3.282	3.438
749-0109	749-0209	9	3.634	3.970	4.126
749-0110	749-0210	10	3.634	3.970	4.126
Back Projection		749-01XX 749-02XX		1.800″ max. 2.000″ max.	

Model 501-0700-005 Edge Card Connector—For use with Series 730 and Series 749 units. Solder blade terminals.
Model 501-0700-009 Edge Card Connector—For use with Series 730 and Series 749 units. PC terminals.
Model 501-0701-009 Socket—For use with Models 745-0003, -0004 and -0006 readouts.
Model 501-0702-009 Socket—For use with Models 730-0003, -0004, -0005, -0008, -0009 and -0010.
Model 704-1549 Decoder/Driver—For use with Series 730 units and Models 745-0003, 745-0006.
Model 704-1554 Decoder/Driver—For use with Model 745-0001.

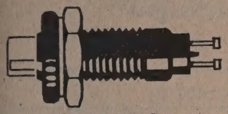
READOUTS PRICING

Dialco Number	Dialco Number	Net Each, Lots of*			
		1-9	10-24	25-99	100-249
704-1549	704-1554	$ 4.80	$ 4.24	$ 3.72	$ 3.24
730-0001	730-0006	17.99	16.11	14.36	13.49
730-0002	730-0007	18.89	16.91	15.08	14.16
730-0003	730-0008	12.00	10.35	9.01	8.00
730-0004	730-0009	12.60	10.93	9.57	8.54
730-0005	730-0010	12.00	10.35	9.01	8.00
730-0011	730-0012	15.13	13.45	12.10	10.82
730-1001	730-1006	16.54	14.76	13.09	12.34
730-1005	730-1010	9.55	9.00	7.76	6.95
735-1011	730-1012	13.70	12.00	10.85	9.67
733-0002	....	3.15	2.96	2.77	2.39
733-0003	....	3.46	3.26	3.05	2.65
733-0004	....	3.77	3.56	3.33	2.91
733-0005	....	4.08	3.86	3.61	3.17
733-0006	....	4.39	4.16	3.89	3.43
733-0007	....	4.70	4.46	4.17	3.69
733-0008	....	5.01	4.76	4.45	3.95
733-0009	....	5.32	5.06	4.73	4.21
733-0010	....	5.63	5.36	5.01	4.48
745-0001	745-0002	6.30	6.20	5.75	5.15
745-0003	....	12.50	9.50	9.00	7.50
745-0004	....	11.90	10.00	8.90	6.00
745-0005	....	19.75	16.75	14.65	13.00
745-0006	....	12.50	9.50	9.00	7.50
745-0007	745-0008	19.00	16.00	16.00	12.50
745-0009	....	22.00	18.60	18.60	15.50
749-0101	749-0201	18.39	16.64	14.99	14.04
749-0102	749-0202	31.28	26.72	25.78	23.84
749-0103	749-0203	42.66	38.32	35.67	31.83
749-0104	749-0204	55.36	49.72	45.08	40.64
749-0105	749-0205	66.65	61.20	54.00	49.85
749-0106	749-0206	77.70	69.60	63.00	57.00
749-0107	749-0207	88.69	77.35	72.10	63.70
749-0108	749-0208	100.72	86.00	80.88	69.20
749-0109	749-0209	111.60	94.50	88.92	76.68
749-0110	749-0210	118.90	103.00	95.50	81.50
501-0700-005	501-0700-009	1.36	1.18	1.02	.86
501-0701-009	....	1.14	1.05	.95	.83
501-0702-009	....	1.29	1.17	1.06	.91

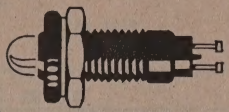
***Larger quantity prices available on request.**

DIALIGHT LED INDICATOR LIGHTS DIALCO®

SERIES 249

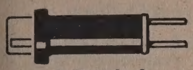


Cylindrical

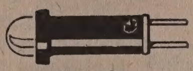


Stovepipe

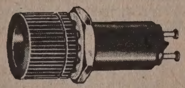
SERIES 507



Cylindrical



Stovepipe



Datalamp Holder

249 SERIES ULTRAMINIATURE INDICATOR LIGHTS WITH DIODE-LITES (LED)

Complete solid state indicator package consisting of light source, housing and lens, ready for permanent panel mounting. Light source is a solid state (LED) lamp that provides the advantages of low power with extremely long life measured in years. Compatible with IC's (can be driven directly by RTL, DTL and TTL logic). Unique lens design uses an internal fresnel ring to assure maximum distribution of the light output. Positive terminal is marked "+" for proper installation. Mounting bushing and flange ring are black anodized aluminum; terminals are low carbon steel, solder plated; lens is high strength plastic. Size: ⅞" behind panel (including 3/16" terminals); ⅜"-32 threaded body with ½" hex nut; fits panels to 5/16" thick. Lens, 9/32" dia. x 3/16".

VDC at 20 mA	Lens Color	Dialco Lens No.		Net Each, 1-9*
		Short Cylindrical	Short Stovepipe	
3.6	Red	249-7867-3331-504	249-7867-3731-504	$2.52
3.6	Yellow	249-7867-3333-504	249-7867-3733-504	2.52
3.6	White	249-7867-3335-504	249-7867-3735-504	2.52
3.6	Clear	249-7867-3337-504	249-7867-3737-504	2.52
5	Red	249-7868-3331-504	249-7868-3731-504	2.52
5	Yellow	249-7868-3333-504	249-7868-3733-504	2.52
5	White	249-7868-3335-504	249-7868-3735-504	2.52
5	Clear	249-7868-3337-504	249-7868-3737-504	2.52
6	Red	249-7869-3331-504	249-7869-3731-504	2.52
6	Yellow	249-7869-3333-504	249-7869-3733-504	2.52
6	White	249-7869-3335-504	249-7869-3735-504	2.52
6	Clear	249-7869-3337-504	249-7869-3737-504	2.52
10	Red	249-7870-3331-504	249-7870-3731-504	2.52
10	Yellow	249-7870-3333-504	249-7870-3733-504	2.52
10	White	249-7870-3335-504	249-7870-3735-504	2.52
10	Clear	249-7870-3337-504	249-7870-3737-504	2.52
14	Red	249-7871-3331-504	249-7871-3731-504	2.52
14	Yellow	249-7871-3333-504	249-7871-3733-504	2.52
14	White	249-7871-3335-504	249-7871-3735-504	2.52
14	Clear	249-7871-3337-504	249-7871-3737-504	2.52
28	Red	249-7872-3331-504	249-7872-3731-504	2.73
28	Yellow	249-7872-3333-504	249-7872-3733-504	2.73
28	White	249-7872-3335-504	249-7872-3735-504	2.73
28	Clear	249-7872-3337-504	249-7872-3737-504	2.73

★QUANTITY PRICING
249 AND 507 SERIES

Series	VDC	Price, 1-9	Net Each, Lots of					
			10-24	25-99	100-249	250-499	500-999	1000-2499
249	3.6–14	$2.52	$2.34	$2.17	$2.00	$1.84	$1.70	$1.55
249	28	2.73	2.54	2.36	2.17	2.00	1.85	1.69
507	3.6–14	1.75	1.63	1.50	1.38	1.27	1.17	1.07
507	28	1.93	1.79	1.66	1.52	1.40	1.29	1.18

Cartridge Connector—Ask for No. **515-0050** or **515-0012.**
Speed Clip—Ask for No. **515-0051.**

507 SERIES DATALAMP CARTRIDGES WITH SOLID STATE DIODE-LITES

Light source is a solid state lamp that provides the advantages of low power with extremely long life and reliability. IC compatible; interchangeable with standard incandescent cartridges. Oper. temperature, −55° to +60° C. For operation directly from RTL, DTL or TTL logic, the 10 mA cartridge is recommended; for optimum brightness, the 20 mA cartridge is recommended. Unique lens design features an internal fresnel ring to assure maximum distribution of light output. Polarity is marked on housing; terminal base is keyed. Housing is black anodized aluminum for high contrast; connections are stainless steel pins mounted in nylon insulated header, offset for polarization; lens is high strength plastic, permanently attached. Cartridge may be mounted with Datalamp Holder or cartridge connector with speed clip (listed below). Size, .284" dia. x 1.140" max. overall (including .203" terminals).

20 mA DATALAMP CARTRIDGES

VDC	Lens Color	Dialco Lens No.		Net Each, 1-9*
		Short Cylindrical	Short Stovepipe	
3.6	Red	507-4756-3331-500	507-4756-3731-500	$1.75
3.6	Yellow	507-4756-3333-500	507-4756-3733-500	1.75
3.6	White	507-4756-3335-500	507-4756-3735-500	1.75
3.6	Clear	507-4756-3337-500	507-4756-3737-500	1.75
5	Red	507-4757-3331-500	507-4757-3731-500	1.75
5	Yellow	507-4757-3333-500	507-4757-3733-500	1.75
5	White	507-4757-3335-500	507-4757-3735-500	1.75
5	Clear	507-4757-3337-500	507-4757-3737-500	1.75
6	Red	507-4758-3331-500	507-4758-3731-500	1.75
6	Yellow	507-4758-3333-500	507-4758-3733-500	1.75
6	White	507-4758-3335-500	507-4758-3735-500	1.75
6	Clear	507-4758-3337-500	507-4758-3737-500	1.75
10	Red	507-4759-3331-500	507-4759-3731-500	1.75
10	Yellow	507-4759-3333-500	507-4759-3733-500	1.75
10	White	507-4759-3335-500	507-4759-3735-500	1.75
10	Clear	507-4759-3337-500	507-4759-3737-500	1.75
14	Red	507-4760-3331-500	507-4760-3731-500	1.75
14	Yellow	507-4760-3333-500	507-4760-3733-500	1.75
14	White	507-4760-3335-500	507-4760-3735-500	1.75
14	Clear	507-4760-3337-500	507-4760-3737-500	1.75
28	Red	507-4761-3331-500	507-4761-3731-500	1.93
28	Yellow	507-4761-3333-500	507-4761-3733-500	1.93
28	White	507-4761-3335-500	507-4761-3735-500	1.93
28	Clear	507-4761-3337-500	507-4761-3737-500	1.93

10 mA DATALAMP CARTRIDGES

3.6	Red	507-4763-3331-500	507-4763-3731-500	$1.75
3.6	Yellow	507-4763-3333-500	507-4763-3733-500	1.75
3.6	White	507-4763-3335-500	507-4763-3735-500	1.75
3.6	Clear	507-4763-3337-500	507-4763-3737-500	1.75
5	Red	507-4764-3331-500	507-4764-3731-500	1.75
5	Yellow	507-4764-3333-500	507-4764-3733-500	1.75
5	White	507-4764-3335-500	507-4764-3735-500	1.75
5	Clear	507-4764-3337-500	507-4764-3737-500	1.75
6	Red	507-4765-3331-500	507-4765-3731-500	1.75
6	Yellow	507-4765-3333-500	507-4765-3733-500	1.75
6	White	507-4765-3335-500	507-4765-3735-500	1.75
6	Clear	507-4765-3337-500	507-4765-3737-500	1.75
10	Red	507-4766-3331-500	507-4766-3731-500	1.75
10	Yellow	507-4766-3333-500	507-4766-3733-500	1.75
10	White	507-4766-3335-500	507-4766-3735-500	1.75
10	Clear	507-4766-3337-500	507-4766-3737-500	1.75
14	Red	507-4767-3331-500	507-4767-3731-500	1.75
14	Yellow	507-4767-3333-500	507-4767-3733-500	1.75
14	White	507-4767-3335-500	507-4767-3735-500	1.75
14	Clear	507-4767-3337-500	507-4767-3737-500	1.75
28	Red	507-4768-3331-500	507-4768-3731-500	1.93
28	Yellow	507-4768-3333-500	507-4768-3733-500	1.93
28	White	507-4768-3335-500	507-4768-3735-500	1.93
28	Clear	507-4768-3337-500	507-4768-3737-500	1.93

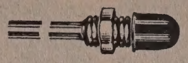
DATALAMP HOLDERS FOR 507 SERIES

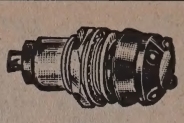
Black anodized mtg. bushing, collar, flange nut; gold plated phosphor bronze terminals. Series 508 has collar (33/64" dia. x 9/32"); extends 57/64" behind panel. Series 250 has no collar, extends 1 1/32". Mount in ⅜" hole in panels to 5/32" thick.

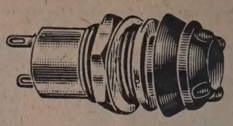
Dialco No.	Terminals	Net Each, Lots of						
		1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
508-8738-504	Turret	$1.54	$1.35	$1.23	$1.04	$0.93	$0.82	$0.71
508-7538-504	Cup†	1.54	1.35	1.23	1.04	.93	.82	.71
508-7438-504	Blade†	1.28	1.12	1.01	.86	.79	.68	.61
508-9038-504	Taper*	2.53	2.27	2.12	1.84	1.70	1.50	1.25
250-8738-14-504	Turret	1.40	1.22	1.11	.93	.86	.74	.66
250-7538-14-504	Cup†	1.40	1.22	1.11	.93	.86	.74	.66
250-7438-14-504	Blade†	1.11	.98	.88	.74	.67	.59	.52
250-9038-14-504	Taper*	2.38	2.13	2.00	1.72	1.64	1.43	1.20
515-0051	Speed Clip	.12	.11	.10	.08	.07	.06	.05
515-0012	Connector	.77	.67	.58	.48	.42	.36	.33

*Amp "53" taper pin receptacle. †Solder type.

DIALIGHT Indicator Lights (DIALCO®)


252-9951


270-1930


271-8430

NEW SUB-SUBMINIATURE SERIES 252-9951

Reliable T-1 filament lamp enclosed in stovepipe, high-impact, translucent plastic lens molded to mounting bushing. Stainless steel housing. Steel, cadmium-plated mounting nut with chromate coating. Moisture and dust proof. High-temperature, Type E wire leads with silver-plated, stranded #26 copper conductor and fluorocarbon insulation. Anti-rotation (locked) construction. Long-life lamp, 60,000 hrs. at 5 volts. Requires only .193″ panel mounting hole. Conforms to MIL-L-3061B and Drawing MS25446. Size, 7⁄32″ dia. x 35⁄64″ long (less terminal length).

Dialco Nos. 252-9951-0971 (Red), **252-9951-0972** (Green), **252-9951-0973** (Amber), **252-9951-0974** (Blue), **252-9951-0975** (White), **252-9951-0937** (Clear, transparent). Net Each, 1–9 ...... **$3.26**
10–24 .... **$3.05**; 25–99 .... **2.84**

SERIES 270 FOR PLASTIC PLATE EDGE-LIGHTING

Subminiature units for MIL-P-7788 plastic plate panels, per MIL Drawing MS25010 Rev. D. Size, 17⁄16″ long, 1½″ O.D. Mounts in 15⁄32″ hole. **Series 270-1930** has solder type terminals; **Series 270-1830**, screw-type terminals. Shpg. Wt., 2 oz. Less lamp.

Dialco No.	Filter Color	Terminal Type	Net Each, Lots of		
			1-9	10-24	25-99
270-1930-0111-702	Red	Solder	$0.99	$0.88	$0.79
270-1930-0171-702	Clear	Solder	.99	.88	.79
270-1930-3111-702	Red	Solder	.99	.88	.79
270-1930-3771-702	Clear	Solder	.99	.88	.79

SERIES 270 (CONT'D)

Dialco No.	Filter Color	Terminal Type	Net Each, Lots of		
			1-9	10-24	25-99
270-1830-0111-702	Red	Screw	$1.19	$1.02	$0.92
270-1830-0171-702	Clear	Screw	1.19	1.02	.92
270-1830-3111-702	Red*	Screw	1.19	1.02	.92
270-1830-3771-702	Clear*	Screw	1.19	1.02	.92

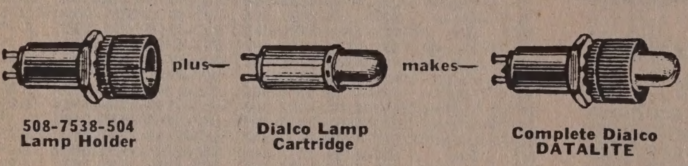
*With light-emitting top.

NEW SUB-MINIATURE LIGHTS FOR TRANSLUCENT PANEL EDGE LIGHTING

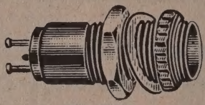
Designed to emit light through a red or clear-colored filter. Fo use with MIL-P-7788 (plastic plate) panels. Insulated brass ter minals have elongated slots. Cadmium-plated brass bushing Cadmium-plated steel internal-tooth lockwasher and hex nut Anti-rotation notch on face of flange. Opaque, light-seal washer Mounting hole, 15⁄32″. Max. panel thickness, ¼″. Max. projectio back of panel, 31⁄32″. O.D., ⅝″. Meet MIL-L-7806, 3661B, MS2501 Rev. D. Less lamp.

Dialco Nos. 271-8430-0111-702 (Red filter, black top), **271-8430 0171-702** (Clear filter, black top), **271-8430-3111-702** (Red filter red top), **271-8430-3171-702** (Clear filter, red top), **271-8430-0212 702** (Red filter, gray top), **271-8430-0272-702** (Clear filter, gra top).

Net Each, 1–9 .... **$1.60**; 10–24 .... **$1.45**; 25–99 .... **$1.32**



508-7538-504 Lamp Holder
Dialco Lamp Cartridge
Complete Dialco DATALITE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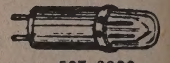
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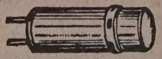
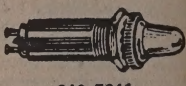

507-3835


249-7841

DIALCO DATALITES®

Ultra-miniature indicator lights for computers, data processing equipment, automation, etc. Mount in ⅜″ hole. "Datalites" are made in two basic styles—with Dialco's lamp cartridges, which are replaceable, and with built-in neon lamps which are permanent not replaceable.

SINGLE LAMP HOLDER

Use with Dialco's lamp cartridge, removable from front. Size, 113⁄16″ long, ½″ O.D. Mounts in ⅜″ hole. Two insulated terminals offset for correct polarity when replacing cartridges in DC circuits. Conform to applicable MIL specs. Collar, flange ring, mounting bushing of black anodized aluminum. With mounting hardware, less cartridge.

Dialco No. 508-7538-504—Solder cup terminals.
Dialco No. 508-8738-504—Turret terminals.
Dialco No. 508-7545-504—Solder cup terminals, 5⁄64″ longer to accommodate neon cartridge 507-4537 and high brightness type 507-4538.
Dialco No. 508-8745-504—Same as 508-7545-504, but with turret terminals.
Any Model—Net Each, 1–9 .... **$1.54**
Net Each, 10–24 .... **$1.35**; 25–99 .... **1.23**

NEW PANEL-MOUNTING DATALAMP HOLDERS

Similar to 508 Series single lampholder, less collar. Collar utilized when conditions demand plug-in datalamp cartridge be very securely retained. Black, anodized alum. mtg. bushing, collar and flange nut. Brass, white nickel finish mounting nut. Internal-tooth lockwasher of phosphor bronze with white nickel finish. Phosphor bronze, gold-plated terminals. Choice of turret or solder cup terminals. Max. projection back of panel, 11⁄32″. Max. panel thickness, 5⁄32″. Collar and knurled flange nut, 33⁄64″ dia.

Dialco Nos. 250-8738-14-504, 250-8745-14-504—With turret terminals; **Nos. 250-7538-14-504, 250-7545-14-504**—Same, but with solder cup terminals.
Net Each, 1–9 .... **$1.40**; 10–24 .... **$1.22**; 25–99 .... **$1.11**

NEON LAMP CARTRIDGES

For use with 508-8738-504, or 508-7538-504, and 250-7538-14-504, or 250-8738-14-504. Consists of NE-2E neon bulb, 1/25 watt with starting 65 VAC and 90 VDC; mounted in aluminum sleeve, capped with plastic stovepipe lens. Requires ⅓-watt ballast resistor. Size, 121⁄64″ long, ⅓″ O.D. Lens is transparent. **Lens Color:** Specify by changing 11th digit of part no. to: **1,** red, as listed; **3,** amber; **5,** white; **6,** yellow; **7,** clear (e.g., 507-3835-0933-600, amber lens). AC/DC models, standard brightness; AC models, high brightness.

Dialco No. 507-3835-0931-600—AC/DC, stovepipe lens.
Dialco No. 507-3835-1531-600—AC/DC, long cylindrical lens.
Dialco No. 507-3836-0931-600—AC, stovepipe lens.
Dialco No. 507-3836-1531-600—AC, long cylindrical lens.
Any Model—Net Each, 1–9 .... **$1.11**
Net Each, 10–24 .... **$0.98**; 25–99 .... **.89**

NEON CARTRIDGES

High brightness and standard brightness. Similar to Series 507-3835 and 507-3836 cartridges at left, but ⅛″ longer. Built-in resistor.

Dialco No.* 507-	Built-In Resistor	Current, Volts	Lens Type	Net Each, Lots of		
				1-9	10-24	25-99
4537-0931-640	56 K-ohms	105–125 AC/DC	Stovepipe	$1.50	$1.32	$1.22
4538-0931-610	22 K-ohms	110–125 AC	Stovepipe	1.50	1.32	1.22
4537-1531-640	56 K-ohms	105–125 AC/DC	Long Cylinder	1.50	1.32	1.22
4538-1531-610	22 K-ohms	110–125 AC	Long Cylinder	1.50	1.32	1.22

***Lens Color:** Specify by changing 11th digit of part no. to: **1,** red, as listed; **3,** amber; **5,** white; **6,** yellow; **7,** clear (e.g., 507-3835-0933-600, amber lens).

INCANDESCENT LAMP CARTRIDGES

For use with 508-8738-504, or 508-7538-504, and 250-7538-14-504, or 250-8738-14-504. Uses T-1¾ incandescent bulb mounted in aluminum sleeve and capped with short cylindrical lens. Size, 17⁄64″ long, 21⁄64″ O.D. Shpg. Wt., 1 oz.

Dialco No.*	Volts	Amps	Hours	Net Each, Lots of		
				1-9	10-24	25-99
507-3906-1471-600	6	.20	1000	$1.45	$1.29	$1.18
507-3913-1471-600	14	.08	1500	1.52	1.34	1.22
507-3917-1471-600	28	.04	4000	1.40	1.23	1.12
507-3914-1471-600	14	.08	15000	1.62	1.43	1.31
507-3918-1471-600	28	.04	7000	1.50	1.32	1.21

***Lens Color:** Specify by changing 11th digit of part no. to: **1,** red, as listed; **2,** green; **3,** amber; **4,** blue; **5,** white; **6,** yellow; **7,** clear (e.g., 507-3906-1472-600, green lens).

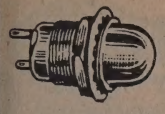
PERMANENT INDICATOR LIGHTS, NEON

Approximate life, 25,000 hours. With built-in resistors. Size, 153⁄64″ long, ½″ O.D. **Lens Color:** Specify by changing 11th digit of part no. to: **1,** red, as listed; **3,** amber; **5,** white; **7,** clear (e.g., 249-7841-0933-574, amber lens).

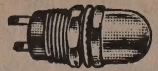
Dialco No. 249-7841-0931-574—Stovepipe lens, 100 K resistor.
Dialco No. 249-7866-0931-534—As above, but 33 K resistor.
Dialco No. 249-7841-1431-574—Short cylindrical, 100 K resistor.
Dialco No. 249-7866-1431-534—As above, but 33 K resistor.
Any Model—Net Each, 1–9 .... **$1.88**
Net Each. 10–24 .... **$1.76**; 25–99 .... **1.65**

DIALIGHT Indicator Lights

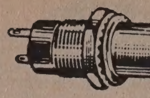
DIALCO®



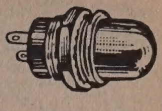
101-5030



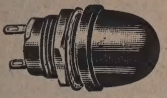
101-3830



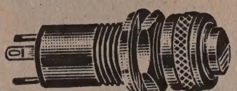
137-8836



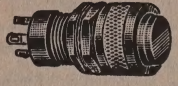
162-8430



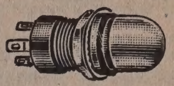
177-8430



804-1710



801-1030



812-1030

SUBMINIATURE SERIES

For use with T-1¾ bulbs for 1.35–28 V. Bulb replaceable from front of panel. Military grade phenolic assures permanent isolation from ground. Fully insulated. Black nickel finish. Lockwasher and nut supplied. Size, 1⅜" long, ¾" O.D. Shpg. Wt., 2 oz. Less lamp.

OMNIDIRECTIONAL LENS

Radiate light in all directions. **Series 101-3830** and **140-3830** mount in 15/32" clearance hole, front or back of panel. **Series 101-5030** and **140-5030** mount in 17/32" clearance hole, front of panel. **Series 101-3830** has movable flange, others fixed flange. Solder terminals. Series 101 has stovepipe shaped lens; Series 140, cylindrical lens.

Dialco No.	Lens Color	Dialco No.	Net Ea., Lots of		
Front Mounting		Front or Back Mtg.	1-9	10-24	25-99
101-5030-0971-201	Red	101-3830-0971-201	$1.60	$1.40	$1.25
101-5030-0972-201	Green	101-3830-0972-201	1.60	1.40	1.25
101-5030-0973-201	Amber	101-3830-0973-201	1.60	1.40	1.25
101-5030-0975-201	White	101-3830-0975-201	1.60	1.40	1.25
140-5030-1471-201	Red	140-3830-1471-201	1.60	1.40	1.25
140-5030-1472-201	Green	140-3830-1472-201	1.60	1.40	1.25
140-5030-1473-201	Amber	140-3830-1473-201	1.60	1.40	1.25
140-5030-1475-201	White	140-3830-1475-201	1.60	1.40	1.25

NEON SUBMINIATURE MS25257

Series 137-8836—Front mount in 15/32" hole. Built-in resistor (pat.). Accommodates C7A (NE-2D) lamp. For 105–125 VAC or DC. Size, 1½" x ⅝". Weight, 1½ oz. Less lamp. **Series 137-8864**—Same, but not for MS Drawing. Accommodates C9A (NE-2J) lamp.

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of		
			1-9	10-24	25-99
Yellow	137-8836-0933-552	MS25257-2	$2.56	$2.23	$2.02
Red	137-8836-0931-552	MS25257-4	2.56	2.23	2.02
Clear	137-8836-0937-552	MS25257-6	2.56	2.23	2.02
Red	137-8864-0931-512	....	2.56	2.23	2.02
Amber	137-8864-0933-512	....	2.56	2.23	2.02
White	137-8864-0935:512	....	2.56	2.23	2.02
Yellow	137-8864-0936-512	....	2.56	2.23	2.02
Clear	137-8864-0937-513	....	2.56	2.23	2.02

INCANDESCENT SUBMINIATURE MS25256

Front mount in 15/32" hole. Use T-1¾ incandescent bulbs. Fully insulated. Size, 1 3/32" x ⅝". Weight, 1½ oz. Less lamp.

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of		
			1-9	10-24	25-99
Yellow	162-8430-0933-502	MS25256-2	$1.53	$1.34	$1.22
Green	162-8430-0932-502	MS25256-4	1.53	1.34	1.22
Red	162-8430-0931-502	MS25256-6	1.53	1.34	1.22
Clear	162-8430-0937-502	MS25256-8	1.53	1.34	1.22
White	162-8430-0975-502	MS25256-10	1.53	1.34	1.22
Blue	162-8430-0934-502	MS25256-12	1.53	1.34	1.22

NEW WATER-TIGHT INCANDESCENT LIGHTS

Complete assemblies incandescent indicator lights in translucent colors. Water-tight, oil-tight, dust-tight on face of panel. With retained O-ring seals. Black, anodized aluminum mounting bushing. Internal-tooth lockwasher and mounting nut of cadmium-plated steel. Fully insulated brass terminals with elongated slots. Meet MIL-L-6723 and MIL-L-3661B. Max. projection back of panel, ⅝". Max. panel thickness, 3/16". Mount in 15/32" clearance hole front of panel with fixed flange. Size, O.D., 37/64".
Dialco Nos. 177-8430-0971-503 (Red), **177-8430-0972-503** (Green), **177-8430-0973-503** (Amber), **177-8430-0974-503** (Blue), **177-8430-0975-503** (White, translucent), **177-8430-0976-503** (Light Yellow). Net Each, 1–9.... **$1.91**; 10–24.... **$1.67**; 25–99.... **$1.54**

PRESS-TO-TEST ASSEMBLIES

Meets requirements of MIL-L-7961B

A slight pressure on the face of the unit "breaks" the normal circuit and "makes" a test circuit. If lamp lights up when pressed in, it is satisfactory. If it fails to light, the lamp is defective. Equipped with three terminals: Two for "normal" circuit, the third for "test" circuit.

SERIES 804/803 (MS25331)

Mount from back in ⅝" clearance hole. Accommodates T-3¼ lamp with miniature bayonet base. Overall size, ⅞" x 2¼". Shpg. Wt., 1½ oz. Less lamp.

WITH MECHANICAL SHUTTER DIMMER

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of		
			1-9	10-24	25-99
Clear	804-1710-0337-504	MS25331-1	$3.39	$2.97	$2.74
Red	804-1710-0331-504	MS25331-2	3.39	2.97	2.74
Green	804-1710-0332-504	MS25331-3	3.39	2.97	2.74
Amber	804-1710-0333-504	MS25331-4	3.39	2.97	2.74
Blue	804-1710-0334-504	....	3.39	2.97	2.74

WITHOUT DIMMER

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of		
			1-9	10-24	25-99
Clear	803-1710-0337-504	MS25331-5	$3.09	$2.72	$2.48
Red	803-1710-0331-504	MS25331-6	3.09	2.72	2.48
Green	803-1710-0332-504	MS25331-7	3.09	2.72	2.48
Amber	803-1710-0333-504	MS25331-8	3.09	2.72	2.48
Blue	803-1710-0334-504	....	3.09	2.72	2.48

SERIES 801/800 (MS25041)

Similar to above, but mounts in 15/32" clearance hole, accommodates T-1¾ lamp with midget flange base, ⅝" x 1⅜". Less lamp.

WITH MECHANICAL SHUTTER DIMMER

Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of		
			1-9	10-24	25-99
Clear	801-1030-0337-504	MS25041-1	$2.86	$2.52	$2.32
Red	801-1030-0331-504	MS25041-2	2.86	2.52	2.32
Green	801-1030-0332-504	MS25041-3	2.86	2.52	2.32
Amber	801-1030-0333-504	MS25041-4	2.86	2.52	2.32
Blue	801-1030-0334-504	MS25041-10	2.86	2.52	2.32

WITHOUT DIMMER

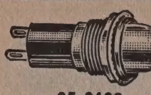
Lens Color	Dialco No.	MIL Type No.	Net Ea., Lots of		
			1-9	10-24	25-99
Clear	800-1030-0337-504	MS25041-5	$2.46	$2.17	$1.99
Red	800-1030-0331-504	MS25041-6	2.46	2.17	1.99
Green	800-1030-0332-504	MS25041-7	2.46	2.17	1.99
Amber	800-1030-0333-504	MS25041-8	2.46	2.17	1.99
Blue	800-1030-0334-504	MS25041-11	2.46	2.17	1.99

SERIES 812

Same as above, but with stovepipe lens.

Lens Color	Dialco No.	Net Each, Lots of		
		1-9	10-24	25-99
White	812-1030-0975-506	$2.71	$2.37	$2.18
Red	812-1030-0971-506	2.71	2.37	2.18
Green	812-1030-0972-506	2.71	2.37	2.18
Amber	812-1030-0973-506	2.71	2.37	2.18

DIALIGHT Indicator Lights DIALCO®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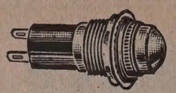
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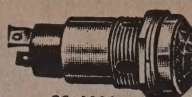
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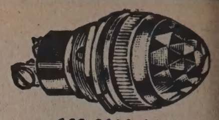
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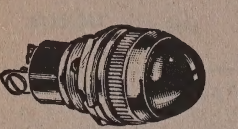
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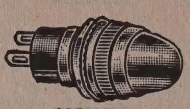
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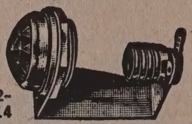
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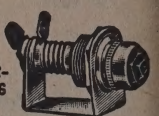

502-8136

NEON SERIES 95-0408, 52-0408, & SERIES 135-0408

Now also available with new High Brightness B2A Neon Glow Lamp. Have Patented Built-in Resistor.

Series 95—Two types available: Series 95-0408 enclosed neon indicator light has 56K-ohm, ⅓-watt resistor built-in for use with the regular B1A neon lamp on 105–125 volt circuit. Series 95-0463 has built-in 22K-ohm resistor for use with new B2A high brightness neon lamp on 110–125 VAC circuits. Rugged design; resistor fully insulated in molded phenolic. Plastic head gives 180° light spread. Mounting bushing is black nickel plated. Solder terminals. Size: 2 1/16″ long, 15/16″ O.D.; mounts in 11/16″ hole in panels up to ⅜″ thick. UL and CSA Listed. Meets requirements of MIL-L-3661A. **Series 52-0408** same as 95-0408 and **52-0463** same as 95-0463, but with internally fluted stovepipe lens. **Series 135-0408** same as 95-0408 and **135-0463** same as 95-0463, but with cylindrical (screw-in) lens. Shpg. Wt., 3 oz. Less lamp.

Net Each, 1–9 .... **$1.60**
Net Each, 10–24 . **$1.42**; 25–99 . **1.33**

WITH 56K-OHM RESISTOR

	Dialco No.†		
*	95-0408-	52-0408-	135-0408-
R	0931-241	0991-241	1431-241
A	0933-241	0993-241	1433-241
W	0935-241	0995-241	1435-241
C	0937-241	0997-241	1437-241

WITH 22K-OHM RESISTOR

	Dialco No.†		
*	95-0463-	52-0463-	135-0463-
R	0931-211	0991-211	1431-211
A	0933-211	0993-211	1433-211
W	0935-211	0995-211	1435-211
C	0937-211	0997-211	1437-211

*Lens: R, red; A, amber; W, white; C, clear. †Black nickel finish as listed; for polished chrome finish change 11th digit to 3 (e.g., 95-0408-0931-341).

INCANDESCENT SERIES 81-0410 SERIES 95-0410, 52-0410

Series 81-0410—For use with T-3¼ bulb, miniature bayonet base incandescent, for 2–55 V circuits. Replaceable from front of panel. Aviation type assembly with socket shell encased in molded phenolic. Smooth face lenses in ½″ brass lens holder. Holder and mounting bushing black nickel plated. Solder terminals. Size: 2¼″ lg., 15/16″ O.D.; mounts in 11/16″ hole in panels up to ⅜″ thick. UL and CSA Listed. Meets MIL-L-3661A requirements.

Net Each, 1–9 .... **$1.35**
Net Each, 10–24 . **$1.20**; 25–99 . **1.12**

Series 95-0410 and **52-0410**—Same as 81-0410, but ⅝″ plastic stovepipe lens. Series 52-0410 lens is internally fluted. Wt., 3 oz. Less lamp. **For polished chrome finish** change third-from-last digit to 3 (e.g., 81-0410-0111-301). Net Ea., 1–9 . . **$1.60**
Net Each, 10–24 . **$1.41**; 25–99 . **1.33**

*	Convex No. 81-0410-	Stovepipe No. 95-0410-	Fluted No. 52-0410-
R	0111-201	0971-201	0991-201
G	0112-201	0972-201	0992-201
A	0113-201	0973-201	0993-201
W	0135-201†	0975-201	0995-201

*Lens: R—red, G—green, A—amber, W—white. †Translucent unfrosted lens.

ENCLOSED ASSEMBLIES ONE-INCH SERIES 32-4001

Series for use with S-6 incandescent bulbs with candelabra screw base for 6–125 volt circuits. Lamp replaceable from front of panel. Faceted lens in choice of colors with friction-fit lens holder of polished chrome; white nickel plated mounting bushing. Iridite coated, cadmium plated steel hex nut and split lockwasher. Solder terminals. Size, 2 25/32″ long, 1 3/16″ O.D.; mounts in 1″ hole. UL and CSA Listed. Shpg. Wt., 4 oz. Less lamp.

Dialco Nos. 32-4001-0431-302 (Red), **32-4001-0432-302** (Green), **32-4001-0433-302** (Amber) or **32-4001-0437-302** (Clear)—Same, but with convex back frosted lens. **Dialco Nos. 4001-0111-302** (Red), **32-4001-0112-302** (Green), **32-4001-0113-302** (Amber), **32-4001-0117-302** (Clear).

Net Each, 1–9 .... **$1.83**
Net Each, 10–24 . **$1.60**; 25–99 . **1.45**

1″ OIL-TIGHT SERIES

For Heavy Duty Industrial Applications

Enclosed rugged design gasketed with oil-proof gaskets impervious to oil, water and dust. Rugged binding screw terminals. Caps unscrew from face of panel. One-piece, solid brass mounting bushing; solid brass knurled lens holder; chrome finish. Glass lens gives omnidirectional (180°) light spread. High impact phenolic insulation. Size, 1⅞″ long, 1 3/16″ O.D. Mounts in 1″ clearance hole. Shpg. Wt., 3 oz., average. Less lamp.

Screw Base Types—Net Ea., 1–9 . . **$3.49**
Net Each, 10–24 . **$3.21**; 25–99 . **3.00**
Bayonet Base Types—Net, 1–9 . . . **3.83**
Net Each, 10–24 . **$3.54**; 25–99 . **3.30**

FOR 6S6 INCANDESCENT LAMPS

Torpedo Faceted Lens

For Screw Base	*	For Bayonet Base
103-3101-1331-403	R	103-3502-1331-403
103-3101-1332-403	G	103-3502-1332-403
103-3101-1333-403	A	103-3502-1333-403
103-3101-1334-403	B	103-3502-1334-403
103-3101-1335-403	W	103-3502-1335-403
103-3101-1336-403	Y	103-3502-1336-403
103-3101-1337-403	C	103-3502-1337-403
Dome Type Lens (Frosted Back)		
103-3101-1211-403	R	103-3502-1211-403
103-3101-1212-403	G	103-3502-1212-403
103-3101-1213-403	A	103-3502-1213-403
103-3101-1214-403	B	103-3502-1214-403
103-3101-1235-403	W	103-3502-1235-403
103-3101-1216-403	Y	103-3502-1216-403
103-3101-1217-403	C	103-3502-1217-403

*R–Red; G–Green; A–Amber; B–Blue; W–Translucent, unfrosted white; Y–Yellow; C–Clear.

FOR NEON GLOW LAMPS

Dome Type Lens

For use with B7A candelabra screw base lamps. Resistor built into lamp base. Size, 2 7/32″ long, 1 3/16″ O.D. Fits 1″ clearance hole. Shpg. Wt., 3 oz. Less lamp.

Dialco No.	Lens Color	Net Ea., Lots 1-9	Net Ea., Lots 10-24
103-3114-1231-403	Red	$3.49	$3.21
103-3114-1233-403	Amber	3.49	3.21
103-3114-1236-403	Yellow	3.49	3.21
103-3114-1237-403	Clear	3.49	3.21
103-3114-1217-403	Clear*	3.49	3.21

*Frosted back.

11/16″ OIL-TIGHT SERIES

Stovepipe Lenses—Fluted or Plain

With built-in resistor. Size, 2 9/64″ long, 15/16″ O.D. Mounts in 11/64″ diameter hole. Shipping Weight, 2 oz. Less lamp.

FOR B1A NEON GLOW LAMP

Any model. Net Each, 1–9 .... **$2.55**
Net Each, 10–24 . **$2.31**; 25–99 . **2.19**

Fluted Lens	*	Plain Lens
125-0408-1191-443	R	125-0408-1131-443
125-0408-1193-443	A	125-0408-1133-443
125-0408-1196-443	Y	125-0408-1136-443
125-0408-1197-443	C	125-0408-1137-443
....	CL	125-0408-1117-443

11/16″ OIL-TIGHT SERIES (CONT'D)

FOR B2A NEON GLOW LAMP

Any model. Net Each, 1–9 .... **$2.5**
Net Each, 10–24 . **$2.31**; 25–99 . **2.1**

Fluted Lens	*	Plain Lens
125-0463-1191-413	R	125-0463-1131-41
125-0463-1193-413	A	125-0463-1133-41
125-0463-1195-413	W†	125-0463-1135-41
125-0463-1196-413	Y	125-0463-1136-41
125-0463-1197-413	C	125-0463-1137-41

FOR LOW-VOLTAGE T-3¼ MINIATURE BAYONET BASE LAMP

Any model. Net Each, 1–9 .... **$2.3**
Net Each, 10–24 . **$2.11**; 25–99 . **2.0**

Fluted Lens	*	Frosted Lens
125-0410-1191-403	R	125-0410-1111-403
125-0410-1192-403	G	125-0410-1112-403
125-0410-1193-403	A	125-0410-1113-403
125-0410-1194-403	B	125-0410-1114-403
125-0410-1195-403	W	125-0410-1135-403
125-0410-1196-403	Y	125-0410-1116-403
125-0410-1197-403	C	125-0410-1117-403

*R–Red; G–Green; A–Amber; B–Blue W–White; Y–Yellow; C–Clear; Cl–Froste back, clear. †Translucent unfrosted.

OPEN SOCKET ASSEMBLIES SERIES 502-3214

ONE-INCH REMOVABLE JEWEL

Candelabra base, 115 volt pilot light assembly with faceted jewel in highly polished chrome plated brass holder. Fo standard bulbs. Requires 1″ mounting hole Solder terminals. Easily adjusted to panel Secured to panel by separate bushings int which the lens holders are a friction fit permitting removal for lamp replacement **Dialco Nos. 502-3214-0431-302** (Red), **502-3214-0432-302** (Green) or **502-3214-0433-302** (Amber)—Net Each, 1–9..... **$1.39**
Net Each, 10–24 . **$1.31**; 25–99 . **1.22**

SERIES 502-8136, -8137

HALF-INCH REMOVABLE JEWEL

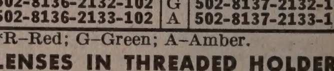
For operation with low volt, miniature bayonet and miniature screw base, incandescent lamps. Has white nickel finish. Requires 11/16 in. mounting hole. Faceted lens. Solder terminals. Effective lens diameter ½″. All brackets are insulated from the live terminals. Unit secured by separate bushings; caps may be removed easily for access to the lamps. Less bulb.

Any model. Net Each, 1–9 .... **$0.78**
Net Each, 10–24 .... **.73**

Bayonet Base	*	Screw Base
502-8136-2131-102	R	502-8137-2131-102
502-8136-2132-102	G	502-8137-2132-102
502-8136-2133-102	A	502-8137-2133-102

*R–Red; G–Green; A–Amber.

LENSES IN THREADED HOLDERS FOR PANEL MOUNTING



For use with separately mounted lamp sockets. All-purpose smooth jewels in polished chrome-plated brass holders for up to 9/32″ panels, ¾″, ½″ and 11/32″ diameters—requiring 11/16″, 7/16″ and 9/32″ holes, respectively for mounting. Shpg. Wt., 2 oz.

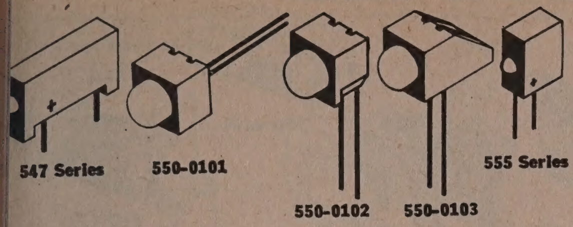
Dialco Nos. 514-2512-0111-302 (Red), **514-2512-0112-302** (Green), **514-2512-0113-302** (Amber)—Net Each, 1–9 .... **$0.79**
Net Each, 10–24 . **$0.75**; 25–99 . **.70**

Dialco Nos. 514-1012-0621-102 (Red), **514-1012-0622-102** (Green), **514-1012-0623-102** (Amber)—Net Each, 1–9 .... **$0.30**
Net Each, 10–24 . **$0.28**; 25–99 . **.26**

Dialco Nos. 514-0512-0621-102 (Red), **514-0512-0622-102** (Green), **514-0512-0623-102** (Amber)—Net Each, 1–9 .... **$0.30**
Net Each, 10–24 . **$0.28**; 25–99 . **.26**

DIALIGHT LED INDICATORS, LAMPS, ISOLATORS DIALCO®

DIODE-LITE™ LED LOGIC/STATE FAULT INDICATORS



SERIES 547 CIRCUIT BOARD INDICATOR

Compact, versatile unit may be used as a fault indicator for trouble shooting complex printed circuit cards, as logic/state indicator, or indicator light. Binary data display permits stacking so multiple functions can be displayed. Features gallium arsenide phosphide LED; identified polarity; built-in series resistor. Can be driven directly from DTL and TTL logic. Gold plated leads. Pin spacing compatible with DIP sockets. Compact design permits dense packaging. Available in range of voltages and currents. Size, .094"-.098" w. x .540" d. overall x .248" h. Pin length, .150".

Dialco No.	Volts	mA	Dialco No.	Volts	mA
547-2001	1.7*	....	**547-2005**	10.0	14
547-2002	3.6	20	**547-2006**	14.0	10
547-2003	5.0	6	**547-2007**	5.0	3
547-2004	5.0†	16			

*Requires external resistor. Maximum DC forward current, 50 mA. Typical operating current, 20 mA. †For higher brightness, can be operated at 6 V at 20 mA.

Dialco No.	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
547-2001	**$1.95**	**$1.81**	**$1.70**	**$1.57**	**$1.45**	**$1.33**	**$1.20**
547-2002	**1.99**	**1.85**	**1.74**	**1.61**	**1.48**	**1.36**	**1.23**
547-2003	**1.99**	**1.85**	**1.74**	**1.61**	**1.48**	**1.36**	**1.23**
547-2004	**1.99**	**1.85**	**1.74**	**1.61**	**1.48**	**1.36**	**1.23**
547-2005	**1.99**	**1.85**	**1.74**	**1.61**	**1.48**	**1.36**	**1.23**
547-2006	**1.99**	**1.85**	**1.74**	**1.61**	**1.48**	**1.36**	**1.23**
547-2007	**1.99**	**1.85**	**1.74**	**1.61**	**1.48**	**1.36**	**1.23**

SERIES 550 SOLID STATE LED GaAsP RED DIFFUSED LIGHT SOURCE

Ideal for indicator light, panel illumination, logic/state indicator, binary data display. Allows for high density packaging. Polarity identified. Model 550-0103 designed for installations where a more rigid assembly is required. **V_F:** 1.8 volts typical at 50 mA, 2.3 volts max. **I_F:** 50 mA max. **V_R:** 3 volts max. **BV_R:** 3.0 volts min. at 10 μA, 8.0 volts typical. **Power Dissipation:** 100 mW (derate 1.3 mW/° C above 25° C). **Storage Operating Temp.:** −40° to +100° C. **Solder Temp.:** 250° C at 0.1" from seating plane for 5 seconds. **Luminous Intensity:** 2.0 mcd at 20 mA. **Wavelength:** 650 nM at peak. **Rise and Fall Time:** 10 ns for 10–90% of light.

Dialco No.	Diffusion	Net Each, Lots of 1-99	100-999	1000-2499
550-0101	Red	**$0.86**	**$0.64**	**$0.58**
550-0102	Red	**.86**	**.64**	**.58**
550-0103	Red	**.86**	**.64**	**.58**

SERIES 555 LOGIC/STATE FAULT INDICATOR

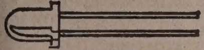
Use as fault indicator for trouble shooting complex circuits, logic/state indicator, indicator light, or binary data display. High intensity red diffused light. Gallium arsenide phosphide LED. Polarity identified. Built-in series resistor. Size, .100" w. x .240" d. x .250" h. Lead length, .281" min. Lamp, .080" diameter.

Dialco No.	Volts	mA	Dialco No.	Volts	mA
555-2001	1.7	*	**555-2005**	10.0	14
555-2002	3.6	20	**555-2006**	14.0	10
555-2003	5.0	6	**555-2007**	5.0	3
555-2004	5.0†	16			

*Requires external resistor. Maximum DC forward current, 50 mA. Typical operating current, 20 mA. †For higher brightness, can be operated at 6 V at 20 mA.

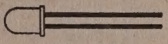
Dialco No.	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
555-2001	**$1.29**	**$1.17**	**$1.07**	**$0.97**	**$0.88**	**$0.81**	**$0.74**
555-2002	**1.34**	**1.22**	**1.11**	**1.01**	**.92**	**.84**	**.77**
555-2003	**1.34**	**1.22**	**1.11**	**1.01**	**.92**	**.84**	**.77**
555-2004	**1.34**	**1.22**	**1.11**	**1.01**	**.92**	**.84**	**.77**
555-2005	**1.34**	**1.22**	**1.11**	**1.01**	**.92**	**.84**	**.77**
555-2006	**1.34**	**1.22**	**1.11**	**1.01**	**.92**	**.84**	**.77**
555-2007	**1.34**	**1.22**	**1.11**	**1.01**	**.92**	**.84**	**.77**

SERIES 521 DIODE-LITES™ GALLIUM ARSENIDE PHOSPHIDE SOLID STATE LAMPS

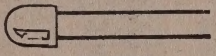


521-9165

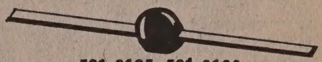
521-9167, 521-9168



521-9189



521-9180



521-9185, 521-9186

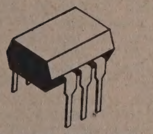
High luminance light sources offer longer lamp life, lower current at low cost. For applications requiring direct mounting through a panel. IC compatible; vibration and shock resistant; wide viewing angle. Solid state reliability, with life measured in years. Consist of a gallium arsenide phosphide semiconductor diode, completely encapsulated, with red or clear diffusion. Light source for Nos. 521-9167 and 521-9168 is contained in a black case, giving excellent contrast when "On", yet appearing black when "Off". The 521-9165 base has a flat on one side which gives the device an antirotation feature as well as indicating which lead is the cathode. Leads are flexible enough for bending and rigid enough for direct mounting to a PC board. **Forward Voltage:** 1.8 volts typical at 50 mA, 2.3 volts max. **Forward DC Current:** 50 mA max. **Reverse Voltage:** 3 volts max. **Reverse Breakdown Voltage:** 3.0 volts minimum at 10 μA, 8.0 volts typical. **Power Dissipation:** 100 mW (derate 1.3 mW/° C above 25° C). **Storage/Operating Temperature:** −40° to +100° C. **Relative Humidity:** 98% at 65° C. **Solder Temperature:** 250° C at 0.1" from seating plane for 5 seconds. **Luminous Intensity:** 2.0 mcd at 20 mA, except 521-9167, 521-9168, 1.0 mcd; 521-9189, .4 mcd; 750 ft. lamberts for 521-9185, 521-9186. **Luminous Flux:** 1.35 mlumen. **Wavelength:** 650 nM at peak. **Spectral Line Width:** 25 nM. **Rise and Fall Time:** 10 ns for 10–90% of light intensity for step change in current. **Angle of Half Intensity:** 35°. **Angle of 0.1 Intensity:** 85°.

Dialco No.	Diffusion	Lens Size, In. Dia.	Height	Net Each, Lots of 1-99	100-999	1000-2499
521-9165	Red	.192	.240	**$0.50**	**$0.37**	**$0.33**
521-9166	Clear	.192	.240	**.60**	**.45**	**.39**
521-9167	Red	.190–.210	.190	**.74**	**.55**	**.48**
521-9168	Clear	.190–.210	.190	**.74**	**.55**	**.48**
521-9180	Red	.185	.230	**.74**	**.55**	**.48**
521-9185	Red*	.120	.100	**.49**	**.36**	**.31**
521-9186	Red	.120	.100	**.49**	**.36**	**.31**
521-9189	Red	.150	.190	**.59**	**.49**	**.35**
521-9190	Clear*	.192	.240	**.60**	**.45**	**.39**

*Non-diffused. (Balance diffused.)

OPTO-ISOLATORS

SERIES 551-0002 AND 551-0003

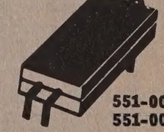


551-0002, 551-0003

Electrically isolates low voltage logic circuits from high voltage outputs. Connects two systems by transmission of light energy (photons) eliminating need for a common electrical ground while providing effective isolation between the systems. Gallium arsenide light emitting diode and n-p-n silicon phototransistor mounted on a 6-lead frame encapsulated within an electrically non-conductive plastic compound. Withstands soldering temperature with no deformation. Remains stable even in high humidity conditions. High-voltage electrical isolation, 1.5 kV rating. Body size, .25" w. x .35" d. x .18" h. Lead length, 0.125" min.

Absolute Maximum Ratings at 25° C Ambient-Air Temperature	Dialco No. 551-0002	551-0003
Input-to-Output Voltage	±1.5 kV	±1.5 kV
Collector-Base Voltage	70 V	30 V
Emitter-Collector Voltage	7 V	4 V
Emitter-Base Voltage	7 V	4 V
Input-Diode Reverse Voltage	3 V	3 V
Input Forward Current	60 mA	60 mA
Power Dissipation:		
Light-Emitting Diode	100 mW	100 mW
Phototransistor	150 mW	150 mW
Storage Temperature Range	−55° C to +150° C	−55° C to +150° C
Lead Temperature 1/16" from case for 10 seconds	240° C	240° C

SERIES 551-0001 AND 551-0004



551-0001, 551-0004

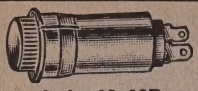
Electrically isolates low voltage outputs. Connects two systems by transmission of light energy (photons), eliminating need for a common electrical ground. Gallium arsenide diode light source optically coupled to a silicon n-p-n phototransistor. Direct-current transfer ratio, 75%, typical. Storage Temperature Range: −55° C to +125° C. Body size, .500" w. x .275" d. x .118" h. Lead lengths, .220" maximum.

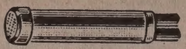
Absolute Maximum Ratings at 25° C Ambient-Air Temperature	Dialco Nos. 551-0001 and 551-0004
Input-to-Output Voltage	±2.8 kV
Collector-Base Voltage	40 V
Emitter-Collector Voltage	6 V
Input-Diode Reverse Voltage	2 V
Input Forward Current*	30 mA
Power Dissipation:*	
Light-Emitting Diode	50 mW
Phototransistor	200 mW

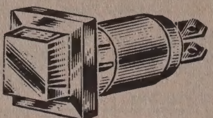
*Continuous at/below 25° C ambient-air temperature.

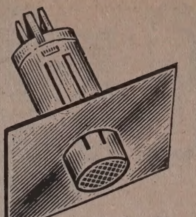
Dialco No.	Net Each, Lots of 1-9	10-24	25-99	100-249	250-499	500-999	1000-2499
551-0001	**$4.90**	**$4.56**	**$4.23**	**$3.91**	**$3.60**	**$3.30**	**$3.01**
551-0002	**5.00**	**5.00**	**5.00**	**3.35**	**3.35**	**3.35**	**3.00**
551-0003	**2.50**	**2.50**	**2.50**	**1.70**	**1.70**	**1.70**	**1.50**
551-0004	**4.90**	**4.56**	**4.23**	**3.91**	**3.60**	**3.30**	**3.01**

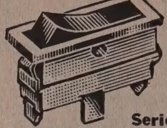
LEECRAFT Indicator Lights

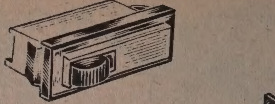

Series 32, 32R
Cylindrical Lens

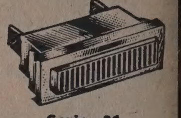

Series 36, 41


Series
32R
Square
Lens


Series 29


Series 71


Series 51


Series 31
and 31D

SERIES 32, 32R AND 35 SNAPLITE® INDICATOR LIGHTS

UL and CSA Approved. Wide variety of lens and housing colors. Available with either high brightness neon or miniature incandescent lamps. Supplied with 6″ insulated 18-ga. wire leads; available with .187″ tab terminals at same price by adding suffix **T** to model (e.g., 32-G1-2111**T**).

WITH CYLINDRICAL LENS*

Leecraft No.*	Rating		Net Ea.	Net per 100	
	Volts	mA	25-99	100-249	250-499
32†	110–125	§	**$0.92**	**$56.23**	**$50.97**
32-G1	6.3	200	**1.20**	**72.19**	**70.58**
32-G2	6	40	**1.52**	**98.02**	**94.52**
32-G3	14	80	**1.27**	**74.84**	**74.26**
32-G5	28	40	**1.20**	**71.88**	**71.28**
35†	210–250	§	**.92**	**56.23**	**50.97**

WITH CHROME RING*

Leecraft No.*‡	Rating		Net Ea.	Net per 100	
	Volts	mA	25-99	100-249	250-499
32R†	110–125	§	**$1.00**	**$60.64**	**$54.94**
32RG1	6.3	200	**1.27**	**76.73**	**73.90**
32RG2	6	40	**1.58**	**103.58**	**95.17**
32RG3	14	80	**1.31**	**79.35**	**77.57**
32RG5	28	40	**1.27**	**76.15**	**74.49**
35R†	210–250	§	**1.00**	**60.64**	**54.94**

†Neon; all others incandescent. ‡Fits .500″–.513″ hole size; for .514″–.519″ hole size, add letter **C** (e.g., 32**C**R, 32**C**RG1, etc); same price. §⅓ W.

* ADD LENS, COLOR SUFFIXES

Add suffix for lens and housing color desired. (Example: 32-**1113** = indicator with black housing and amber lens.) Add **T** designation to end of color suffix when ordering indicator with tab terminals. (Example: 32-1113**T** = indicator with black housing, amber lens and tab terminals.)

*FLAT CYLINDRICAL LENS

Housing Color	Lens Color			
	Red	Amber	Clear	White
Black	**1111**	**1113**	**1117**	**1115**
White	**2111**	**2113**	**2117**	**2115**
Red	**3111**	**3113**	**3117**	**3115**

*STOVE PIPE LENS

Black	**1211**	**1213**	**1217**	**1215**
White	**2211**	**2213**	**2217**	**2215**
Red	**3211**	**3213**	**3217**	**3215**

*FLUSH TYPE LENS

Black	**1311**	**1313**	**1317**	**1315**
White	**2311**	**2313**	**2317**	**2315**
Red	**3311**	**3313**	**3317**	**3315**

*HI-HAT TYPE LENS

Black	**1511**	**1513**	**1517**	**1515**
White	**2511**	**2513**	**2517**	**2515**
Red	**3511**	**3513**	**3517**	**3515**

*SQUARE LENS

	R2911	**R2913**	**R2917**	**R2915**

SERIES 36 AND 41 TINEON® MINIATURE INDICATORS

Supplied with either high brightness neon or miniature incandescent lamps. Fits ⁵⁄₁₆″ dia. hole; includes speed nut. Series 41-00 used with incandescent lamps or neon lamps without resistor. Series 36-00 supplied with neon lamps and built-in resistor. Available with one or two-digit legends hot stamped on lens and in multiple strip assemblies. Available with or without bezel in a variety of housing colors, with flush and hi-hat lens. Wire leads, ⁵⁄₁₆″ mtg. hole.

WITHOUT ALUMINUM BEZEL

Leecraft No.*	Rating		Net Ea.	Net per 100	
	Volts	mA	25-99	100-249	250-499
36N†	110–125	‡	**$0.86**	**$56.23**	**$50.97**
36HN†	210–250	‡	**.86**	**56.23**	**50.97**
41N†	250 max	....	**.83**	**56.23**	**47.83**
41N-G1	6.3	200	**1.09**	**70.88**	**69.27**
41N-G2	6	40	**1.39**	**96.72**	**93.22**
41N-G3	14	80	**1.13**	**74.60**	**74.13**
41N-G5	28	40	**1.09**	**71.12**	**69.98**

WITH ALUMINUM BEZEL

36EN†	110–125	‡	**$1.05**	**$68.36**	**$60.15**
36HEN†	210–250	‡	**1.05**	**68.36**	**60.15**
41EN†	250 max	....	**.98**	**63.95**	**57.54**
41EN-G1	6.3	200	**1.20**	**78.75**	**74.50**
41EN-G2	6	40	**1.52**	**104.54**	**98.49**
41EN-G3	14	80	**1.27**	**81.36**	**78.17**
41EN-G5	28	40	**1.20**	**78.40**	**75.20**

†Neon; all others incandescent. ‡⅓ W.

*ADD LENS, COLOR SUFFIXES

36-N AND HN, 41-N COLORS

Add suffix for color desired. (Example: 36HN-**3311** = indicator with red housing and red lens.)

Housing Color	Lens Color			
	Red	Amber	White	Clear
Black	**1311**	**1313**	**1315**	**1317**
White	**2311**	**2313**	**2315**	**2317**
Red	**3311**	**3313**	**3315**	**3317**
Gray	**7311**	**7313**	**7315**	**7317**

36-EN AND HEN, 41-EN COLORS

Add suffix for color desired. (Example: 36HEN-**2311** = 210–250 volts with red flush type lens.) With aluminum bezel, white housing.

Lens	Red	Amber	Clear	White
Flush	**2311**	**2313**	**2317**	**2315**
Hi-Hat	**2111**	**2113**	**2117**	**2115**

SERIES 29 REAR MOUNT INDICATOR LIGHTS

Lights snap in from rear of panel, locking in place with no additional hardware needed. Removable by compressing release mechanism on unit. Mtg. hole .510″ to .520″. Available with either wire leads or male tab terminals. Designate tabs by placing **T** after part number when ordering (e.g., 29H-2411**T**). Incandescent versions available, write for information and pricing. UL and CSA Approved. Rated ⅓ W.

Leecraft Number*	Volts	Net Ea.	Net per 100	
		25-99	100-249	250-499
29	125	**$1.00**	**$61.35**	**$54.64**
29H	250	**1.00**	**61.35**	**54.64**

*Add color suffix for housing and lens color desired. (Example: 29H-**2431T** = Indicator with white housing, red lens, 250 volts and tab terminals.)

Housing Color	Lens Color			
	Red	Amber	Clear	White
White	**2431**	**2433**	**2437**	**2435**
Black	**1431**	**1433**	**1437**	**1435**

NEW SERIES 71 ROCK-A-LITE® LIGHTED ROCKER SWITCH

Ultra-compact, lighted rocker switch minimizes arcing. Snap-in mounting panel opening, 1.281″ x .395″. With high-brightness neon or subminiature incandescents. Standard .250″ brass tab terminals, .187″ tabs available. Size, 1³⁄₃₂″ w. x 1⁵⁄₁₆″ d. x 1⁷⁄₁₆″ lgth.

Lee. No.*	Volts	Lamp Cur.	Net Each		Net/100
			1-24	25-99	
71	125	⅓ W	**$1.71**	**$1.23**	**$106.75**
71H	250	⅓ W	**1.71**	**1.23**	**106.75**
71-G1	6.3	.20 A	**1.82**	**1.34**	**122.88**
71-G2	6.0	.04 A	**2.08**	**1.59**	**147.50**
71-G3	14	.08 A	**1.82**	**1.34**	**119.65**
71-G5	28	.04 A	**1.82**	**1.34**	**115.89**

Add suffix for lens color. (Example: 71H-**2131T** = 250 volt rocker with red lens, standard .250″ tab terminals. For .187″ terminals add 3 after T (e.g., 71H-2131T3).

Red	Green	Amber	Blue	White	Clear
2131T	**2132T**	**2133T**	**2134T**	**2135T**	**2137T**

SERIES 51 SLIDELITE™ SLIDE/SWITCH PILOT LIGHTS

Available in either high-brightness neon or miniature incandescent lamp. Snap-in mounting in panel hole 1.281″ x .395″. Available with either wire leads or male quick-connect terminals. SPST switch and self-wiping contacts rated 6 amps at 125 volts. UL and CSA Approved.

Lee. No.*	Volts	Lamp Cur.	Net Each		Net/100
			1-24	25-99	
51†	110–125	⅓ W	**$1.69**	**$1.19**	**$101.59**
51-G1	6.3	.2 A	**1.81**	**1.30**	**118.52**
51-G2	6	.04 A	**2.08**	**1.56**	**144.38**
51-G3	12–14	.08 A	**1.81**	**1.30**	**115.13**
51-G5	28	.04 A	**1.81**	**1.30**	**111.18**
51H†	210–250	⅓ W	**1.69**	**1.19**	**101.59**

*Add suffix for lens color desired. (Example: 51H-**2131** = 250-volt Slidelite, with red lens.) Part numbers listed have tab terminals. For wire leads omit **T** at end of number, (e.g., 51-**2131T** becomes 51-**2131**).

Red	Green	Amber	Blue	White
2131T	**2132T‡**	**2133T**	**2134T‡**	**2135T**

†Neon; all others incandescent. ‡Colors not recommended for neon.

SERIES 31 AND 31D INDICATORS

Provides maximum message display in compact area. Includes long-life high brightness neon or incandescent lamp. Series 31 and 31H equipped with 18-gauge insulated leads. Series 31T and 31HT equipped with .250″ brass tabs; .187″ tabs also available. White nylon housing with chrome-plated bezel. Mtg. hole 1.281″ x .395″; ½″ d. behind panel. Rated ⅓ watt at 110–125 volts. Series 31D special units incorporate two lamps, 3 terminations, in standard housing; can activate two legends separately or simultaneously, write for complete information. UL, CSA Approved.

Leecraft No.*	Rating		Net Ea.	Net per 100	
	Volts	mA	25-99	100-249	250-499
31†	110–125	‡	**$0.98**	**$60.64**	**$53.57**
31-G1	6.3	200	**1.33**	**77.45**	**74.49**
31-G2	6	40	**1.58**	**103.23**	**99.04**
31-G3	14	80	**1.31**	**80.04**	**78.17**
31-G5	28	40	**1.27**	**77.10**	**75.30**
31H†	210–250	‡	**.98**	**60.64**	**53.57**
31D†	110–125	‡	**1.53**	**99.23**	**94.58**

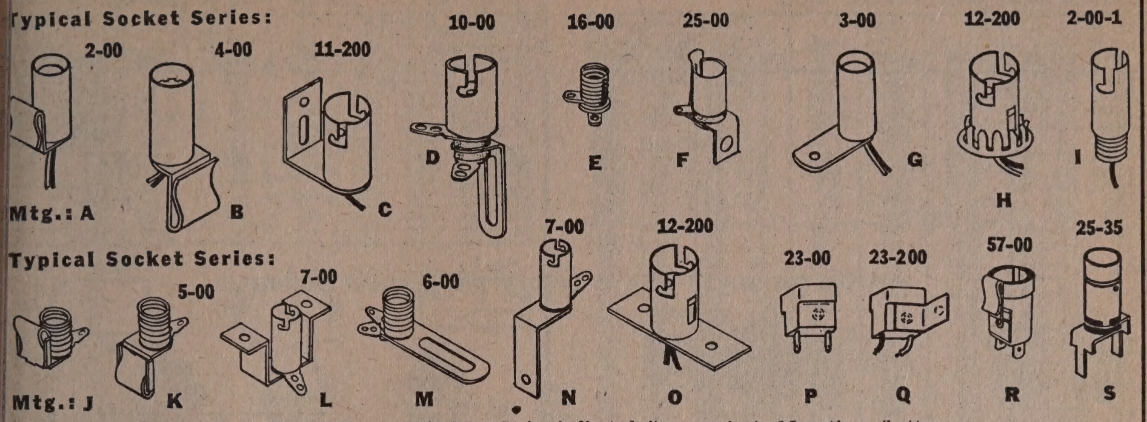
*When ordering, add suffix for lens color desired (e.g., 31H-**2111** for 210-250 V light with red lens). All above lights also available with .250″ tab terminals at same price; to order add suffix **T** (31H2111**T**).

Red	Amber	Clear	White	Blue	Green
2111	**2113**	**2117**	**2115**	**2114**	**2112**

†Neon; all others incandescent. ‡ ⅓W.

LEECRAFT Lamp Sockets

OPEN TYPE BRACKET-MOUNTED LAMP SOCKETS



Sockets illustrated are typical for Series indicated (top number). Mountings (bottom letter) are referred to in tables below. Terminals or leads as stated below.

ncludes heavy cadmium plated steel mounting brackets, .025″–.032″; less lens and lamp. Wide variety of bracket styles, available with wire leads or solder terminals. Many other types are available; write for information.

SERIES 2-00 MINIATURE BAYONET

Built-in 22 gauge wire leads, 6″ long, for ow voltage incandescent lamps such as T-3¼, G-3½ or G-4½. Includes insulating sleeve, except models with suffix **-1**, which have bracket grounded to shell.

Leecraft No.	Mtg.	Net Each		Net/ 100
		1-24	25-99	
2-01	A	$0.68	$0.40	$33.08
2-02	B	.68	.40	33.08
2-05	C	.68	.40	33.08
2-06	D	.68	.40	33.08
2-07	E	.68	.40	33.08
2-08	F	.68	.40	33.08
2-12	G	.68	.40	33.08
2-08-1	F	.68	.41	33.08
2-40-1	H	.68	.41	33.08
2-30N-1	I	.86	.63	48.51

SERIES 3-00 MINIATURE BAYONET

Housed in molded phenolic for NE-51 neon, low voltage incandescent lamps. Built-in 6″ wire leads. Rated 75 watts at 125 volts. UL and CSA Approved.

3-01	A	$0.72	$0.49	$39.69
3-05	C	.72	.49	39.69
3-06	D	.72	.49	39.69
3-08	F	.72	.49	39.69
3-12	G	.72	.49	39.69

SERIES 7-00 MINIATURE BAYONET

Tinned solder terminals, for low voltage incandescent lamps such as T-3¼, G-3½ or G-4½. Insulating sleeve available.

7-01	A	$0.61	$0.36	$26.46
7-02	B	.61	.36	26.46
7-06	D	.61	.36	26.46
7-07	E	.61	.36	26.46
7-08	F	.61	.36	26.46
7-11	L	.61	.35	26.46
7-12	G	.61	.36	26.46
7-20	N	.61	.36	26.46
7-35	S	.75	.55	42.00

SERIES 5-00 MINIATURE SCREW

Tinned solder terminals, 60°–90° apart, for low voltage incandescent lamps.

Leecraft No.	Mtg.	Net Each		Net/ 100
		1-24	25-99	
5-03	J	$0.58	$0.39	$28.35
5-04	K	.58	.39	28.35
5-05	C	.58	.39	28.35
5-06	D	.58	.39	28.35
5-07	E	.58	.39	28.35
5-08	F	.58	.39	28.35

SERIES 16-00 MIDGET SCREW

Solder terminals, for P-2½, T-1¾ lamp.

16-07	E	$0.72	$0.49	$39.69
16-08	F	.72	.49	39.69

SERIES 4-00 CANDELABRA SCREW

Heavy molded phenolic housing extends well above socket shell; for incandescent or neon lamps, such as NE-45, S6 or 10C7. Rated 75 watts at 125 volts; 18 gauge wire leads. UL and CSA Approved.

4-01	A	$0.72	$0.49	$39.69
4-02	B	.72	.49	39.69
4-05	C	.72	.49	39.69
4-06	D	.72	.49	39.69
4-08	F	.72	.49	39.69
4-12	G	.72	.49	39.69

SERIES 6-00 CANDELABRA SCREW

Tinned solder terminals, for incandescent lamps such as G6 and S6.

6-05	C	$0.61	$0.42	$29.93
6-06	D	.61	.42	29.93
6-07	E	.61	.42	29.93
6-08	F	.61	.42	29.93
6-11	L	.61	.42	29.93
6-13	M	.61	.42	29.93

SERIES 23-00 WEDGE BASE

Rapid insertion and secure positioning of wedge lamps. Molded housing. Types 23-07 and 23-24 have slotted hole, double contact terminals; others have wire leads.

23-07	P	$0.61	$0.42	$33.08
23-24	Q	.61	.42	33.08
23-207	P	.68	.49	39.69
23-224	Q	.68	.49	39.69

SERIES 10-00, 11-200 SINGLE CONTACT CANDELABRA BAYONET

Similar to double contact candelabra types. Series 10-00 has solder terminals; 11-200 has wire leads.

Leecraft No.	Mtg.	Net Each		Net/ 100
		1-24	25-99	
10-06	D	$0.68	$0.41	$33.08
10-08	F	.68	.41	33.08
11-271	C	.68	.49	39.69
11-272	D	.68	.49	39.69

SERIES 12-200 DOUBLE CONTACT CANDELABRA BAYONET

Wire leads, for incandescent and neon lamps such as NE-48, G6, S6 or 10C7. Brackets of .035″–.042″ steel (12-240 is clip mounted). Contacts mounted in phenolic disc, separately sprung by small coils. UL and CSA Approved.

12-207	E	$0.84	$0.57	$52.50
12-225	O	.84	.57	52.50
12-240	H	.84	.57	52.50
12-271	C	.84	.57	52.50
12-272	D	.84	.57	52.50

SERIES 57-00 DOUBLE CONTACT CANDELABRA BAYONET

Molded phenolic housing, with male tab terminals that fit into terminal boards with female quick-connect terminals. Brackets of .035″–.042″ steel. For incandescent and neon lamps such as NE-48, S6. Rated 75 watts. UL and CSA Approved.

57-24	Q	$0.72	$0.49	$39.69
57-45	R	.72	.49	39.69

SERIES 25-00 MIDGET GROOVED

Subminiature sockets for T-1¾ midget grooved base lamps, including lens-end lamps. Tinned solder lugs (available with wire leads). Size, ⅜″ h.; spaced on centers as close as ¼″.

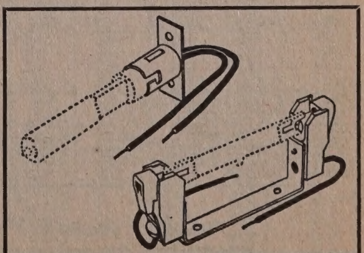
25-06	D	$0.86	$0.63	$56.23
25-08	F	.86	.63	56.23
25-12	G	.86	.63	56.23
25-35	S	.99	.77	73.50

LAMPHOLDERS FOR SINGLE-ENDED AND DOUBLE-ENDED QUARTZ IODINE LAMPS

Series 2200 Double Contact, Bayonet Base—Single-ended socket permits lamp to be positioned accurately, securely while minimizing possibility of shaking loose from vibration. Swift, simple installation. Eliminates extra bulb handling required with screw-in type sockets. Optimum heat sink for cool operation. Commonly used for stage, film and TV lighting; optical devices and instruments; and, general lighting. With 6″ Teflon® insulated leads. Meets UL specifications. Net Each, Lots 1–24 . **$1.68;** 25–99 . **$ 1.26**
Net per 100: Lots of 100–249 . . . . **$99.75;** 250–499 . . . . **95.00**

Series 26-00 Recessed Single Contact—For double ended recessed single contact (RSC) base lamps. Used primarily for sign lighting, photocopy equipment, general floodlighting. Heavy molded ceramic housing, silver-plated copper contacts; insulated bracket mounting. Rated 600 V at 2000 W. **No. 26-07:** With ¼″ male tab terminal that fits std. female quick connect terminals. **No. 26-207:** With built-in wire lead 4″ lg., stripped ½″ on ends, UL and CSA Approved to 200° C. Net Each, Lots of 1–24 . . . **$1.23;** 25–99 . . . **$ 1.10**
Net per 100: Lots of 100–249 . . . . **$98.40;** 250–499 . . . . **92.61**

®Reg. DuPont trademark.



GTE SYLVANIA INCORPORATED Miniature Lamps

INDUSTRY STANDARD LAMPS

Available in various bulb sizes and voltages. For detailed specifications information, write for catalog SD-1A.

Lamp No.	Bulb	Volts	Amps	M.S. C.P.	Fig.	Net Ea./Pkg. of 10 1-9 Pkgs.	Net Ea./Pkg. of 10 10-49 Pkgs.	Net Ea./Pkg. of 10 50 Up Pkgs.
PR2	B-3½	2.38	.50	.80	1	**$0.15**	**$0.13**	**$0.11**
PR3	B-3½	3.57	.50	1.50	1	**.15**	**.13**	**.11**
PR4	B-3½	2.33	.27	.40	1	**.16**	**.14**	**.11**
PR6	B-3½	2.47	.30	.45	1	**.15**	**.13**	**.11**
PR7	B-3½	3.7	.30	.90	1	**.21**	**.18**	**.15**
PR12	B-3½	5.95	.50	3.10	1	**.16**	**.14**	**.11**
PR13	B-3½	4.75	.50	2.20	1	**.15**	**.13**	**.11**
PR18	B-3½	7.2	.55	5.5	1	**.23**	**.20**	**.16**
6S6	S-6	120	6W	....	....	**.36**	**.21**	**.18**
7C7	C-7	115–125	7W	....	....	**.33**	**.19**	**.16**
12	G-3½	6.3	.15	.35	5	**.21**	**.18**	**.14**
13	G-3½	3.7	.30	.98	4	**.13**	**.11**	**.09**
14	G-3½	2.47	.30	.50	4	**.13**	**.11**	**.09**
27	G-4½	4.9	.30	1.4	7	**.16**	**.14**	**.11**
31	G-4½	6.15	.30	2.0	7	**.20**	**.17**	**.14**
41	T-3¼	2.5	.50	.50	26	**.21**	**.18**	**.15**
43	T-3¼	2.5	.50	.50	27	**.21**	**.18**	**.15**
44	T-3¼	6.3	.25	.90	27	**.11**	**.09**	**.07**
45	T-3¼	3.2	.35	.50	27	**.18**	**.15**	**.12**
46	T-3¼	6.3	.25	.90	27	**.10**	**.09**	**.07**
47	T-3¼	6.3	.15	.52	27	**.11**	**.09**	**.07**
48	T-3¼	2.0	.06	.04	26	**.21**	**.18**	**.15**
49	T-3¼	2.0	.06	.04	27	**.18**	**.15**	**.12**
51	G-3½	7.5	.22	1.0	6	**.11**	**.09**	**.07**
53	G-3½	14.4	.12	1.0	6	**.12**	**.10**	**.08**
53X	G-3½	14.4	.12	1.0	6	**.17**	**.14**	**.11**
55	G-4½	7.0	.41	2.0	8	**.12**	**.10**	**.08**
57	G-4½	14.0	.24	2.0	8	**.13**	**.11**	**.08**
57X	G-4½	14.0	.24	2.0	8	**.14**	**.12**	**.09**
63	G-5	7.0	.63	3.0	11	**.16**	**.14**	**.11**
67	G-6	13.5	.59	4.0	11	**.17**	**.14**	**.11**
81	G-5	6.5	1.02	6.0	11	**.19**	**.16**	**.13**
82	G-5	6.5	1.02	6.0	12	**.19**	**.16**	**.13**
87	S-8	6.8	1.91	15.0	14	**.30**	**.25**	**.20**
88	S-8	6.8	1.91	15.0	15	**.30**	**.25**	**.20**
89	G-5	13.0	.58	6.0	11	**.17**	**.14**	**.11**
93	S-8	12.8	1.04	15.0	14	**.25**	**.21**	**.17**
93IF	S-8	12.8	1.04	....	14	**.39**	**.33**	**.26**
112	TL-3	1.2	.22	....	30	**.13**	**.11**	**.09**
123	G-3½	1.25	.30	.10	4	**.14**	**.12**	**.10**
136	G-4½	1.25	.60	.20	7	**.18**	**.16**	**.13**
158	T-3¼	14.0	.24	2.0	28	**.16**	**.14**	**.11**
161	T-3¼	14.0	.19	1.0	28	**.16**	**.15**	**.11**
168	T-3¼	14.0	.35	3.0	28	**.17**	**.14**	**.11**
194	T-3¼	14.0	.27	2.0	28	**.16**	**.14**	**.11**
222	TL-3	2.25	.25	....	30	**.35**	**.30**	**.24**
301	G-5	28.0	.17	3.0	9	**.36**	**.30**	**.24**
302	G-5	28.0	.17	3.0	10	**.34**	**.29**	**.23**
303	G-6	28.0	.30	6.0	11	**.34**	**.29**	**.23**
305	S-8	28.0	.51	15.0	14	**.51**	**.43**	**.34**
307	S-8	28.0	.67	21.0	14	**.51**	**.43**	**.34**
308	S-8	28.0	.67	21.0	15	**.60**	**.50**	**.40**
309	S-11	28.0	.9	32.0	17	**.68**	**.57**	**.46**
313	T-3¼	28.0	.17	3.5	27	**.27**	**.23**	**.18**
327	T-1¾	28.0	.04	.34	23	**.54**	**.45**	**.37**
328	T-1¾	6.0	.20	.34*	23	**.43**	**.36**	**.29**
330	T-1¾	14.0	.08	.5	23	**.72**	**.61**	**.49**
331	T-1¾	1.35	.06	.006	23	**.81**	**.69**	**.57**
334	T-1¾	28.0	.04	.34	25	**.81**	**.68**	**.55**
344	T-1¾	10.0	.014	.004	23	**1.51**	**1.16**	**.80**
382	T-1¾	14.0	.08	.30	23	**1.07**	**.91**	**.75**
387	T-1¾	28.0	.04	.30	23	**.61**	**.52**	**.42**
388	T-1¾	28.0	.04	.30	25	**1.27**	**1.08**	**.89**
680	T-1	5.0	.06	.03	20	**1.66**	**1.40**	**1.13**
682	T-1	5.0	.06	.029	21	**2.00**	**1.68**	**1.36**
683	T-1	5.0	.06	.05	20	**1.66**	**1.32**	**1.13**
685	T-1	5.0	.06	.048	21	**2.00**	**1.68**	**1.36**
713	T-1	5.0	.075	.09	20	**1.66**	**1.40**	**1.13**
714	T-1	5.0	.075	.08	21	**2.00**	**1.68**	**1.36**
715	T-1	5.0	.115	.15	20	**1.66**	**1.40**	**1.13**
718	T-1	5.0	.115	.132	21	**2.00**	**1.68**	**1.36**
1003	B-6	12.8	.94	15.0	2	**.25**	**.21**	**.17**
1004	B-6	12.8	.94	15.0	3	**.25**	**.21**	**.17**
1034	S-8	12.8 14.0	1.80 .59	32.0 3.0	16	**.34**	**.29**	**.23**
1076	S-8	12.8	1.80	32.0	15	**.39**	**.33**	**.26**
1133	RP-11	6.2	3.91	32.0	13	**.45**	**.38**	**.31**
1156	S-8	12.8	2:10	32.0	14	**.35**	**.29**	**.23**
1157	S-8	12.8 14.0	2.10 .59	32.0 3.0	16	**.34**	**.29**	**.23**
1176	S-8	12.8 14.0	1.34 .59	21.0 6.0	16	**.32**	**.27**	**.22**
1183	RP-11	5.5	6.25	50.0	13	**.59**	**.50**	**.40**
1195	RP-11	12.5	3.0	50.0	13	**.90**	**.76**	**.61**
1445	G-3½	14.4	.135	.7	6	**.16**	**.14**	**.11**
1447	G-3½	18.0	.15	1.5	4	**.17**	**.15**	**.12**
1495	T-4½	28.0	.30	6.0	29	**.36**	**.30**	**.24**
1728	T-1¾	1.35	.06	.006	22	**.41**	**.35**	**.28**
1764	T-1¾	28.0	.04	.34	22	**.45**	**.38**	**.31**
1784	T-1¾	6.0	.20	.60	22	**.62**	**.53**	**.43**
1813	T-3¼	14.4	.10	.86	27	**.22**	**.19**	**.16**
1815	T-3¼	14.0	.20	1.4	27	**.19**	**.16**	**.13**
1816	T-3¼	13.0	.33	3.0	27	**.19**	**.16**	**.13**
1819	T-3¼	28.0	.04	.34	27	**.28**	**.24**	**.19**
1820	T-3¼	28.0	.10	1.6	27	**.30**	**.26**	**.21**
1829	T-3¼	28.0	.07	1.0	27	**.29**	**.25**	**.20**
1847	T-3¼	6.3	.15	.38	27	**.15**	**.13**	**.10**

*At 5 volts.

INDUSTRY STANDARD LAMPS
CONTINUED ON FOLLOWING PAGE

Fig. 1

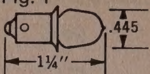


Fig. 2

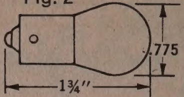


Fig. 3

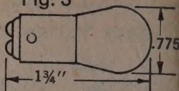


Fig. 4

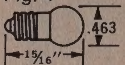


Fig. 5

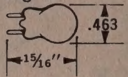


Fig. 6

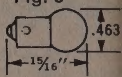


Fig. 7

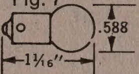


Fig. 8

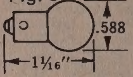


Fig. 9

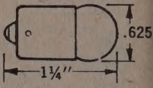


Fig. 10

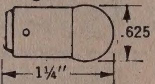


Fig. 11

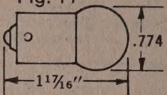


Fig. 12

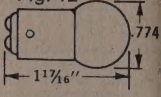


Fig. 13

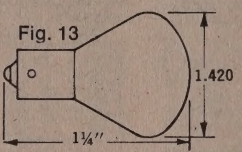


Fig. 14

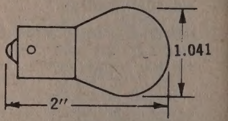


Fig. 15

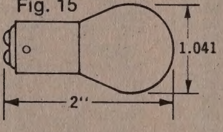


Fig. 16

D.C. Index Base

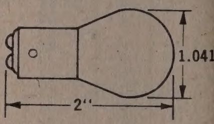


Fig. 17

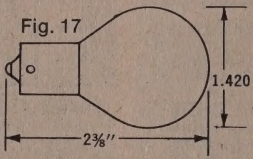


Fig. 18

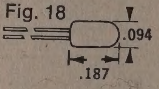


Fig. 19

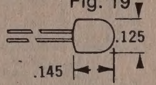


Fig. 20

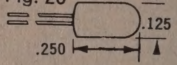


Fig. 21

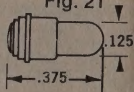


Fig. 22

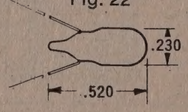


Fig. 23

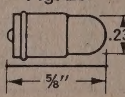


Fig. 24

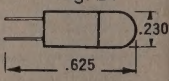


Fig. 25

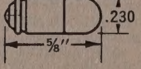


Fig. 26

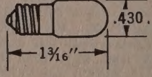


Fig. 27

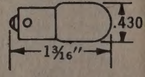


Fig. 28

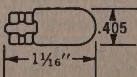


Fig. 29

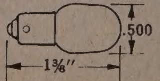
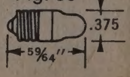


Fig. 30



MINIATURE LAMPS, SOCKETS AND LENSES

INDUSTRY STANDARD LAMPS (CONT'D)

previous page for illustrations.

mp lo.	Bulb	Volts	Amps	M.S. C.P.	Fig.	Net Ea./Pkg. of 10 1-9 Pkgs.	10-99 Pkgs.	50 Up Pkgs.
350	T-3¼	5.0	.09	.25	27	$0.29	$0.25	$0.20
364	T-3¼	28.0	.17	3.0	27	.38	.32	.26
369	T-1¾	10.0	.014	.004	22	.98	.83	.66
388	T-3¼	7.0	.50	2.0	27	.23	.19	.15
389	T-3¼	14.0	.27	2.0	27	.17	.14	.11
391	T-3¼	14.0	.24	2.0	27	.13	.11	.09
393	T-3¼	14.0	.33	2.0	27	.15	.13	.10
395	G-4½	14.0	.27	2.0	8	.18	.15	.12
162	T-1¾	14.0	.10	.5	22	.56	.48	.39
182	T-1¾	14.0	.08	.30	22	.54	.46	.38
187	T-1¾	28.0	.04	.30	22	.79	.67	.55

Lamp No.	Bulb	Volts	Amps	M.S. C.P.	Fig.	Net Ea./Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
6832	T-1†	5.0	.06	.05	18	$3.00	$2.65	$2.30
6833	T-¾	5.0	.06	.05	18	2.18	1.83	1.47
6838	T-1	28.0	.024	.15	20	1.96	1.67	1.37
6839	T-1	28.0	.024	.15	21	2.39	2.03	1.67
7152	T-1†	5.0	.115	.15	19	3.36	2.85	2.34
7327	T-1¾	28.0	.04	.34	24	.72	.61	.50
7328	T-1¾	6.0	.20	.6	24	.62	.54	.45
7344	T-1¾	10.0	.014	.004	24	1.23	1.05	.86
7382	T-1¾	14.0	.08	.30	24	.98	.83	.68
7387	T-1¾	28.0	.04	.30	24	.96	.82	.67
7931	T-1¾	1.35	.06	.006	24	.75	.65	.54

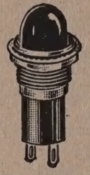
†Short.

COMPLETE PILOT LAMP ASSEMBLY FOR PANEL MOUNTING

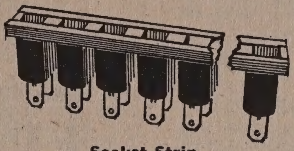
lide-base lot Lamp

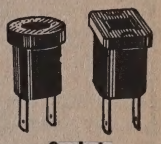
Pilot Lamp Jewelled Lens

Pilot Lamp Transparent Lens

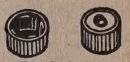

Pilot Lamp Translucent Lens

Indicator Lamp


Socket Strip


Sockets

Lenses


End Color Caps

SLIDE-BASE PILOT LAMPS (T-2 BULB)

Lamp No.	Volts	Amps	M.S.C.P	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
6PSB	6	.140	.12	$0.90	$0.54	$0.45
12PSB	12	.170	.35	.90	.54	.45
24PSB	24	.073	.50	.90	.54	.45
28PSB	28	.040	.29	.90	.54	.45
48PSB	48	.053	.70	.90	.54	.45
60PSB	60	.050	.73	.90	.54	.45
120PSB	120	.025	.36	.90	.54	.45

LENSES

Lens Color	Jeweled Number	Trans-parent Number	Trans-lucent Number	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
Red	30100-0*	30110-0	30130-0	$0.27	$0.16	$0.13
Green	30102-0*	30112-0	30132-0	.27	.16	.13
Blue	30103-0*	30113-0	....	.27	.16	.13
Amber	30106-0*	30111-0	....	.27	.16	.13
Yellow	....	30114-0	30131-0	.27	.16	.13
White	....	30116-0†	30133-0	.27	.16	.13

*Prices for jeweled lenses: 1–9 pkgs., **$0.60;** 10–49 pkgs., **$0.36;** 50 Up pkgs., **$0.30.** †Clear lens.

TE Sylvania No. 30099-0 Metal Socket—Net Each/pkg. of 10: 1–9 pkgs.... **$1.26;** 10–49 pkgs. ... **$0.76;** 50 Up pkgs.... **$0.63**

INDICATOR LAMP ASSEMBLIES FOR PANEL MOUNTING

INDICATOR LAMPS

sed by major computer manufacturers and other leaders in the ectronic field. **Life:** 5,000 to 15,000 hrs. **Construction:** Slide base nd ruggedized construction resist extreme shock and vibration. **lolded Glass Mount:** Provides greater filament stability. **Unique lat-Top:** For maximum light output. **Operating Temperature ange:** −70° F to +375° F, base insulator. **Contacts:** Nickel-lated, meet MS-33586 specs. Other features include: Dumet lead ire, nickel-iron alloy core, copper sleeve with same coefficient of xpansion as glass. Lead length (unbased lamp), ⅞″. **Size:** Based—75″ lg. x .240″–.275″ dia., unbased—.670″ lg. plus .875″ leads.

Lamp No.	Volts	Amps	M.S.C.P.	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
4ESB	4	.040	.03	$0.82	$0.49	$0.41
6ESB	6	.040	.03	.82	.49	.41
10ASB	10	.010	Glow	.82	.49	.41
10CSB	10	.017	.01	.82	.49	.41
12ESB	12	.040	.09	.82	.49	.41
16CSB	16	.017	.016	.82	.49	.41

Lamp No.	Volts	Amps	M.S.C.P.	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
16ESB	16	.040	.17	$0.82	$0.49	$0.41
24CSB	24	.017	.02	.82	.49	.41
24ESB	24	.040	.12	.82	.49	.41
28ESB	28	.040	.25	.82	.49	.41
48ESB	48	.040	.44	1.09	.66	.55

SOCKETS

Mfg. Code	Descrption	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
31250-0	Strip sockets, 12 hole, ½″	$4.87	$2.94	$2.45
31275-0	Strip sockets, 12 hole, ¾″	4.87	2.94	2.45
30150-0	Round single socket	.38	.23	.19
30151-0	Rectangular single socket	.38	.23	.19
30153-0	Round single socket	.52	.31	.26

LENSES

olycarbonate lenses for use with 30153-0 anel socket and slide-base pilot lights and ndicator lamps. A full range of colors are vailable in both round and square shapes. oth shapes fit the same housing.

Color Lens	Lens No. Round	Square	Lens Color	Lens No. Round	Square	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
Red	30160-0	30170-0	White	30163-0	30173-0	$0.24	$0.15	$0.12
Clear	30161-0	30171-0	Green	30164-0	30174-0	.24	.15	.12
Amber	30162-0	30172-0	Blue	30165-0	30175-0	.24	.15	.12

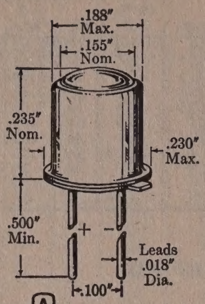
END COLOR CAPS

oth Pyrex and Profax type caps in five andard colors. **Profax** cap is desirable in pplications in which aesthetic value and lumination of the cap is important. se with lamps rated up to 24 volts. **Pyrex** ap for use with lamps above 28 volts or 2 watts.

ize: Small Profax Caps, .200″ x .310″; arge Profax Caps, .303″ x .345″; Pyrex aps, .300″ x .350″. May be used with rip sockets, round (30150-0) or rectan-ular (30151-0) single sockets.

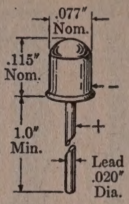
Color Cap	Profax Caps Mfg. Code Small	Large	Pyrex Caps Mfg. Code	Net Each/Pkg. of 10 1-9 Pkgs.	10-49 Pkgs.	50 Up Pkgs.
Red	37001-0	38001-0	38071-0	$0.14	$0.08	$0.07
Yellow	37002-0	38002-0	38072-0	.14	.08	.07
White	37003-0	38003-0	38073-0	.14	.08	.07
Green	37004-0	38004-0	38074-0	.14	.08	.07
Blue	37005-0	38005-0	38075-0	.14	.08	.07
Orange	....	38007-0	....	.14	.08	.07
Pearl White	....	38006-0	....	.14	.08	.07

GENERAL ELECTRIC Solid State Lamps



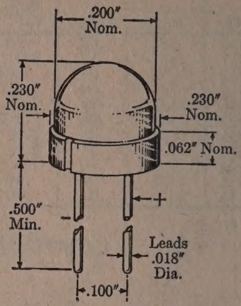
.188″ Max.
.155″ Nom.
.235″ Nom.
.230″ Max.
.500″ Min.
+
−
Leads .018″ Dia.
.100″

A



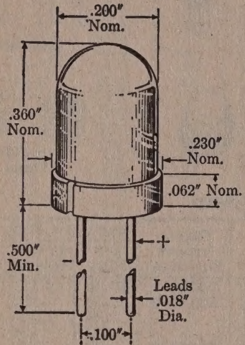
.077″ Nom.
.115″ Nom.
−
1.0″ Min.
+
Lead .020″ Dia.

B



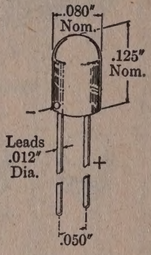
.200″ Nom.
.230″ Nom.
.230″ Nom.
.062″ Nom.
.500″ Min.
−
+
Leads .018″ Dia.
.100″

C



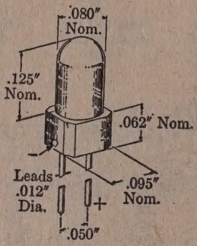
.200″ Nom.
.360″ Nom.
.230″ Nom.
.062″ Nom.
.500″ Min.
−
+
Leads .018″ Dia.
.100″

D



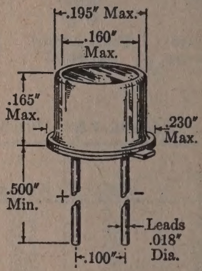
.080″ Nom.
.125″ Nom.
−
Leads .012″ Dia.
+
.050″

E



.080″ Nom.
.125″ Nom.
.062″ Nom.
−
Leads .012″ Dia.
+
.095″ Nom.
.050″

F



.195″ Max.
.160″ Max.
.165″ Max.
.230″ Max.
.500″ Min.
+
−
Leads .018″ Dia.
.100″

G

SOLID STATE LAMPS (LIGHT-EMITTING DIODES)

Withstand severe shock and vibration. Compatible with most optoelectronic detectors. Ideal for use in alarm, detection, switching and similar circuits. Visible output lamps SSL-3, -22, -22L, -12 and -212 are high efficiency gallium phosphide (GaP) and emit red light; all others are gallium arsenide (GaAs) infrared output lamps that are an excellent match for the spectral respo of silicon detectors. Visible output lamps, plastic encapsulat infrared types, hermetically sealed. All infrared lamps in Case (**Fig. A**) are also available at the same price in Case G (**Fig.** which has a flat window.

GE Type	Fig.	V_F VDC	I_F mA	V_R at 10 mA Volts	Peak Wavelength Angstroms	Output at I_F mW	Rise Time μsec	Size, Inches Dia. x Length	Net Each, Lots of 1-9	10-99*
SSL-3	A, G	1.35	100	2	9400/5400	1*	†	.230 x .235	$5.66	$4.25
SSL-4	A, G	1.25	100	2	9000	.4	.050	.230 x .235#	2.10	1.58
SSL-5A	A, G	1.35	100	2	9400	1.5	.3	.230 x .235#	2.64	1.98
SSL-5B	A, G	1.35	100	2	9400	2.3	.3	.230 x .235#	3.92	2.94
SSL-5C	A, G	1.35	100	2	9400	2.9	.3	.230 x .235#	4.38	3.29
SSL-12	F	2.0	5	3	7000	1.0‡	.5	.095§ x .187	.56	.42
SSL-12C	F	2.0	5	3	7000	1.0‡	.5	.095§ x .187	.56	.42
SSL-15	B	1.30	20	2	9400	.5	.7	.097 x .115	3.00	2.25
SSL-22	C	2.15	10	3	7000	1.5‡	.5	.230 x .230	.50	.38
SSL-22L	D	2.15	10	3	7000	1.5‡	.5	.230 x .360	.50	.38
SSL-34	A, G	1.25	100	2	9000	.9	.050	.230 x .235#	2.40	1.80
SSL-35	A, G	1.35	100	2	9400	5.5	.5	.230 x .235#	5.18	3.89
SSL-54	A, G	1.35	100	2	9000	1.0	.050	.230 x .235#	2.00	1.50
SSL-55B	A, G	1.35	100	2	9400	4.8	.3	.230 x .235#	3.32	2.49
SSL-55C	A, G	1.35	100	2	9400	6.0	.3	.230 x .235#	4.16	3.12
SSL-56	A, G	1.35	100	2	9400	2.5	.3	.230 x .235#	2.00	1.50
SSL-65	....	1.2	20	2	9300	.3	.5	.050 x .120	2.64	1.98
SSL-66B	....	1.3	50	2	9400	.4‡	.5	.060 x .128	3.00	2.25
SSL-66C	....	1.3	50	2	9400	1.0‡	.5	.060 x .128	3.90	2.93
SSL-212	E	2.0	5	3	7000	1.0‡	.5	.080 x .125	.56	.42
SSL-315	B	1.30	20	2	9400	1.0	.7	.097 x .115	3.90	2.93

*Per 80 foot-lamberts. †150/4000. ‡Millicandela. §Square. #Figure G length .165″.

★LARGER QUANTITY PRICES ON REQUEST

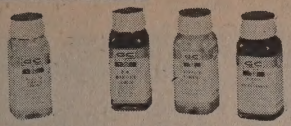
OUR STOCKS ARE COMPLETE AND UP-TO-DATE FOR PROMPT DELIVERY—

WRITE FOR INFORMATION ON NEW OR UNLISTED ITEMS.

SEE CATALOG INDEX FOR LISTINGS OF OTHER PRODUCTS.

GC ELECTRONICS

Chemicals and Paints



Most chemicals come in 2-oz. wide mouth bottles for easy use. The plastic cap has a brush attached. Write for prices and information on larger containers, also available.

CEMENTS

G-C Epox Cement—Super-strong adhesive cures at room temperature. Bonds metal, ceramic, glass, plastic, etc. with 3000 lbs./sq. in. strength. Resistant to virtually any environment. Good dielectric property. Mix from kit of 2 tubes in equal amounts; 3 oz.

No. 346—Net Each Kit..........**$1.95**

G-C Epoxy Glue—Super grip, fast set glue is specified by NASA for use in space program. Resists acids, alkali, grease, gas, water, etc. Mix from two tubes in equal parts, hardens in 5 min. under 150° F heat lamp. Kit of 2 tubes, approx. 4-oz.

No. 347—Net Each Kit..........**$2.50**

G-C GR-R-RIP—All new rapid bonding adhesive that makes short work of repair jobs. Sets in seconds; effective on most surfaces: Metal, plastic, rubber and porcelain.

No. 10-115—Net Each..........**$1.99**

G-C Quik-Stik—Epoxide adhesive permanently bonds ceramic, glass, plastic, wood or metal in 5 minutes. Ideal for almost any kind of repairing.

No. 10-114—Net Each..........**$1.20**

G-C Radio Service Cement—The best cement for repairing radios and torn speaker cones or replacing torn cones. Vibrationproof, waterproof and fast drying. Non-shrinking. Use also on plastic, metal, wood, etc.

No. 30-2—2-oz. Net Each........**$0.65**
No. 30-4—4-oz. Net Each........**.89**
No. 34-2-S—Tube. Net Each.....**.65**

G-C Bakelite® Cement—The only cement for use on phenolics. Use on knobs, cabinets, panels.

No. 32-2—2-oz. Net Each........**$0.99**

G-C Plastic Cement—For broken plastic cabinets, knobs, dials, and crystal assemblies, grille cloth, etc.

No. 32-2A—2-oz. Net Each......**$0.65**

G-C Rubber-to-Metal Cement — For cementing dial drives, rubber mountings, gaskets, hose, weather stripping, etc.

No. 35-2—2-oz. Net Each........**$0.65**

G-C Pliobond—A cold-setting, rubber-like, thermoplastic liquid that dries rapidly to a waterproof, chemically-resistant bond with permanent flexibility and very high strength. Glues all materials.

No. 43-2—2-oz. Net Each........**$0.75**

G-C Acrylic Cement—For Lucite®, plexiglass, and acrylic materials. Strong, fast drying.

No. 40-2—2-oz. Net Each........**$0.60**

G-C Ne-O-Prene Cement—For cementing neoprene rubber to neoprene or other products, such as metal, wood, paper, etc. Fast drying.

No. 52-2—2-oz. Net Each........**$0.98**

G-C "Vinylite" Cement—Thermoplastic cement. Clear plastic cement for use in metals, plastics, paper, leather, etc. Sets on cooling.

No. 58-2—2-oz. Net Each........**$0.65**

LUBRICANTS

G-C Lube-Rex—Reduces noise by preventing corrosion and prolongs life. Excellent for lubricating bearings, gears etc.

No. 1206-S—2-oz. tube. Net Ea...**$0.65**

G-C Pressurized Lubricating Oil—Ideal for hard to reach trouble spots. Will shoot oil up to six feet. Lubricates moving machinery, gears etc.

No. 10-916—6-oz. aerosol. Net....**$0.98**

G-C Reach-All Pen Oiler—Fine electronic oil for radio and TV servicing. Oil meets MIL-L-6085A specs. Tube extends and retracts; dispenses a drop or fraction. Best suited for gears, guns, fishing reels etc.

No. 984—Pen oiler. Net Each....**$1.10**

G-C Contact Burnishing Tool Kit—For servicing of relays, switches. Contains one 2-oz bottle No. 210-2 contact cleaner and burnishing tool.

No. 9339—Net Each.............**$0.97**

LUBRICANTS (CON'TD)

10-600

G-C Sili-Spray—High quality silicon lubricant. Applies light lubricant film that lasts and lasts, won't leave residue build-up. Can be used in home, office, or workshop.

No. 10-600—6-oz. aerosol. Net Each..........**$1.25**
No. 10-601—6-oz. aerosol in hang-up pkg. Net....**$1.39**

G-C Moisture Remover—Special ingredients remove moisture, deposit a thin lubricating film preventing further oxidation.

No. 10-700—16-oz. aerosol. Net Each..........**$1.95**

CLEANERS

G-C Chloro-Kleen—Non-toxic powerful solvent quickly dissolves grease, dirt, oils, tar and waxes. Contains Chlorothene®.

No. 213-G—1-gallon. Net per gal..**$9.00**

G-C Audio-Video Magnetic Tape Head Cleaner—Removes dirt and oxide build-up, won't harm tape or paint finish. May be used on running tape. Comes with 6″ spray extension.

No. 10-620—16-oz. spray can. Net.**$2.35**

G-C Electronic Dry Cleaner—A "dry" cleaner for use on contacts, relays and other electronic devices where residual, oily deposits are undesirable. Also an excellent degreaser and a general solvent for inks and gummy deposits on electrical or mechanical devices, such as typewriters, presses, etc. Non-flammable; does not contain carbon tet.

No. 8669—16-oz. Net Each......**$2.10**

G-C Super Freeze Mist—Enables serviceman to pinpoint bad capacitors, transistors, and oxidized joints by cooling components. Leaves no liquid residue; non-toxic, noninflammable. Cools three times faster than other coolers.

No. 8668—6-oz. Net Each.......**$1.44**
No. 10-702—15-oz. aerosol. Net... **2.50**

G-C Relay-Kleen Contact Cleaner—"Dry" cleaner for relays and contacts. Leaves no oily residual deposit. Also a degreaser and solvent. Noninflammable; contains no carbon tet. In spray can with extension tube for hard-to-reach places.

No. 8682-16—16-oz. Net Each....**$3.49**

G-C Super Contact Cleaner—Heavy duty cleaner formulated to provide protection on all electrical and electronic contacts in switches, tuners, and relays. Preserving and lubricating residue lasts longer than that of any other cleaner.

No. 8680—6-oz. Net Each.......**$1.79**

G-C "Red" Electronic Contact Cleaner—All-purpose lubricant cleaner for contacts. Dissolves dirt, removes corrosion and leaves a protective film.

No. 210-2—2-oz. Net Each.......**$0.65**

G-C Carbon Control Cleaner—Cleans and eliminates noise in carbon volume controls without taking apart. Special applicator. Just squirt cleaner along shaft.

No. 212-2—2-oz. Net Each.......**$0.65**

DOPES, INSULATING LIQUIDS

G-C Liquid Tape—For hard-to-get-at places for high voltage insulation. Use also for anti-rust coating, weatherproofing, etc.

No. 176-2—2-oz. bottle. Net Each **$1.05**
No. 176-16—16-oz. bottle. Net Ea. **6.40**

G-C Liquidope—Clear fast drying. Gives excellent support to coil forms. Non-inductive, all wave coil dope. Use G-C No. 28 for thinner.

No. 36-2—2-oz. Net Each........**$0.65**

G-C Q-Dope—Liquid polystyrene low-loss coil dope for RF, UHF, and VHF components. Will not change circuit values. Also a polystyrene cement.

No. 37-2—2-oz. Net Each........**$0.60**

G-C TV Tube Koat—Fast-drying conductive coating for recoating the outside of TV picture tubes that are scratched or peeling. Also used to coat the inside of TV cabinets for prevention of high voltage leaks and static discharge. Ideal for coating at points where ground clips contact tube.

No. 49-2—2-oz. bottle. Net Each..**$0.80**
No. 49-12—16-oz. spray can. Net. **2.15**

DOPES, INSULATING LIQUIDS (CONT'D)

G-C TV High Voltage Corona Dope—For preventing corona shorts in high voltage circuits in TV sets. Easy to apply, air drying. Use on any high voltage circuit.

No. 50-2—2-oz. Net Each........**$0.85**

G-C Red Glpt Insulating Varnish—Most common coating for solder connections, anti-corona and high voltage points. Heat resistant to 300° F.

No. 90-2—2-oz. Net Each........**$0.63**

CHEMICAL SPRAY BOMBS

In 6-oz. aerosol spray cans.

G-C K-27 Print-Kote—TV silicone resin for printed circuits.

No. 14-6—Clear. Net Each.......**$2.50**

G-C De-Ox-Id®—Electrical contact cleaner for silver, detent, and radar contacts.

No. 19-6—Net Each............**$2.00**

G-C Spra-Kleen—Combination cleaner and lubricant for electrical contacts.

No. 8666-16—16-oz. aerosol. Net. .**$1.95**

SOLVENTS AND THINNERS

G-C Strip-X—Strips enamel from magnet wire. Just dip wire into and wipe off insulation—cleaned, ready for soldering.

No. 26-2—2-oz. Net Each........**$0.85**

G-C Cement Thinner—Best thinner for G-C Service Cement.

No. 28-2—2-oz. Net Each........**$0.59**

G-C Lacquer Thinner—Thins all lacquer, lacquer enamels, telephone black and gray, etc.

No. 29-2—2-oz. Net Each........**$0.59**

G-C Radio Service Solvent—Best thinner for all cements—dissolves cement off old cones and speakers.

No. 31-2—2-oz. Net Each........**$0.59**
No. 31-8—8-oz. Net Each........ **1.10**

G-C Q-Dope Thinner—Solvent for Q-Dope and polystyrene materials. Clear water white solvent.

No. 41-2—2-oz. Net Each........**$0.59**

TUNER CLEANERS

G-C Tuner Bath—Cleanses and degreases tuners. Does not harm plastics and will not detune.

No. 10-901—16-oz. spray can. Net.**$2.29**

G-C Magic Vista Golden Foam Tuner Cleaner—Puts life in color and black and white TV tuners. Cleans, polishes and lubricates tuner contacts. Safe for plastics.

No. 10-800—8-oz. spray can. Net. .**$2.29**

SPRA-KOAT CHEMICALS

All Spra-Koat products are supplied in 16-oz. aerosol spray cans.

G-C Zero-Mist—Instantly located defective circuit components of an intermittent nature due to temperature change. Checks components in operation without removal.

No. 8667—Net Each............**$2.19**

G-C Corona Dope Spra-Koat—Air-drying corona dope for TV hi-voltage work.

No. 47-12—Net Each............**$2.90**

G-C Koloid Clear Acrylic—Acrylic ester resin compound for high frequency work.

No. 8665—Net Each............**$1.50**

G-C Koloid K-29 Hi-Voltage Resin—Air-drying clear resin spray for insulating high voltage points or parts.

No. 9123—Net Each............**$1.98**

HEAT SINK COMPOUNDS

G-C DC-Z9 Silicone Heat Sink Compound—Lowers overall temp. level of electronic devices, seals between transistors, diodes etc. and compound will not dry out or harden. Oxides suspended in silicone dissipate "hot spots."

No. 8109-S—1-oz. tube. Net Each.**$2.75**

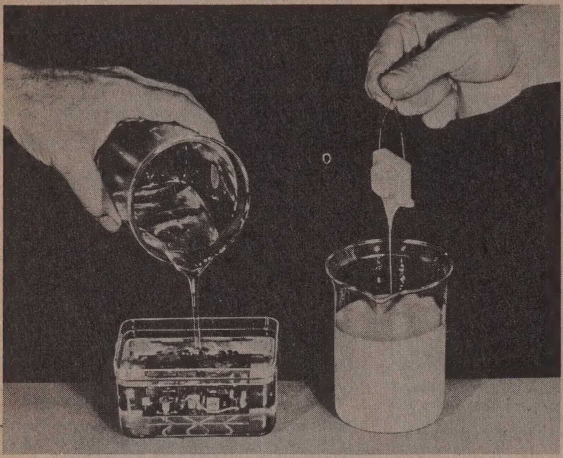
G-C Transistor Z5 Silicone Compound—Maintains efficient transfer of heat from transistor to chassis such as in auto radios. Applied to original installation and whenever transistors are replaced.

No. 8101-S—1-oz. tube. Net Each.**$2.39**

®Trademark: Bakelite of Bakelite Corp.; Lucite of DuPont; De-Ox-Id of De-Ox-Id Labs, Chlorothene NU of Dow Chemical Co.

GENERAL ELECTRIC Silicones

RTV LIQUID SILICONE RUBBER POTTING, ENCAPSULATING AND MOLD MAKING MATERIALS



RTV two-package silicone rubber compounds are liquids or pastes that cure to strong, durable, resilient silicone rubber at room temperature after the addition of curing agent. Cure may be accelerated with heat. Cure times can be varied depending on the type and quantity of curing agent used and the cure temperature. RTV products are useful over a temperature range from −75° F to +500° F, red compounds to +600° F. Resistant to temperature extremes, do not crack or dry out due to temperature extremes weathering or aging. Typical dielectric strength 500 volts per mil, ASTM-D-149. Built in release property makes them useful as flexible molds for epoxy, polyurethane or polyester parts. Can be made to bond to metals, wood, many plastics by using primer listed below. Applications include potting, encapsulating, coating and insulating of electronic components and assemblies. Impregnation and encapsulation of transformers and motors. Used as formed-in-place gaskets, adhesives for shock and vibration damping, and sealants.

GE No. RTV-11—White with DBT liquid curing agent. Most popular low viscosity easy pouring grade.

GE No. RTV-60—Red with DBT liquid curing agent. Most popular medium viscosity pourable grade for high temperature service, to 600° F.

GE RTV No.	Net per Pound					
	1-lb. Kit			12-lb. Kit		50-lb. Kits
	Single Kits	Case of 12		Lots of		
		1-9	10 Up	1-9	10 Up	
RTV-11	$7.35	$6.38	$5.95	$5.25	$5.00	$4.90
RTV-60	6.00	5.10	4.75	4.35	4.10	4.00

GE No. RTV-615—Clear with curing agent. Transparent see-through grade for potting encapsulation, conformal coating.

GE No. RTV-616—Black with curing agent. As above except opaque black.

GE No. RTV-619—Clear with curing agent, cures to a soft energy absorbing gel. Transparent for see-through potting applications. Also used for mechanical energy absorbing applications.

GE No. RTV-630—Blue with curing agent. Extra-high strength for making flexible molds to obtain most parts. Cure with heat recommended.

GE RTV No.	Net per Pound					
	1-lb. Kit			10-lb. Kit		44-lb. Kit
	Single Kits	Case of 12		Lots of		
		1-9	10 Up	1-9	10 Up	
RTV-615	$ 9.20	$ 8.00	$7.65	$5.80	$5.55	$5.40
RTV-616	8.10	7.00	6.65	4.45	4.20	4.00
RTV-619	11.50	10.00	....	7.00	....	6.00
RTV-630	8.65	7.50	7.15	5.45	5.20	5.15

RTV PRIMERS

Used to obtain adhesion of two package RTV to metals, wood and many plastics. Applied by brushing, dipping. Allow one hour to dry.

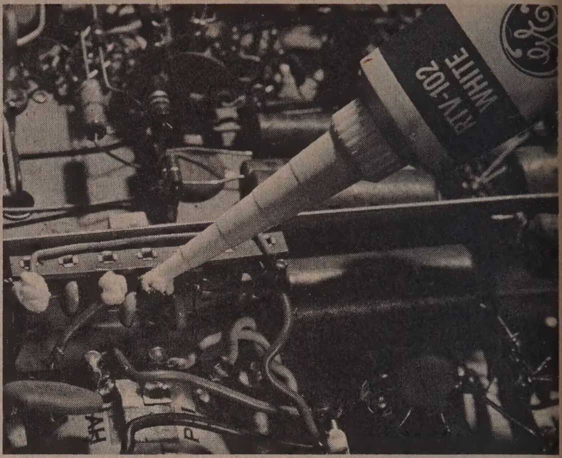
GE No.	Container	For Use With	Net/Pint
SS-4004	Pint bottle	RTV-11, RTV-60	$3.50
SS-4155	Pint bottle	RTV-615, RTV-616, RTV-619 and RTV-630	3.50

RTV-910 THINNER

Silicone fluid for diluting uncured two-package RTV to reduce viscosity, more free flowing mixture for potting intricate compact electronic assemblies. Typically used in quantities no more than 10 parts by weight to 100 parts of mixed RTV material. Thinner addition extends pot life and working time, slightly slows curing rate and cure time.

1-lb. Pint—Net per Lb. **$6.00**
8-lb. Gallon Pail—Net per Lb. **2.70**

RTV SILICONE RUBBER ADHESIVE/SEALANTS



Ready-to-use RTV adhesive/sealants are applied directly from the tube or caulking cartridge. Cures on contact with moisture in the air at room temperature. Under typical room temperature conditions, 77° F and 50% relative humidity, surface will be track-free in one hour and cured through a ⅛″ section in 24 hours. Cured silicone rubber is tough, remains flexible from −75° F to +500° F. Outstanding weather resistance, does not harden, crack or dry out. Excellent electrical properties typically 500 volts per mil dielectric strength in 1⁄16″ thickness. Bonds without primer to many materials including glass, aluminum, steel, silicone rubber and some plastics. Useful for production line and maintenance. Uses include electrical insulation for connections, formed-in-place gaskets, sealant for instrument windows, adhesive for identification nameplates, cushion delicate parts against shock and vibration, lock nuts in place, provide environmental protection to electrical and electronic components and assemblies.

SPECIFICATION GRADE

Designed to meet MIL-A-46106, F.D.A., N.S.F., and UL requirements.

PRICE SCHEDULE

Packaged in collapsible aluminum tubes. Specify 3 oz. tube size or 12 oz. tube size. Prices shown are per tube.

3 OZ. TUBE

GE No.	Color	Description	Net Each, Lots of				
			1-5	6-47	48-111	112-863	864 Up
RTV-102	White	Soft, spreadable	$1.95	$1.50	$1.20	$1.14	$1.11
RTV-103	Black	Soft, spreadable	1.95	1.50	1.20	1.14	1.11
RTV-108	Clear	Soft, spreadable	1.95	1.50	1.20	1.14	1.11
RTV-109	Alum.	Soft, spreadable	1.95	1.50	1.20	1.14	1.11
RTV-106	Red	Soft, spreadable; temp. to 600° F	2.65	2.00	1.60	1.54	1.52
RTV-112	White	Fluid, self-leveling, pourable	2.65	2.00	1.60	1.54	1.52
RTV-116	Red	Fluid, self-leveling, pourable; temp. to 600° F	2.65	2.00	1.60	1.54	1.52
RTV-118	Clear	Fluid, self-leveling, pourable	2.65	2.00	1.60	1.54	1.52

12 OZ. TUBE

GE No.	Color	Description	Net Each, Lots of			
			1-11	12-35	36-215	216 Up
RTV-102	White	Soft, spreadable	$7.50	$4.55	$4.35	$4.25
RTV-103	Black	Soft, spreadable	7.50	4.55	4.35	4.25
RTV-108	Clear	Soft, spreadable	7.50	4.55	4.35	4.25
RTV-109	Alum.	Soft, spreadable	7.50	4.55	4.35	4.25
RTV-106	Red	Soft, spreadable; temp. to 600° F	9.60	6.21	6.01	5.96
RTV-112	White	Fluid, self-leveling, pourable	9.60	6.21	6.01	5.96
RTV-116	Red	Fluid, self-leveling, pourable; temp. to 600° F	9.60	6.21	6.01	5.96
RTV-118	Clear	Fluid, self-leveling, pourable	9.60	6.21	6.01	5.96

12 OZ. FOIL CAULKING CARTRIDGES

Prices shown are per cartridge.

GE No.	Color	Net Each, Lots of		
		1-11	12-59	60 Up
RTV-102	White	$4.95	$2.50	$2.30
RTV-103	Black	4.95	2.50	2.30
RTV-108	Translucent	4.95	2.50	2.30

GENERAL ELECTRIC Silicones

GE SF-96 SILICONE DIELECTRIC FLUID

Clear, water-white silicone liquid available in several viscosities, 20 to 1000 centistokes. Non-toxic, inert, tasteless and odorless. Applications include: Dielectric and coolant for transformers, capacitors, klystrons and other high-heat components; release agent; heat transfer fluid for heating baths; lubricant for plastic surfaces such as gears, bearings, etc.; damping fluid for dash pots, meters, timers. Standard viscosities of 20, 50, 100, 200, 500 and 1000 centistokes; other viscosities can be obtained by blending. Features include: Relatively flat viscosity-temperature slope; service range −60° F to over +400° F; water repellent; excellent dielectric properties over wide range of temperatures and frequencies; low surface tension and moisture absorption.

GE No.	Viscosity*	Net per Pound 8 lbs. Gallon Can	 40 lbs. 5-Gallon Can	 440 lbs. 55-Gallon Drum
SF-96 (20)	20	$1.71	$1.63	$1.21
SF-96 (50-1000)	50–1000	1.71	1.40	.99

*Centistokes.

GE G-641 HEAT TRANSFER COMPOUND

Grease-like silicone material, filled with heat-conductive zinc oxide, provides high thermal conductivity. Designed particularly for use at the base of mounting studs of transistors, diodes, SCR, etc. Won't dry, harden or melt. Withstands long-term exposure to temperatures up to 200° C. Provides positive heat transfer to chassis or heat sink, increasing component life and efficiency. Evaporation, only 1% maximum after 24 hours at 200° C.

10-lb. Pail—Net per Lb. $2.67
100-lb. Pail—Net per Lb. 2.50

In Lots of	8 oz. Jar, Net Each
Single Jar	$3.50
Cartons of 12	2.50
Case of 48	2.00

SILICONE LUBRICANTS

GE G-322L SILICONE LUBRICATING GREASE

Leading silicone grease. Outstanding lubricity from −50° F to +300° F. Especially good on aluminum and bimetallic combinations of aluminum, steel and bronze. Excellent corrosion and water washout resistance. Easily removed; will not interfere with painting. Soft grease prevents galling and seizing of threaded fasteners and inserts.

8-lb. Can—Net per Lb., 1 to 3 cans. $6.11
8-lb. Can—Net per Lb., Pkg 4 cans. 5.96
45-lb. Pail—Net per Lb. 5.81

In Lots of	Collapsible Tube, Net Each 2 Ounce	 8 Ounce
1–11	$2.00	$6.00
12 and multiples	1.46	4.33
48 and multiples	1.29	4.07

GE G-341M SILICONE LUBRICATING GREASE

Primarily used in ball bearings operating in −100° F to +350° F under light to moderate loads, such as instruments and electronic equipment. High resistance to oxidation, heat, decomposition and shear breakdown. Low volatility in heat. Dispersible in carbon tetrachloride, toluene and other solvents. Insoluble in water. Meets MIS-13014.

10-lb. Can—Net per Lb., 1 to 3 cans. $5.55
10-lb. Can—Net per Lb., Pkg. 4 cans. 5.30
50-lb. Pail—Net per Lb. 5.15
Collapsible Tube (8 oz.)—Net Each, Lots of 1–11. . . . . . . 4.00
12 and multiples. . . . . . **$3.10**; 48 and multiples. 2.85

SILICONE SURFACE COATING COMPOUNDS

GE G-622 SILICONE COMPOUND

Soft, grease-like, non-melting silicone material has excellent electrical insulating properties; water repellent and oxidation resistant. Excellent copper corrosion protection. Retains capabilities in range of −65° F to over +400° F. Easy application with grease gun, brush, or dip. Can be sprayed if thinned with xylene, mineral spirits, chlorinated solvents. Fine lubricant and preservative for rubber and plastic items. Recommended for dielectric sealing of electrical components, connectors and terminals.

10-lb. Can—Net per Lb., 1 to 3 cans. $4.15
10-lb. Can—Net per Lb., 4 to 14 cans. 3.90
50-lb. Pail—Net per Lb. 3.75

GE G-624 SILICONE COMPOUND

Versatile silicone seal and lubricant for switches, cable, connectors and battery terminals. Range −65° F to +400° F. Ideal for preventing galvanic corrosion. Light gray-opaque color with petroleum jelly consistency. Meets MIL-S-8660B specification.

10-lb. Can—Net per Lb., 1 to 3 cans. $5.10
10-lb. Can—Net per Lb., Pkg. 4 cans. 4.85
50-lb. Pail—Net per Lb., Any Quantity. 4.70

In Lots of	Collapsible Tube, Net Each 2 Ounce	 8 Ounce
1–11	$1.90	$3.70
12 and multiples	1.23	2.98
48 and multiples	1.05	2.72

GE G-661 SILICONE COMPOUND

General purpose silicone lube and release agent for use in rubber, plastic, plywood and metal fabricating industries. Stiff petroleum jelly consistency; high tack; heat stable; non-carbonizing for −40° F to +500° F service. Ideal for easy release of epoxies, urethanes, polyesters and vinyls. Dilutes in mineral spirits, xylene or chlorinated solvents for brush or spray applications. Used for O-rings, plug and control valves, and seals.

10-lb. Can—Net per Lb., 1 to 3 cans. $5.10
10-lb. Can—Net per Lb., Pkg. 4 cans. 4.85
50-lb. Pail—Net per Lb., Any Quantity. 4.70

In Lots of	8 oz. Jar, Net Each
Single Jar	$3.50
Cartons of 12	2.75
Case of 48	2.65

GE DF-88 SILICONE VARNISH

A 10% solution of a silicone resin in xylene and petroleum spirits. Applied as top coat on printed circuits, components, motors, coils or transformers exposed to high humidity. Air-dries to water-repellent, heat-stable film. Improves surface resistivity by preventing formation of continuous conducting film under dusty or damp conditions; reduces moisture absorption and surface contamination; enhances appearance.

In Lots of	Net per Gallon 5 Gallon Pail	 55 Gallon Drum
1 Up	$7.35	$4.37

GE SR-155 SILICONE VARNISH

General purpose, Class H dipping, impregnating varnish. A 50% solution of silicone resin in xylene. Long service life even at 220° C; excellent resistance to low temperature crazing, −55° C; good drainage with little run-off during cure; combines high bond strength with moisture resistance and excellent electrical properties. Meets MIL-I-24092 used on motors and transformers. **Color:** Amber. **Viscosity:** 100–200 centipoises at 25° C. **Drying Time:** 3 hours maximum at 200° C. **Flash Point:** 95° F. **Tag:** Open cup.

In Lots of	Net per Gallon 5 Gallon	 55 Gallon
1 Up	$14.08	$11.13

A COMPLETE LINE OF ELECTRONIC MATERIALS TO MEET EVERY REQUIREMENT

FOR POTTING, ENCAPSULATING, MOLD MAKING, SURFACE COATING AND LUBRICATION.

SEE CATALOG INDEX FOR OTHER GENERAL ELECTRIC PRODUCTS.

WRITE FOR FULL INFORMATION ON NEW OR UNLISTED ITEMS.

KESTER Solder and Flux

KESTER "44" RESIN CORE SOLDER

Revolutionary solder advancement uses a fast-acting, instant-wetting, non-corrosive, non-conductive flux for faster soldering and long-lasting, stronger bond. Available in any size ranging from .005" to .250". Also available for Fed. Spec. QQ-S-571d. Two standard put-ups: 1-lb. and 5-lb. spools; 20 lb. spools available on special order.

Alloy Tin/Lead	Dia. In. (Ga)	Spool of	Net per Spool, Lots of 1-10 Lbs.	Net per Spool, Lots of 11-24 Lbs.	Net per Spool, Lots of 25-49 Lbs.
40/60	.062 (16)	1 lb.	$ 2.79	$ 2.50	$ 2.21
		5 lbs.	13.70	12.25	10.80
	.093 (13)	1 lb.	2.68	2.40	2.12
		5 lbs.	13.20	11.80	10.45
50/50	.062 (16)	1 lb.	3.31	2.96	2.61
		5 lbs.	16.25	14.55	12.85
	.093 (13)	1 lb.	3.17	2.84	2.51
		5 lbs.	15.60	13.95	12.30
60/40	.015 (27)	1 lb.	8.34	7.46	6.59
	.020 (25)	1 lb.	7.20	6.44	5.69
	.025 (23)	1 lb.	5.32	4.76	4.20
	.031 (21)	1 lb.	4.54	4.06	3.59
		5 lbs.	20.80	18.60	16.45
	.040 (19)	1 lb.	4.37	3.91	3.45
		5 lbs.	19.95	17.85	15.75
	.050 (18)	1 lb.	4.16	3.72	3.29
		5 lbs.	19.40	17.35	15.30
	.062 (16)	1 lb.	3.72	3.33	2.94
		5 lbs.	18.35	16.40	14.50
	.093 (13)	1 lb.	3.61	3.23	2.85
		5 lbs.	17.75	15.90	14.05
63/37	.015 (27)	1 lb.	8.55	7.65	6.75
	.020 (25)	1 lb.	7.41	6.63	5.85
	.025 (23)	1 lb.	5.74	5.13	4.53
	.031 (21)	1 lb.	4.71	4.22	3.72
		5 lbs.	21.65	19.40	17.10
	.040 (19)	1 lb.	4.52	4.05	3.57
	.050 (18)	1 lb.	4.31	3.86	3.41
	.062 (16)	1 lb.	3.90	3.49	3.08

KESTER SOLID WIRE SOLDER

For use with external flux, this solder is equal in quality and purity to Kester "44" solder. Always uniform in diameter and alloy. Standard put-ups are 1-lb. and 5-lb. spools; 20-lb. spools and 50-lb. reels also available.

Alloy Tin/Lead	Dia., In. (Ga)	Spool of	Net per Spool, Lots of 1-10 Lbs.	Net per Spool, Lots of 11-24 Lbs.	Net per Spool, Lots of 25-49 Lbs.
40/60	.125 (11)	1 lb.	$ 2.57	$ 2.30	$ 2.03
		5 lbs.	12.45	11.15	9.85
	.062 (16)	1 lb.	2.77	2.48	2.19
		5 lbs.	13.60	12.15	10.75
50/50	.125 (11)	1 lb.	2.96	2.65	2.34
		5 lbs.	14.45	12.90	11.40
	.062 (16)	1 lb.	3.29	2.94	2.60
		5 lbs.	16.15	14.45	12.75
60/40	.062 (16)	1 lb.	3.74	3.35	2.96
		5 lbs.	18.15	16.25	14.35
	.031 (21)	1 lb.	4.50	4.03	3.56
		5 lbs.	20.50	18.35	16.20

KESTER TV-RADIO SOLDER

Improved, practical-wire-size (.062") solder is ideal for servicemen's kit. Compact, easy-to-carry package. Resin core is ideal for everything electrical or electronic.

Kester TV-Radio Solder—Carton of 10 boxes (total weight, 1 lb.). Net Each **$2.73**

BAR SOLDER

Available in all the tin-lead alloys. Uniform distribution of tin/lead alloys provides for more efficient and easy application.

Alloy Tin/Lead	Bar Weight	Net Each, Lots of 1-10 Lbs.	Net Each, Lots of 11-24 Lbs.	Net Each, Lots of 25-49 Lbs.
30/70	1 lb.	$1.94	$1.73	$1.53
40/60	1 lb.	2.34	2.09	1.85
50/50	1 lb.	2.74	2.45	2.16
60/40	1 lb.	3.21	2.87	2.54
63/37	1 lb.	3.44	3.08	2.72

KESTER PRINTED CIRCUIT BOARD SOLDER

Ideal for printed circuit board repair. 60% tin and 40% lead alloy with KESTER famous "44" Resin flux provide perfect connection all the time.

Kester Printed Circuit Board Solder—Carton of 10 boxes (total weight, 1 lb.). Net Each **$3.60**

Kester 40/60 Acid-Core Solder—1 lb. Spool. Net Each . . . **$1.89**
5 lb. Spool, Net per pound **1.85**
20 lb. Spool, Net per pound **1.83**

Kester 50/50 Acid-Core Solder—1 lb. Spool. Net Each . . . **2.23**
5 lb. Spool, Net per pound **2.19**

Kester "Metal Mender" Acid Core Solder—40/60 solder in handy display carton of ten 2-oz. boxes. Net Each Carton **$2.73**

Kester Soldering Paste—Display carton of ten 2-oz. cans.
Net per Carton **$2.76**
Net per 1-lb. can **1.43**
Net per 5-lb. can **7.60**

KESTER SOLDERING FLUXES

For use on all metals except aluminum. Remain stable even under extreme conditions. The latest development in practical flux, these efficient formulations meet all manufacturing techniques including specialized assembly, automation, modular techniques, etc. Choice of pint, quart or gallon put-ups; 5-gallon containers also available on request.

Kester Formula No. 1544—Highly activated resin flux, non-corrosive and electrically non-conductive. Probably the most active non-corrosive flux in cored solder.
Net per Pint . . . . **$ 2.38**
Net per Quart **3.99**
Net per Gallon **11.31**

Kester Formula No. 1587—Resin-type foaming flux for PC soldering. Non-corrosive, electrically non-conductive and perfectly safe resin formula to military requirements. Net per Pint . . . **$ 2.38**
Net per Quart . . . . . . **$3.99** Net per Gallon **11.31**

Kester "Acid Type" Flux—4 oz. plastic bottles have new squeeze tips. Net per pint . . . . . . **$2.38**; Net per Quart **$3.61**
Net per Case (twelve 4 fl. oz. bottles) **7.51**

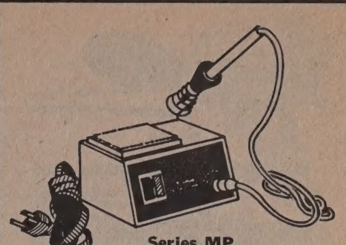
Kester Stainless Steel Flux—4 oz. plastic bottles with squeeze tips.
Net per Pint . . . . **$2.66**; Net per Quart **$3.99**
Net per Case (twelve 4 fl. oz. bottles) **7.51**

Kester Formula No. 5235 Remover—Rosin residue remover dissolves and removes all types rosin or resin flux residues from soldered connections at room or normal temps. Net per Pint **$ 2.38**
Net per Quart . . . . . . **$3.99** Net per Gallon **11.31**

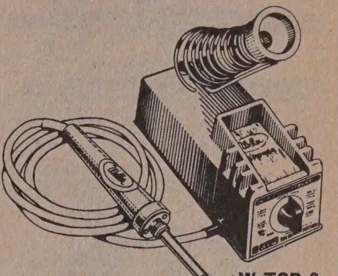
Kester Copper-Nu #5520—Pre-cleaner for cleaning surface prior to soldering. Net per Pint . . . **$2.66**; Net per Quart . . . **$ 3.99**
Net per Case (twelve 4 fl. oz. bottles) **11.17**

Kester Solder-Nu #5560—Pre-cleaner for solder-plated, tin-plated or very tarnished copper surfaces. Net/Pint . . . . **$ 2.66**
Net/Quart . **$3.99**; Net/Case (twelve 4 fl. oz. bottles) . **11.17**

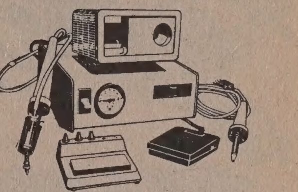
Weller® Professional Tools



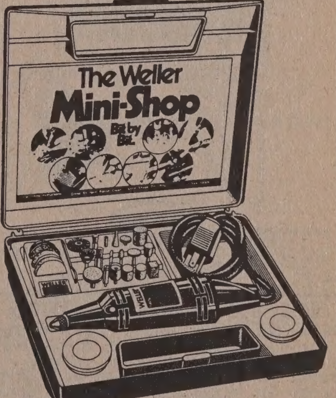
Series MP



W-TCP-2



DS100



600K

SERIES MP MINIATURE SOLDERING STATION

Designed for PC electronics, and for fast and economical production soldering. Closed loop temperature control system with low voltage output. Non-burnable cord; replaceable tips in wide range of configuration. New plug-in pencil for maximum flexibility and reduced maintenance cost.

Weller No.	Description	Qty./ Box	Net Each, Lots of 1-11	12-23	24 Up
MP116	650° F miniature soldering station	1	$39.85	$35.85	$31.90
MP117	750° F miniature soldering station	1	39.85	35.85	31.90
MP101	MP power unit	1	24.90	22.45	19.95
MP106	650° F soldering pencil	1	14.95	13.40	11.95
MP107	750° F soldering pencil	1	14.95	13.40	11.95
MP202	Sponge	10	.40	.40	.40
MP203	Funnel	5	.40	.40	.40
MP204	Iron holder assembly	1	.90	.90	.90

REPLACEMENT TIPS FOR SERIES MP AND SERIES WMCP

Weller No.	Reach, Inches	Description	Net Each, Lots of 1-24	25-99	100 Up
MP1MP	½″	.020″ micro pt.	$1.05	$0.95	$0.85
MP2C	⅜″	1/32″ bent chisel	1.05	.95	.85
MP2S	½″	½″ spade	1.05	.95	.85
MP3C	⅜″	3/64″ bent chisel	1.05	.95	.85
MP3S	⅓″	3/64″ spade	1.05	.95	.85
MP4C	....	1/16″ narrow screwdriver	1.05	.95	.85
MP5C	⅜″	5/64″ chisel	1.05	.95	.85
MP8C	⅜″	⅛″ chisel	1.05	.95	.85

MODEL W-TCP-2 CONTINUOUSLY VARIABLE TEMPERATURE PENCIL

Small and lightweight, ideal for low temperature, miniature soldering applications. Continuously variable temperature, controlled at tip, from 200° F to 450° F, with SCR and thermistor control circuit. Simply dial temperature needed for a specific job. Rated 30 watts; operates from 24 V isolated winding at power unit for safety. Complete with 1/16″ premium plated screwdriver tip and power unit. Operates from 120 VAC, 50–400 Hz (230/250 V available on request, at same price).

Weller No. W-TCP-2—
Net Each, Lots 1–11......**$72.30;** 12–23......**$65.35;** 24 Up......**$58.05**

Weller No. STA (1/32″ conical flat) **or STB** (1/16″ screwdriver) **Replacement Tip**—For W-TCP-2. Net Each, Lots 1–24.....**$1.05;** 25–99.....**$0.95;** 100 Up.....**$0.85**

DE-SOLDER AND SOLDER STATION

Power vacuum desoldering station designed for PC board repair. Closed loop temperature control protects sensitive components. See-thru solder is easy to clean or replace. Non-burnable cord for safety and long life. High impact resistant tool handles and stainless steel barrels. Operates from factory air and line voltage. Complete with foot switch, indicating light/on-off switch, twin safety tool holder, vacuum adjustment and gauge, tip and sponge holder, five assorted tips and instruction manual. Beige with blue tool handles.

Weller No.	Description	Net Each
DS100	De-solder and solder station; 1 per box	$225.00
DS101	Soldering iron; 1 per box	14.65
DS102	Desoldering iron; 1 per box	19.90
DS103	Collector tube; 5 per box	.95
DS104	Clean out tool; 5 per box	1.50
DS105	Sponge holder with sponge and tool; 1 per box	6.00
DS106	Sponge; 10 per box	.40
DS107	Tool holder; 1 per box	10.50
DS108	Retainer springs; 5 per box	1.05
DS109	Power unit with foot switch; 1 per box	185.00
DS201	Fuses; 5 per card	.40
DS202	Installation kit; 1 per box	17.25
SW60	Switch assembly; 1 per box	3.40
HE60	Heating element; 1 per box	3.10
BA60	Barrel nut assembly; 1 per box	1.45
DS209	Desoldering head 700° with spring; 1 per box	12.00

REPLACEMENT TIPLETS FOR SOLDER AND DE-SOLDER STATION

Weller No.	Size*, Inches	Net Each	Weller No.	Size*, Inches	Net Each
DS110	.060 x .025 x .50	$2.00	**DS114**	.125 x .071 x .50	$2.00
DS111	.090 x .025 x .50	2.00	**DS115**	.060 x .025 x .75	2.00
DS112	.076 x .036 x .50	2.00	**DS116**	.098 x .045 x .75	2.00
DS113	.094 x .045 x .50	2.00			

*O.D. x I.D. x Length; all tips packed 5 per card.

MINI-SHOP KIT

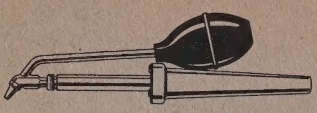
Mini-Shop kit (37 pieces) contains: Mini-Shop power unit, storage case, owner's guide, accessory caddy, 8 grinding/sharpening bits, 3 polishing wheels, 4 cleaning bits, 8 abrasive discs, 3 abrasive bands, expanding drum, drill bit, mandrel, chuck wrench, dressing stone, plastic polish, and jeweler's rouge. Packed 3 per carton. Weight per carton, 8½ lbs.

Weller Mini-Shop Kit Model 600K—Net Each, Lots of 1–2..................**$30.80**
Net Each, Lots of 3–5..................**$27.75;** 6 Up..................**24.65**

MINI-SHOP ACCESSORIES

Weller No.	Description	Net Each
GM67	1½″ mandrel	$0.70
GB149	Brush (bristle)	.70
GW116	Stone-mounted medium drum	.70
GP67	Mounted pin	.70
GP64	Stone-mounted round nose	.70
GW112	Stone-mounted large drum	.70
GB151	Brush (bristle disc)	.70
GP65	Stone-mounted round cone	.70
GB148	Bristle brush ¼″ dia.	.70
GB150	Brush (wire)	.70
GW113	Stone-mounted (disc)	.70
GW109	Felt wheel; 3 per pack	.70
GW107	Rubber abrasive wheel; 2 per pack	.70
GW108	Cotton wheel; 2 per pack	.70
GS248	Dressing stone	.70
GD13	Expanding drum	.70
GB152	Abrasive band—50 grit; 2/pack	.70
GB153	Abrasive band—80 grit; 2/pack	$0.70
GB154	Abrasive band—120 grit; 2/pack	.70
GD12	⅛″ high speed drill	.70
GW115	Stone-mounted cylinder	.70
GP66	Stone-mounted round faced disc	.70
GW117	Wrench	.70
GD9	Standing disc 80 grit; 12/pack	.70
GD10	Standing disc 120 grit; 12/pack	.70
GW106	Cutoff wheel (abrasive) light metal; 3 per pack	.70
GC239	Saw (⅜″ dia. x 1/16″ thick)	1.39
GC238	Cutter, Cylinder ¼″ dia. x ½″ lg.	1.39
GC247	Cutter, Cone ¼″ dia. x ½″ lg.	1.39
GC245	Cutter, Ball ¼″ dia.	1.39
G29	Safety goggles	2.00
GC240	⅛″ collet	.70
GC241	3/32″ collet	.70

Weller® Professional Tools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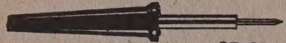
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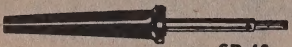
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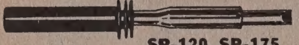
SP-80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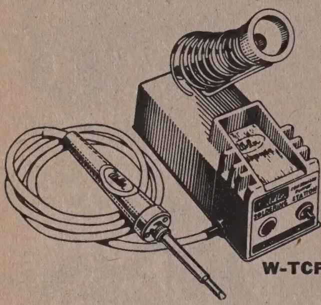
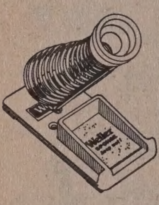
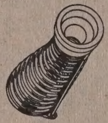
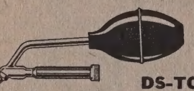

W-TCP


Bench Stand


Side Rail Stand


DS-TCP

SOLDERING TOOL STANDS

Weller No. PH60—Bench type with base and sponge for W60, WP25, WP40, WPS and irons with barrel dia. up to 15/32".
Weller No. PH100—Bench type with sponge for W100 and irons with barrel diameter up to 19/32".
Weller No. SFA1—Side rail type for TCP1 and iron with barrel dia. up to 3/8".
Weller No. SFA60—Side rail type for W60 and irons with barrel dia. up to 15/32".
Weller No. SFA100—Side rail type for W100 and iron with barrel dia. up to 19/32".

PRICE TABLE

Weller No.	Net Each, Lots of 1-11	12-47	48 Up
PH60	$5·30	$4·80	$4·25
PH100	6·40	5·75	5·15
SFA1	1·60	1·45	1·25
SFA60	1·60	1·45	1·25
SFA100	2·35	2·10	1·85

INDUSTRIAL DESOLDERING ADAPTERS

Weller No. DS-TCP—For use with WTCP and WTCP-L. Net Ea., Lots 1–11 .**$8·70**
12–23. . . . . **$7·90;** 24 Up. . . . . . **7·00**
Weller No. DS60—For use with W60.
Net Each, Lots of 1–11. . . . .**$8·20**
12–23. . . . . .**$7·45;** 24 Up. . . . . . **6·60**

"MARKSMAN" SOLDERING IRONS

High efficiency irons with stainless steel barrels; heat and impact resistant handles. For 120 V. Complete with replaceable copper plated tip and instruction booklet packed in a vinyl pouch. UL Recognized.

Weller No.	Watts	Type	Tip	Overall Length	Wt., Oz.	Net Each, Lots of 1-11	12-47	48 Up
SP-23	25	Pencil	MT-1 cone	8¼"	1¾	$ 3.10	$2.80	$2.50
SP-40	40	Pencil	MT-10, ¼" dia.	8¼"	2	4.10	3.70	3.25
SP-80	80	Med. duty	MT-20, ⅜" dia.	9⅜"	4	5.00	4.50	4.00
SP-120	120	Med. duty	MT-30, ½" dia.	11⅜"	10	9.20	8.25	7.35
SP-175	175	Hvy. duty	MT-40, ⅝" dia.	12½"	16	10.85	9.75	8.70
SP-23K	With SP-23 iron, 3 tips, 5' rosin core solder and aid tool with instructions					4.60	4.15	3.70
SP23HK	Hot knife and soldering iron; includes blade, chuck, interchangeable soldering tip					4.60	4.15	3.70

PLATED REPLACEMENT TIPS FOR "MARKSMAN" IRONS

Pkg. of 2 tips, except MT-20 to MT-40, pkg. of 1.

Weller No.	For Marksman Iron	Tip Type	Net Pkg. of 2, Lots of 1-11	12-47	48 Up
MT-1	SP-23	Cone shape	$0·70	$0·63	$0·56
MT-2	SP-23	Screwdriver	·70	·63	·56
MT-3	SP-23	Chisel	·70	·63	·56
MT-4	SP-23	Spade	·70	·63	·56
MT-10	SP-40	¼" chisel	1·08	·98	·87
MT-20	SP-80	⅜" chisel*	1·08	·98	·87
MT-30	SP-120	½" chisel*	1·75	1·58	1·40
MT-40	SP-175	⅝" chisel*	2·67	2·40	2·15
HK11	SP23HK	Blade, chuck*	1·45	1·45	1·45

*Price indicated is for single tip.

CONTROLLED OUTPUT SOLDERING PENCILS AND TIPS

MODEL W-TCP LOW VOLTAGE PENCIL

Precision-built, 60-watt soldering pencil. Features: Temperature controlling at tip, choice of interchangeable tip temperatures; low voltage (24 V) operation from power unit for component protection. Extremely small and lightweight, with cool handle of impact-resistant plastic. Soldering iron stand attached to power unit. With 3/16", 700° F premium plated screwdriver tip. For 120 VAC, 50–400 Hz (230/250 V available on request). **Replacement tips available:** 1/32", 3/64", 1/16", 5/64", 3/32", ⅛", 3/16", and 15/64" sizes in screwdriver, long screwdriver, spade, conical, conical flat shapes for temperatures of 600°, 700° and 800° F. See complete listing below. New blue color.

Weller No. W-TCP—
Net Each, Lots 1–11. . . . . . .**$26·15;** 12–23. . . . . . .**$23·65;** 24 Up. . . . . . .**$21·00**
Weller No. W-TCP-L—Same as above, but with on-off switch and pilot light on power unit. Net Each, Lots 1–11. . . . . .**$30·15;** 12–23. . . . . .**$27·25;** 24 Up. . . . . .**$24·20**

REPLACEMENT TIPS FOR W-TCP AND W-TCP-L

Tip Description	Weller Number 600° F	700° F	800° F	Net Each, Lots of 1-24	25-99	100 Up
1/16" screwdriver	PTA6	PTA7	PTA8	$1.05	$0.95	$0.85
1/16" spade	PTAA6	PTAA7	PTAA8	1.05	.95	.85
3/32" screwdriver	PTB6	PTB7	PTB8	1.05	.95	.85
3/32" spade	PTBB6	PTBB7	PTBB8	1.05	.95	.85
⅛" screwdriver	PTC6	PTC7	PTC8	1.05	.95	.85
⅛" spade	PTCC6	PTCC7	PTCC8	1.05	.95	.85
3/16" screwdriver	PTD6	PTD7	PTD8	1.05	.95	.85
3/16" spade	PTDD6	PTDD7	PTDD8	1.05	.95	.85
1/32" screwdriver	PTH6	PTH7	PTH8	1.05	.95	.85
1/32" conical	PTP6	PTP7	PTP8	1.05	.95	.85
1/32" conical flat	PTF6	PTF7	PTF8	1.05	.95	.85
15/64" screwdriver	PTE6	PTE7	PTE8	1.05	.95	.85
3/64" long screwdriver	PTK6	PTK7	PTK8	1.05	.95	.85
5/64" long screwdriver	PTL6	PTL7	PTL8	1.05	.95	.85
⅛" long screwdriver	PTM6	PTM7	PTM8	1.05	.95	.85

CONTROLLED OUTPUT INDUSTRIAL SOLDERING IRONS

Sensing device at tip assures reliable soldering; won't overheat; maintains selected maximum temperature. Two-wire cord. With 700° F tips. "Temperature Sensing" tips are available in standard industrial configurations at 600°, 700° and 800° F; see listings below. Models W60 and W100 have new blue color.

Weller No.	Watts	Type	Tip	Overall Length	Wt., Oz.	Net Each, Lots of 1-11	12-47	48 Up
W60	60	Pencil	¼" screwdriver	7¼"	2½	$12.60	$11.40	$10.15
W100	100	Pencil	⅜" screwdriver	8¼"	3½	15.80	14.25	12.65
W200	200	Standard	½" chisel	9½"	10	21.90	19.80	17.60

PREMIUM PLATED REPLACEMENT TIPS FOR W60 SOLDERING IRON

For Model W60 blue series tools only.

Point Size	Description	Reach	Weller Number 600° F	700° F	800° F	Net Each, Lots of 1-24	25-99	100 Up
1/16"	Screwdriver	1 5/32"	CT5A6	CT5A7	CT5A8	$1.05	$0.95	$0.85
3/32"	Screwdriver	1 5/32"	CT5B6	CT5B7	CT5B8	1.05	.95	.85
⅛"	Screwdriver	1 5/32"	CT5C6	CT5C7	CT5C8	1.05	.95	.85
3/16"	Screwdriver	1 5/32"	CT5D6	CT5D7	CT5D8	1.05	.95	.85
¼"	Screwdriver	1 5/32"	CT5E6	CT5E7	CT5E8	1.05	.95	.85

PREMIUM PLATED REPLACEMENT TIPS FOR W100 SOLDERING IRON

For Model W100 blue series tools only.

Point Size	Description	Reach	Weller Number 600° F	700° F	800° F	Net Each, Lots of 1-14	15-49	50 Up
⅛"	Screwdriver	1 15/32"	CT6C6	CT6C7	CT6C8	$1.65	$1.50	$1.35
3/16"	Screwdriver	1 15/32"	CT6D6	CT6D7	CT6D8	1.65	1.50	1.35
¼"	Screwdriver	1 15/32"	CT6E6	CT6E7	CT6E8	1.65	1.50	1.35
⅜"	Screwdriver	1 15/32"	CT6F6	CT6F7	CT6F8	1.65	1.50	1.35

PREMIUM PLATED REPLACEMENT TIPS FOR W200 SOLDERING IRON

¼"	Screwdriver	1⅞"	CT2E6	CT2E7	CT2E8	$2.50	$2.25	$2.00
⅜"	Screwdriver	1⅞"	CT2F6	CT2F7	CT2F8	2.50	2.25	2.00
7/16"	Chisel	1 9/16"	CT2G6	CT2G7	CT2G8	2.50	2.25	2.00
½"	Chisel	1 9/16"	CT2H6	CT2H7	CT2H8	2.50	2.25	2.00

Weller® Professional Tools

WELLER SOLDERING GUNS, KITS

MODEL 8200 DUAL HEAT SOLDERING GUN

wo trigger positions provide instant switching to high (140 watts) or low (100 watts) eat. Tip heats instantly and spotlight comes on when trigger is pulled. UL Recognized.

MODEL 8200PK DUAL HEAT SOLDERING GUN KIT

ncludes Weller dual heat 100/140 watt gun, rugged plastic utility case, three soldering ps, tip-changing wrench, flux brush, soldering aid and solder.

SERIES "D" DUAL-HEAT PROFESSIONAL GUNS

xclusive dual-heat feature saves time, adds convenience, and greatly increases tip life. riggermatic control switches instantly to high or low heat as the job requires. Tip life increased by using high heat only when necessary. No wasted time or current. Twin potlights eliminate shadows on work. Carefully engineered design provides long reach; andles difficult jobs with ease; slips between wiring without damage to insulation. xclusive tip grip assures full constant heat; wiping action of tip-fastened nut eliminates ontact resistance and oxidation. **Model D440:** Light duty gun rated 145/210 watts. **odel D550:** Heavy-duty gun rated 240/325 watts. UL Recognized.

MODEL D550PK HEAVY-DUTY DUAL HEAT SOLDERING GUN KIT

eatures 240/325 watt dual heat gun, break-proof plastic carrying case, soldering, moothing and cutting tips, tip-changing wrench and solder.

SOLDERING GUN AND KITS—DEALER NET PRICES

Weller No.	Rating, Watts	Net Each, Lots of			Weller No.	Rating, Watts	Net Each, Lots of		
		1-2	3-11	12 Up			1-2	3-11	12 Up
200	100/140	$ 8.30	$ 7.45	$6.65	D550	240/325	$12.30	$11.05	$ 9.85
200PK	100/140	9.95	8.95	7.95	D550PK	240/325	14.95	13.45	11.95
440	145/210	11.45	10.30	9.15					

SOLDERING GUN REPLACEMENT TIPS

Weller No.	For Gun or Iron No.	Tip Type	Net Pkg. 2	Weller No.	For Gun or Iron No.	Tip Type	Net Each
125*	8100B, 8200	Solder	$0.65	7135N†	8100, 8100B, 8200, D-440	Solder	$0.65
125N‡	8100B, 8200	Solder	.65§				
7250	8250A, D-550	Solder	.65	6120†	8100B, 8200, D-440	Smoothing	.65
7250N†	8250A, D-550	Solder	.65§	6140†	8250A, D-550	Smoothing	.65
7135	8100, D-440, 8100B, 8200	Solder	.65	6110†	8100B, 8200, D-440	Cutting	.65
				6130†	8250A, D-550	Cutting	.65

*Premium plated tip; all others copper. †With tip nuts. ‡Premium plated; with tip nuts. §Net Each.

MODEL 2400K AUTOMATIC GLUE GUN KIT

Automatic electric glue and caulk gun for fast, 30-second gluing. Features rapid heat up, work and indicator light, automatic glue feed, drip proof with automatic flow control valve. 120 volts; rated 150 watts. Two-wire cord. Kit includes Model 2400 glue gun, tool stand, 7 sticks of glue, 7 sticks of caulk. In fitted plastic storage case.
Weller No. 2400K Automatic Glue Gun Kit—Net Each, Lots of 1–2........**$10.80**
Net Each, Lots of 3–11....................**$9.75;** 12 Up.................. **8.65**

TEMPMATIC TEMPERATURE CONTROLLED SOLDERING TOOLS

Fast and reliable. Easy to handle, weighs 7 oz. Features quick change powerhead. Comes with 3⁄16″ chisel point, 700° F powerhead. 120 VAC.
Weller No. GT7A—Net Each, Lots of 1–2..............................**$12.50**
Net Each, Lots of 3–11................**$11.25;** 12 Up................. **10.00**
Weller No. GT6B—Same, but with 1⁄8″ conical point, 600° F powerhead.
Net Each, Lots of 1–2...... **$12.50;** 3–11...... **$11.25;** 12 Up.......**$10.00**
Weller No. 6B—Powerhead only, 1⁄8″ conical point, 600° F. Net Each.......... **8.75**
Weller No. 7A—Powerhead only, 3⁄16″ chisel point, 600° F. Net Each........... **8.75**
Weller No. GT—Handle only, with trigger and cord. Net Each................ **3.75**

FIELD SOLDERING IRON

Versatile controlled output tool for field servicing. Operates from suitable batteries or low voltage power source supplying 12 to 14 volts. Tip temperature, 700° F. Screwdriver blade tip, 3⁄16″ wide.
Weller No. TCP-12 Field Soldering Iron—Complete with battery clips and 12 ft. cord.
Net Each, Lots of 1–5......**$13.95;** 6–23.......**$12.55;** 24 Up.......**$11.20**

PROFESSIONAL SOLDERING IRONS

Extremely rugged, service grade tools. Stainless steel barrels, long life industrial grade double coated tips. Cool blue pencil handle of impact resistant plastic. Only 1¾ oz., 8″ long. 120 volts. UL Listed.
Weller No. WP25 Soldering Iron—25 watts, with 1⁄16″ screwdriver tip.
Net Each, Lots 1–11.........**$5.15;** 12–47.........**$4.65;** 48 Up.........**$4.15**
Weller No. WP40 Soldering Iron—40 watts, with 1⁄8″ screwdriver tip.
Net Each, Lots 1–11.........**$6.15;** 12–47.........**$5.55;** 48 Up......... **4.95**

REPLACEMENT TIPS FOR WP25 AND WP40

Weller No.	Tip Description	Net Each, Lots			Weller No.	Tip Description	Net Each, Lots		
		1-14	15-49	50 Up			1-14	15-49	50 Up
ST1	1⁄16″ screwdriver	$0.88	$0.79	$0.71	ST3	1⁄8″ screwdriver	$0.88	$0.79	$0.71
ST2	3⁄32″ screwdriver	.88	.79	.71	ST4	3⁄16″ screwdriver	.88	.79	.71

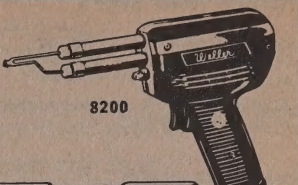
PROFESSIONAL DESOLDERING/RESOLDERING TOOL

A must for servicing modern printed circuit boards and solid state equipment. Complete with .063″ opening tip. 120 volts; rated 40 watts. Two-wire cord. See following page for illustration.
Weller No. DS40 Desoldering/Resoldering Tool—Net Each, Lots of 1–2......**$12.65**
Net Each, Lots of 3–11....................**$11.40;** 12 Up.................. **10.15**

REPLACEMENT DESOLDERING TIPS FOR DS40

Weller No.	Hole Dia., In.	Net Each, Lots of			Weller No.	Hole Dia., In.	Net Each, Lots of		
		1-11	12-47	48 Up			1-11	12-47	48 Up
DST1	.038	$0.88	$0.79	$0.71	DST4	.063	$0.88	$0.79	$0.71
DST2	.046	.88	.79	.71	DST5	.078	.88	.79	.71
DST3	.059	.88	.79	.71	DST6	.090	.88	.79	.71

WELLER SOLDERING IRONS ARE AVAILABLE WITH 3-WIRE CORDS.
WRITE FOR PRICES.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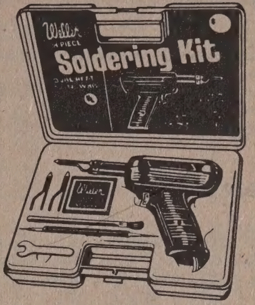
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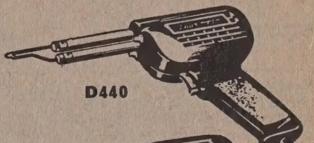
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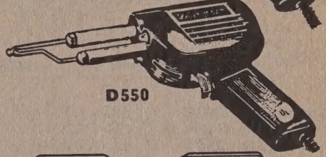
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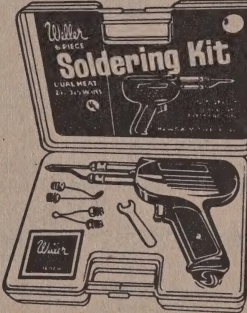
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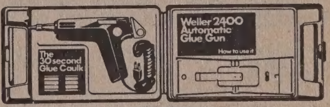
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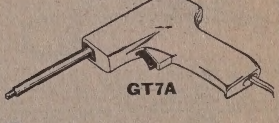
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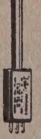
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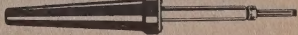
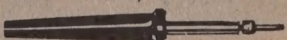

WP25, WP40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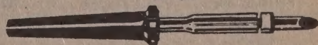
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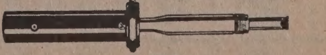
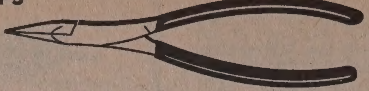

W-200

XCELITE® Professional Hand Tools

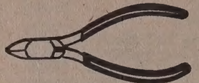
PLIERS AND SNIPS

CHAIN NOSE ELECTRICIAN'S PLIERS



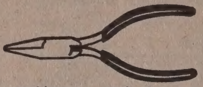
Xcelite No. 59CG—8″ pliers with long reach and high leverage. Rugged construction.............................**$4.80** ea.

DIAGONAL PLIERS



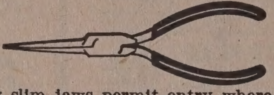
Xcelite No. 64CG—4″ electronic diagonal pliers......**$5.21** ea.
Xcelite No. 54CG—Midget 4″ size.................... **3.97** ea.
Xcelite No. 55CG—5″ pliers for most cutting needs... **4.16** ea.
Xcelite No. 66CG—6″ all-purpose.................... **4.57** ea.
Xcelite No. 67CG—7″ heavy duty..................... **4.57** ea.

LONG NOSE PLIERS



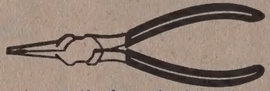
Xcelite No. 41CG—Midget 4″ without side cutters...**$3.84** ea.
Xcelite No. 52CG—6½″ long nose, without side cutters. **3.56** ea.
Xcelite No. 51CG—6½″ long nose, with side cutters.. **4.43** ea.

NEEDLE NOSE PLIERS



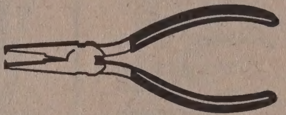
Xcelite No. 56CG—6″ size. Long slim jaws permit entry where regular long nose pliers won't work..................**$4.20** ea.
Xcelite No. 57CG—5½″ pliers with fine serrated jaws and coil spring. For firm gripping and looping of wire........**$5.03** ea.

RADIO AND TV PLIERS



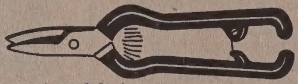
Xcelite No. 58CG—6″ pliers with extreme tip for gripping, sharp 5⁄16″ cutting edges 3⁄16″ back from tip................**$5.59** ea.
Xcelite No. 69CG—5″ fine pointed pliers with serrated tips for delicate work. Sharp 5⁄16″ cutting edges ⅛″ back from tips for fine wires..**$6.67** ea.

TRANSVERSE CUTTING PLIERS



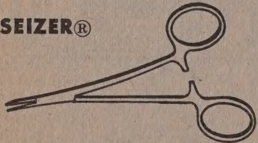
Xcelite No. 62CG—6″ cutter for flush cutoff and use where ordinary pliers won't reach. Coil spring opener.........**$5.28** ea.

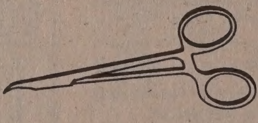
ELECTRONIC SNIPS



Designed to cut fine wire, filament and light sheet metal. Coil springs.
Xcelite No. 85CG—Short ¾″ blade..................**$3.23** ea.
Xcelite No. 86CG—Pointed 1½″ blade.............. **3.23** ea.

SEIZER®

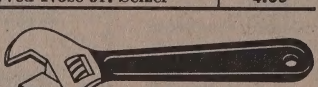




Versatile tools clamp wires for soldering, act as heat sinks.

Xcelite No.	Description	Ea.
42H	6″ Straight Nose Seizer	$4.53
43H	6″ Curved Nose Seizer	4.67
32H	5″ Straight Nose Jr. Seizer	4.40
33H	5″ Curved Nose Jr. Seizer	4.53

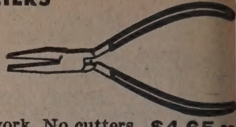
ADJUSTABLE WRENCHES



Xcelite No.	Length	Max. Opening	Ea.
44C	4″	½″	$3.48
44CG	4″	½″	3.87
46C	6″	¾″	3.53
46CG	6″	¾″	3.92
48C	8″	15⁄16″	4.00
48CG	8″	15⁄16″	4.47

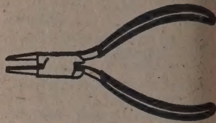
MINIATURE ELECTRONIC PLIERS

FLAT NOSE PLIERS



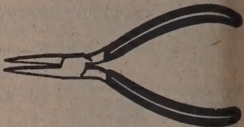
Xcelite No. 70CG—5″ long for fine work. No cutters..**$4.65** ea

ROUND NOSE PLIERS



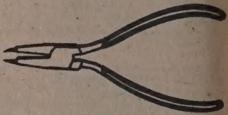
Xcelite No. 71CG—4½″ long. For looping and forming fin wires......................................**$5.09** ea

CHAIN NOSE PLIERS



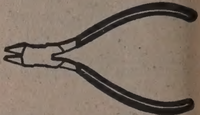
Xcelite No. 72CG—5″ long with thin chain nose......**$4.61** ea

SPECIAL TIP CUTTING PLIERS



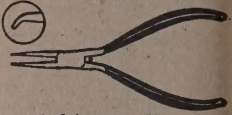
Xcelite No. 73CG—4½″ long. 45° oblique cutting tip.**$6.33** ea

DIAGONAL CLOSE AND FLUSH CUTTING PLIERS



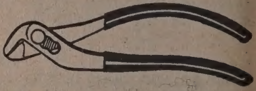
Xcelite No. 74CG—4″ long for fast, clean tip cutting. Fine tapered nose and near-flush cutting edges...................**$5.55** ea.
Xcelite No. 84CG—4″ full flush cutting, thin tapered jaws and pointed nose....................................**$5.48** ea.
Xcelite No. 95CG—5″ full flush cutting with pointed nose ....**$5.72** ea.

BENT THIN CHAIN NOSE PLIERS



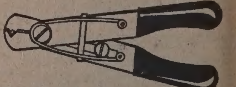
Xcelite No. 79CG—5″ long with fine serrated jaws, radius edges; 60° angle thin bent nose..........................**$5.63** ea.

ADJUSTABLE UTILITY PLIERS



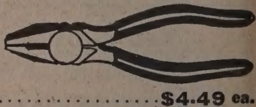
Xcelite No. 50CG—5″ slip joint ignition pliers.......**$2.96** ea.
Xcelite No. 53CG—7″ utility plier.................. **3.92** ea.
Xcelite No. 63CG—10″ utility plier................. **5.33** ea.

WIRE, COAX STRIPPERS AND CUTTERS



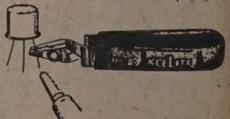
Xcelite No. 100—Adjustable screw stop for different wire sizes, cushion grips. Cuts and strips both solid and stranded wire, cleanly and neatly. Hardened and ground blades.....**$1.25** ea.
Xcelite No. 101-S—Same as No. 100 except with spring equipped self-opening handles..............................**$1.62** ea.
Xcelite No. 103-S—Unique cam stop adjustment for different wire sizes......................................**$2.03** ea.
Xcelite No. 590—Coax Stripper for Type RG-59U coax ....**$2.85** ea.

SIDE CUTTING PLIERS



Xcelite No. 60CG—6″ Electrician's..................**$4.49** ea.
Xcelite No. 68CG—8″ Lineman's..................... **5.40** ea.

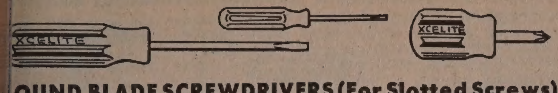
HEAT SINK



Xcelite No. 80—Heat Sink............................**$1.44** ea.

ALL PLIERS, SNIPS AND WRENCHES AVAILABLE WITH COMFORTABLE "CUSHION GRIP" (CG) HANDLES AS STANDARD

XCELITE® Professional Hand Tools



OUND BLADE SCREWDRIVERS (For Slotted Screws)

lades forged from tough AISI 6150 chrome vanadium steel. hockproof, breakproof, amber plastic handles.

celite No.	Blade	Handle	Overall	1-9, ea.	10Up,ea.
POCKET CLIP STYLE					
R3322	3/32" x 2"	1/2" x 2 1/4"	4 1/4"	$0.43	$0.39
R3323	3/32" x 3"	1/2" x 2 1/4"	5 1/4"	.47	.42
R3324	3/32" x 4"	1/2" x 2 1/4"	6 1/4"	.50	.45
R181	1/8" x 2"	1/2" x 2 1/4"	4 1/4"	.43	.39
R183	1/8" x 3"	1/2" x 2 1/4"	5 1/4"	.47	.42
R184 1/2	1/8" x 4"	1/2" x 2 1/4"	6 1/4"	.50	.45
REGULAR					
R182	1/8" x 2"	3/4" x 2 5/8"	4 5/8"	$0.50	$0.45
R184	1/8" x 4"	3/4" x 2 5/8"	6 5/8"	.57	.51
R186	1/8" x 6"	3/4" x 2 5/8"	8 5/8"	.64	.57
R188	1/8" x 8"	3/4" x 2 5/8"	10 5/8"	.74	.66
R1810	1/8" x 10"	3/4" x 2 5/8"	12 5/8"	.84	.75
R5323	5/32" x 3"	3/4" x 2 5/8"	5 5/8"	.64	.57
R5324	5/32" x 4"	3/4" x 2 5/8"	6 5/8"	.64	.57
R5325	5/32" x 5"	3/4" x 2 5/8"	7 5/8"	.67	.60
R5328	5/32" x 8"	3/4" x 2 5/8"	10 5/8"	.84	.75
R3163	3/16" x 3"	7/8" x 3 5/8"	6 5/8"	.81	.72
R3164	3/16" x 4"	7/8" x 3 5/8"	7 5/8"	.87	.78
R3166	3/16" x 6"	7/8" x 3 5/8"	9 5/8"	.97	.87
R3168	3/16" x 8"	7/8" x 3 5/8"	11 5/8"	1.11	.99
R31610	3/16" x 10"	7/8" x 3 5/8"	13 5/8"	1.31	1.17
R142	1/4" x 2"	1 1/16" x 4 1/8"	6 1/8"	1.01	.90
R144	1/4" x 4"	1 1/16" x 4 1/8"	8 1/8"	1.14	1.02
R146	1/4" x 6"	1 1/16" x 4 1/8"	10 1/8"	1.24	1.11
R148	1/4" x 8"	1 1/16" x 4 1/8"	12 1/8"	1.35	1.20
R1410	1/4" x 10"	1 1/16" x 4 1/8"	14 1/8"	1.41	1.26
R5164	5/16" x 4"	1 1/4" x 4 1/4"	7 5/8"	1.31	1.17
R5166	5/16" x 6"	1 1/4" x 4 1/4"	9 5/8"	1.41	1.26
R5168	5/16" x 8"	1 1/4" x 4 1/4"	12 1/2"	1.51	1.35
R51610	5/16" x 10"	1 3/8" x 4 1/2"	14 1/2"	2.02	1.80
R388	3/8" x 8"	1 3/8" x 4 1/2"	12 1/2"	2.05	1.83
R3810	3/8" x 10"	1 3/8" x 4 1/2"	14 1/2"	2.29	2.04
R3812	3/8" x 12"	1 3/8" x 4 1/2"	16 1/2"	2.70	2.40

PHILLIPS TYPE SCREWDRIVERS

Chrome vanadium steel blades. Precision points. Shockproof, breakproof, amber plastic handles.

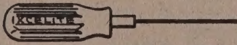
Xcelite No.	Point	Blade	Handle	Overall	1-9 ea.	10 Up ea.
POCKET CLIP STYLE						
P12S	#0	1/8" x 2"	1/2" x 2 1/4"	4 1/4"	$0.57	$0.51
STUBBY STYLE						
SX101	#1	3/16" x 1 7/16"	7/8" x 1 1/2"	2 15/16"	$0.87	$0.78
SX102	#2	1/4" x 1 5/16"	1 1/16" x 2"	3 5/16"	.97	.87
REGULAR						
X100	#0	1/8" x 2"	3/4" x 2 1/2"	4 5/8"	$0.64	$0.57
X101	#1	3/16" x 3"	7/8" x 3 5/8"	6 5/8"	.94	.84
X108	#1	3/16" x 6"	7/8" x 3 5/8"	9 5/8"	1.11	.99
X102	#2	1/4" x 4"	1 1/16" x 4 1/8"	8 1/8"	1.14	1.02
X103	#3	5/16" x 6"	1 1/16" x 4 1/8"	10 1/2"	1.68	1.50
X104	#4	3/8" x 8"	1 3/8" x 4 1/2"	12 1/2"	2.12	1.89
EXTRA LONG						
X1010	#1	3/16" x 10"	7/8" x 3 5/8"	13 5/8"	$1.41	$1.26
X1020	#2	1/4" x 10"	1 1/16" x 4 1/8"	14 1/8"	1.58	1.41

"SUPER-TRU" PHILLIPS SCREWDRIVERS

Precision made Phillips screwdrivers have "Super-Tru" tips for close fit, long wear, and reduced possibility of damage to screw head recesses, especially in small size fasteners. Bright nickel chrome blades with tips specially treated and black-oxide finished for ultimate dimensional control. Black plastic handles.

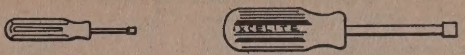
Xcelite No.	Point	Blade	Handle	Overall	1-9 ea.	10 Up ea.
XST-100	0	1/8" x 2"	3/4" x 2 5/8"	4 5/8"	$0.77	$0.69
XST-101	1	3/16" x 3"	7/8" x 3 5/8"	6 5/8"	1.11	.99
XST-102	2	1/4" x 4"	1 1/16" x 4 1/8"	8 1/8"	1.38	1.23
XST-1010	1	3/16" x 10"	7/8" x 3 5/8"	13 5/8"	1.65	1.47
XST-1020	2	1/4" x 10"	1 1/16" x 4 1/8"	14 1/8"	1.85	1.65

ALLEN HEX TYPE SCREWDRIVERS



Alloy steel blades. Shockproof, breakproof, plastic handles.

No.	Hex	Blade	Handle	Overall	1-9 ea.	10 Up ea.
LN-20	.050"	4"	3/4" x 2 5/8"	6 5/8"	$0.91	$0.81
LN-21	1/16"	4"	3/4" x 2 5/8"	6 5/8"	.91	.81
LN-22	5/64"	4"	3/4" x 2 5/8"	6 5/8"	.91	.81
LN-23	3/32"	4"	1" x 3 1/8"	7 1/8"	.91	.81
LN-764	7/64"	4"	1" x 3 1/8"	7 1/8"	.91	.81
LN-24	1/8"	4"	1" x 3 1/8"	7 1/8"	.97	.87
LN-964	9/64"	4"	1" x 3 1/8"	7 1/8"	.97	.87
LN-25	5/32"	6"	1" x 3 1/8"	9 1/8"	.97	.87
LN-26	3/16"	6"	1 1/16" x 4 1/8"	10 1/8"	.97	.87
LN-27	7/32"	6"	1 1/16" x 4 1/8"	10 1/8"	1.11	.99
LN-28	1/4"	6"	1 1/16" x 4 1/8"	10 1/8"	1.11	.99



COLOR-CODED NUTDRIVERS (1 1/4" Hole Depth)

Steel shafts with precision, cold-drawn, case-hardened sockets. Color-coded, plastic handles.

Xcelite No.	Color	Hex	Blade	Handle	Overall	1-9 ea.	10 Up ea.
MIDGET POCKET CLIP STYLE							
P3	Blue	3/32"	1 1/4"	1/2" x 2 1/4"	3 1/2"	$0.64	$0.57
P4	Red	1/8"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P5	Amber	5/32"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P6	Black	3/16"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P7	Brown	7/32"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P8	Red	1/4"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P9	Orange	9/32"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P10	Amber	5/16"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P11	Green	11/32"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
P12	Blue	3/8"	1 1/4"	1/2" x 2 1/4"	3 1/2"	.64	.57
REGULAR							
5	Amber	5/32"	3"	1" x 3 1/8"	6 1/8"	$1.04	$0.93
6	Black	3/16"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
7	Brown	7/32"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
8	Red	1/4"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
9	Orange	9/32"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
10	Amber	5/16"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
11	Green	11/32"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
12	Blue	3/8"	3"	1" x 3 1/8"	6 1/8"	1.04	.93
14	Brown	7/16"	2 5/8"	1 1/16" x 4 1/8"	6 3/4"	1.31	1.17
16	Red	1/2"	2 5/8"	1 1/16" x 4 1/8"	6 3/4"	1.31	1.17

COLOR-CODED HOLLOW SHAFT NUTDRIVERS

General purpose nutdrivers especially useful where nuts must be installed over long protruding bolts or studs.

REGULAR

(HOLE DEPTHS: HS6 and 7, 5 1/2"; HS8-12, 4 3/8"; HS13-24, 6")

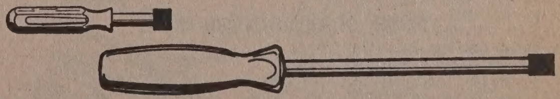
Xcelite No.	Color	Hex	Blade	Handle	Overall	1-9 ea.	10 Up ea.
HS6	Black	3/16"	3 1/8"	1" x 3 1/8"	6 1/4"	$1.18	$1.05
HS7	Brown	7/32"	3 1/8"	1" x 3 1/8"	6 1/4"	1.18	1.05
HS8	Red	1/4"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.18	1.05
HS9	Orange	9/32"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.18	1.05
HS10	Amber	5/16"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.18	1.05
HS11	Green	11/32"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.18	1.05
HS12	Blue	3/8"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.18	1.05
HS13	Amber	13/32"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.48	1.32
HS14	Brown	7/16"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.38	1.23
HS15	Amber	15/32"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.48	1.32
HS16	Red	1/2"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.38	1.23
HS17	Amber	17/32"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.55	1.38
HS18	Orange	9/16"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.41	1.26
HS19	Amber	19/32"	3 1/8"	1 1/16" x 4 1/8"	7 1/4"	1.72	1.53
HS20	Amber	5/8"	3 1/8"	1 1/8" x 4 1/2"	7 5/8"	1.62	1.44
HS22	Amber	11/16"	3 1/8"	1 1/8" x 4 1/2"	7 5/8"	2.70	2.40
HS24	Amber	3/4"	3 1/8"	1 1/8" x 4 1/2"	7 5/8"	2.70	2.40
EXTRA LONG (HOLE DEPTH: A6-12, 6 3/4")							
A6	Black	3/16"	6 1/2"	1" x 3 1/8"	9 1/8"	$1.45	$1.29
A7	Brown	7/32"	6 1/2"	1" x 3 1/8"	9 1/8"	1.45	1.29
A8	Red	1/4"	6 1/2"	1" x 3 1/8"	9 1/8"	1.45	1.29
A9	Orange	9/32"	6 1/2"	1" x 3 1/8"	9 1/8"	1.45	1.29
A10	Amber	5/16"	6 1/2"	1" x 3 1/8"	9 1/8"	1.45	1.29
A11	Green	11/32"	6 1/2"	1" x 3 1/8"	9 1/8"	1.45	1.29
A12	Blue	3/8"	6 1/2"	1" x 3 1/8"	9 1/8"	1.45	1.29

SUPER LONG HOLLOW SHAFT NUTDRIVERS

Fixed handle nutdrivers with better than 20" reach. Ideal for removing color TV tuners, bezels, etc. Shafts are highest quality rigid steel tubing; will not twist. Precision cold drawn, case-hardened sockets. Color-coded plastic handles.

Xcelite No.	Color	Hex	Blade	Handle	Overall	1-4 ea.	5 Up ea.
AA-8	Red	1/4"	16 3/4"	1 1/16" x 4 1/8"	20 7/8"	$4.30	$3.83
AA-10	Amber	5/16"	16 3/4"	1 1/16" x 4 1/8"	20 7/8"	4.30	3.83

MAGNETIC HEX NUTDRIVERS

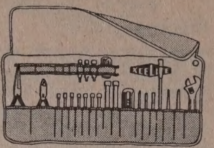


Nut and hex screw holding.

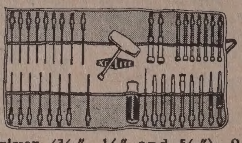
Xcelite No.	Color	Hex	Blade	Overall	1-9 ea.	10 Up ea.
P-8M	Red	1/4"	1 1/2"	3 1/2"	$1.08	$0.96
P-10M	Amber	5/16"	1 1/2"	3 1/2"	1.08	.96
8-M	Red	1/4"	3"	7"	1.65	1.47
10-M	Amber	5/16"	3"	7"	1.65	1.47
A-8M	Red	1/4"	6"	10"	2.09	1.86
A-10M	Amber	5/16"	6"	10"	2.09	1.86
AA-8M	Red	1/4"	16 3/4"	20 3/4"	4.89	4.35
AA-10M	Amber	5/16"	16 3/4"	20 3/4"	4.89	4.35

XCELITE® Professional Hand Tools

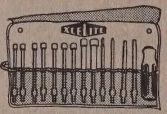
SERIES 99 SERVICE KITS



Xcelite No. 99SM—23-Piece Service Master Kit—Durable, plastic-coated canvas case contains 6" long nose "Cushion Grip" pliers, 5" diagonal "Cushion Grip" pliers, 6" thin-pattern adjustable wrench, regular (1 1/16" x 4⅛") and stubby (1 1/16" x 2") plastic handles for interchangeable blades, 9 regular (3/16" thru ½") and 3 stubby (¼", 5/16", ⅜") nutdriver blades, a #1 Phillips screwdriver blade, 3/16" and ¼" slotted screwdriver blades, ⅛" to ⅜" and ¼" to ½" reamer blades, 7" extension blade.......... **$30.38 ea.**

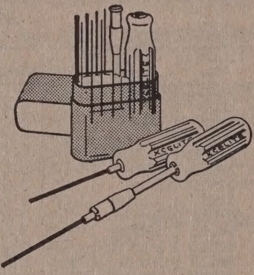


Xcelite No. 99MP—39-Piece Multi-Purpose Kit—Plastic-coated canvas case folds into compact package. Kit includes regular (1 1/16" x 4⅛") and Tee (1" x 3⅜") plastic handles and following interchangeable blades: 10 nutdriver (5/32" thru ½"), 9 Allen hex type screwdriver (.050" thru 3/16"), 9 Bristol Multiple-Spline screwdriver (.048" thru .183"), 3 slotted screwdriver (3/16", ¼" and 5/16"), 2 Phillips screwdriver (#1 and #2), 2 reamers (⅛" to ⅜" and ¼" to ½"), awl and 4" extension..................... **$31.05 ea.**



Xcelite No. 99PR—14-Piece Nutdriver/Screwdriver Kit—Regular size (1 1/16" x 4⅛") Series 99 handle and following blades: 9 nutdriver (3/16" thru ½"), 3/16" and ¼" slotted screwdriver, #1 and #2 Phillips screwdriver. Roll-up plastic case. .... **$10.35 ea.**

SERIES 99 COMPACT SETS



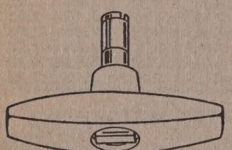
Pocket size, plastic cases pack an unusual number of tools into a small space. Flat bottom of case permits its use as bench stand. Series 99 blades are interchangeable in handle supplied with each set.

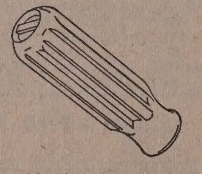
Xcelite No. 99PS-40—11-Piece Allen Hex Type Screwdriver Set—Regular size (1 1/16" x 4⅛") Series 99 handle, 9 Allen hex type screwdriver blades (.050" thru 3/16"), 4" extension blade................. **$7.80 ea.**

Xcelite No 99PS-50—14-Piece Nutdriver/Screwdriver Set—Regular size (1 1/16" x 4⅛") Series 99 handle and following blades: 7 nutdriver (3/16" thru ⅜"), 3/16" and ¼" slotted screwdriver, #1 and #2 Phillips screwdriver, 4" extension.......................... **$9.60 ea.**

Xcelite No. 99PS-60—11-Piece Bristol Screwdriver Set—For Bristol Multiple-Spline socket screws. Regular size (1 1/16" x 4⅛") Series 99 handle, 9 Bristol screwdriver blades (.048"/4-flute thru .183"/6-flute), 4" extension blade....................... **$7.80 ea.**

SERIES 99 REVERSIBLE RATCHET HANDLES

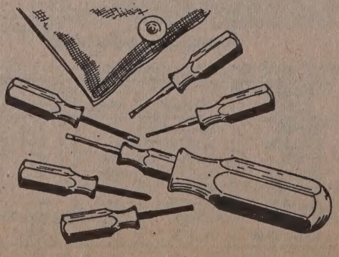




Unique plastic ratcheting handles fit over 60 different Xcelite blades—nutdrivers, screwdrivers and special purpose interchangeable blades—to speed up assembly and service work. Ratchet mechanism is fully enclosed to keep out dirt and grit. Recessed reversing shift is easily operated by a flick of the thumb; cannot be accidentally tripped while driving. Light ratchet drag for easy turning. Mechanism is fully contained within handle.

Xcelite No.	Description	Color	Size	1-4 ea.	5 Up ea.
99-1-R	Regular handle	Black	1¼" x 4½"	$5.57	$4.95
99-4-R	Tee handle	Black	3½" x 2⅜"	5.57	4.95

MINI SCREWDRIVER SETS

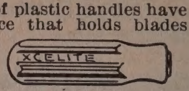


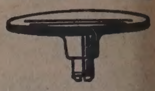
Xcelite No. M-50—Five piece miniature jewelers type slotted screwdriver set containing sizes .040" thru .100"; ⅞" blade lengths; 2½" overall .... **$1.65 ea.**

Xcelite No. M-60—Six piece miniature screwdriver set includes one #00 Phillips driver, 5 slotted drivers (.040" thru .100") and torque amplifier handle. ⅞" blade lengths; 2½" overall .... **$2.25 ea.**

SERIES 99 HANDLES & INTERCHANGEABLE BLADES

Shockproof, breakproof plastic handles have patented spring device that holds blades firmly yet permits easy insertion and removal.

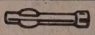




HANDLES

Xcelite No.	Size and Description	Working Length	1-4 ea.	5 Up ea.
99-1	Regular, 1 1/16" x 4⅛"	....	$0.84	$0.75
99-2	Junior, 1" x 3⅛"	....	.81	.72
99-3	Stubby, 1 1/16" x 2"	....	.77	.69
99-4	Tee, 1" x 3⅜"	....	1.11	.99

NUTDRIVERS

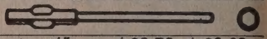


99-5	5/32"	3⅝"	$0.77	$0.69
99-6	3/16"	3⅝"	.77	.69
99-7	7/32"	3⅝"	.77	.69
99-8	¼"	3⅝"	.77	.69
99-S8	¼" Stubby	1⅜"	.64	.57
99-9	9/32"	3⅝"	.77	.69
99-10	5/16"	3⅝"	.77	.69
99-S10	5/16" Stubby	1⅜"	.64	.57
99-11	11/32"	3⅝"	.77	.69
99-12	⅜"	3⅝"	.77	.69
99-S12	⅜" Stubby	1⅜"	.64	.57
99-14	7/16"	4"	.94	.84
99-16	½"	4"	.94	.84

MAGNETIC NUTDRIVERS

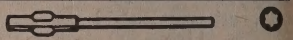
99-8M	¼"	3⅝"	$1.24	$1.11
99-10M	5/16"	3⅝"	1.24	1.11

ALLEN HEX TYPE SCREWDRIVERS



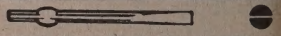
99-20	.050"	4"	$0.70	$0.63
99-21	1/16"	4"	.70	.63
99-22	5/64"	4"	.70	.63
99-23	3/32"	4"	.70	.63
99-764	7/64"	4"	.70	.63
99-24	⅛"	4"	.70	.63
99-964	9/64"	4"	.70	.63
99-25	5/32"	4"	.70	.63
99-26	3/16"	4"	.70	.63

BRISTOL TYPE MULTIPLE-SPLINE SCREWDRIVERS



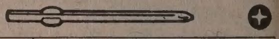
99-61	.048", 4-flute	4"	$0.70	$0.63
99-62	.060", 6-flute	4"	.70	.63
99-63	.069", 4-flute	4"	.70	.63
99-64	.072", 6-flute	4"	.70	.63
99-65	.076", 4-flute	4"	.70	.63
99-66	.096", 6-flute	4"	.70	.63
99-67	.111", 6-flute	4"	.70	.63
99-68	.145", 6-flute	4"	.70	.63
99-69	.183", 6-flute	4"	.70	.63

SLOTTED SCREWDRIVERS



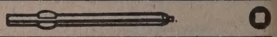
99-125	⅛"	3⅞"	$0.77	$0.69
99-811	3/16"	3⅞"	.77	.69
99-250	¼"	3⅞"	.77	.69
99-312	5/16"	3⅞"	.77	.69

PHILLIPS SCREWDRIVERS



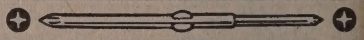
99-820	#0	3⅞"	$0.77	$0.69
99-821	#1	3⅞"	.77	.69
99-822	#2	3⅞"	.77	.69

SCRULOX® SCREWDRIVERS



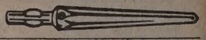
99-SL-0	#0	4"	$0.77	$0.69
99-SL-1	#1	4"	.77	.69
99-SL-2	#2	4"	.77	.69
99-SL-3	#3	4"	.77	.69

REVERSIBLE SCREWDRIVERS



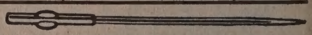
99-83	Frearson, 3/16" and 9/32"	3¼"	$1.35	$1.20
99-84	Clutch, 3/16" and 5/32"	3¼"	1.35	1.20

REAMERS



99-38	⅛" to ⅜"	4⅛"	$2.02	$1.80
99-39	¼" to ½"	4⅛"	2.53	2.25

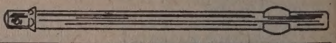
AWL/SCRIBER



99-70	Awl/Scriber	4½"	$0.77	$0.69

ADAPTERS

For use with ¼" square drive sockets.

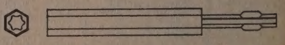


99-X2	Extension	Adds 1"	$0.60	$0.54
99-X4	Extension	Adds 3"	.77	.69

EXTENSION BLADES

99-X5	Extension	4"	$1.11	$0.99
99-X10	Extension	7"	1.21	1.08

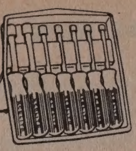
INVERTED PALNUT DRIVER SHANK SET



Two interchangeable nutdriver shanks for Series 99 sets. Precision formed shanks are hollow to slip over projecting shafts. Includes 7/16" and ½" external hex sizes. Each, 4" long.
Xcelite No. 99-PAL.................................. **$2.34 ea.**

XCELITE® Professional Hand Tools

"TRAY BIEN" NUTDRIVER SETS



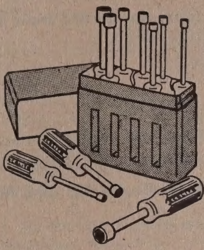
Durable, molded plastic trays with fold-away tand, wall-mounting holes and snap-lock rrangement to hold tools firmly. Nutdrivers ave color-coded, shockproof, breakproof lastic handles. Precision, case-hardened ockets.

Xcelite No. 127TB—Seven nutdrivers (3/16" hru 3/4" hex sizes) with 1¼" deep bolt learance hole in shaft..........**$7.13 ea.**

Xcelite No. 137TB—Five nutdrivers (3/16" thru 3/8" hex sizes) with 1¼" deep bolt clearance hole; 2 hollow shaft (1/2" and 9/16" hex izes) nutdrivers..............................**$8.03 ea.**

Xcelite No. 147TB—Seven hollow shaft (1/4" thru 1/2" hex sizes) nutdrivers..**$8.94 ea.**

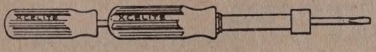
"KEEP AND CARRY" NUTDRIVER SET



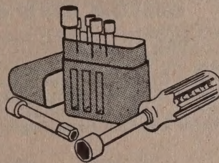
Sturdy yellow plastic case keeps color-coded nutdrivers in order on workbench. Tight fitting, snap-lock covers permit carry-out convenience without spilling or losing them in tool box.

Xcelite No. HS6-18 Hollow Shaft Nutdriver Set—Ten hex sizes 3/16" thru /16"..................**$12.30 ea.**

INTERCHANGEABLE HOLLOW SHAFT NUTDRIVER SET



ADJUSTS LOCKNUT SCREWS



Plastic handle is drilled to permit running screwdriver blade through center, and down through interchangeable hollow nutdriver shafts to speed setting of locknut/screw adjustments. Eight shafts, hex sizes 3/16" thru 9/16".

Xcelite No. HSC-1........**$9.75 ea.**

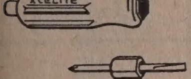
NUTDRIVER SETS

Popular sizes of color-coded nutdrivers in handy plastic case with eyelet for hanging.

Xcelite No. 157 7-Piece Nutdriver Set—Shafts have 1¼" clearance hole depth. Includes 3/16", 1/4", 5/16", 11/32", 3/8", 7/16" and 1/2" hex sizes. Overall length, 6⅛" except 7/16" and 1/2" sizes, 6¾" long. Color-coded handles.................................**$7.20 ea.**

Xcelite No. 177 7-Piece Hollow Shaft Nutdriver Set—Includes 3/16, 1/4", 5/16", 11/32", 3/8", 7/16" and 1/2" sizes. Overall, 7¼" except 3/16" size, 6¼". Shaft, 3⅛". Color-coded handles......**$8.04 ea.**

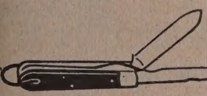
COMBINATION SCREWDRIVER/NUTDRIVER SET



Xcelite No. 600—Handy 4-way tool with 1/4" and 7/16" hex openings in handle. Stubby blade has #1 Phillips and 3/16" slotted ends.

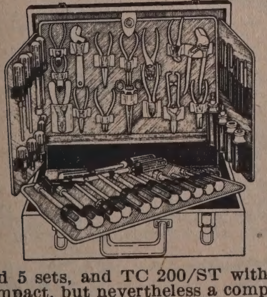
Lots 1–9.................**$2.02 ea.**
Lots 10 Up.............. **1.80 ea.**

ELECTRICIAN'S KNIFE



Xcelite No. K22—Combination knife and screwdriver. Screwdriver blade has sharp edge for scraping insulation. Has positive lock when open.................**$3.08 ea.**

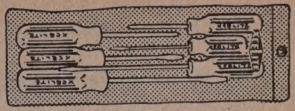
ATTACHE STYLE TOOL CASES



Quality tool cases built to last for the field engineer and technician/serviceman. Outfitted with wide variety of Xcelite screwdrivers, nutdrivers, hex drivers, pliers, wrenches, wire strippers and more. Plenty of space in bottom of case for soldering equipment, meters, test equipment, parts, etc. Tool pallets are removable. Lid has literature pocket. Two styles—TC 100/ST, illustrated, with 57 single tools and 5 sets, and TC 200/ST with fewer tools, smaller and more compact, but nevertheless a complete set of tools.

Xcelite No. TC 100/ST—Case with tools.........**$175.30 ea.**
Xcelite No. TC 100/MT—Case only............. **53.20 ea.**
Xcelite No. TC 200/ST—Case with tools......... **91.10 ea.**
Xcelite No. TC 200/MT—Case only............. **35.50 ea.**

SCREWDRIVER SETS

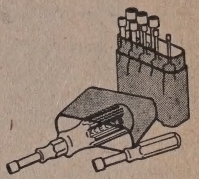


Xcelite No. SDR-11 5-Piece Screwdriver Set—Round blade for slotted screws. Includes 1/8", 5/32", 3/16", 1/4" and 5/16" blade dia. Overall, 4⅝" to 10¼". Blade length, 2" to 6"........**$4.50 ea.**

Xcelite No. SDX-22 5-Piece Phillips Screwdriver Set—Includes sizes 0, 1, 2 and 3 with blade lengths from 2" to 6", overall length from 4⅝" to 10½"; plus a #2 stubby Phillips, 1 5/16" blade, 3 5/16" overall..**$5.10 ea.**

Xcelite No. SRX-33 6-Piece Screwdriver Set—Includes four slotted types (1/8", 3/16", 1/4" and 5/16" blade dia.; 4" and 6" blade lengths; 6⅝" to 10½" overall); #1 Phillips with 3" blade, 6⅝" overall; #2 Phillips with 4" blade, 8⅛" overall.......**$5.85 ea.**

COMPACT SCREWDRIVER, NUTDRIVER AND HEX DRIVER SETS



Torque amplifier hollow handle slips over tops of midget tools (all 3½") for larger grip, extended reach and increased driving power. See-thru plastic case fits pocket.

Xcelite No. PS6 Screwdriver/Nutdriver Set—Contains 6 screwdrivers; 3 Phillips (#00, 0 and 1) and 3 slotted screwdrivers (3/32" thru 5/32") **$3.69 ea.**

Xcelite No. PS7 Screwdriver/Nutdriver Set—Two (1/4", 5/16") nutdrivers; 2 slot-tip (3/32", 3/16") and 2 Phillips (#0, 1) screwdrivers......................................**$4.47 ea.**

Xcelite No. PS88 Screwdriver Set—Five slot-tip (3/32", 1/8", 5/32", 3/16", 1/4"), 3 Phillips (#0, 1 and 2)..................**$4.65 ea.**

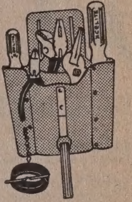
Xcelite No. PS120 Nutdriver Set—Ten (3/32" thru 3/8") nutdrivers. ....**$6.45 ea.**

Xcelite No. PS130 Screwdriver/Nutdriver Set—Contains Phillips (#1, 2); 3 slotted (1/8", 3/16" and 1/4") and 5 (3/16" thru 3/8") nutdrivers....................................**$6.15 ea.**

Xcelite No. PS140 Screwdriver/Nutdriver Set—Contains Phillips (#0, 1 and 2); 4 slotted screwdrivers (3/32" thru 1/4") and 3 nutdrivers (1/4" thru 3/8")..........................**$6.00 ea.**

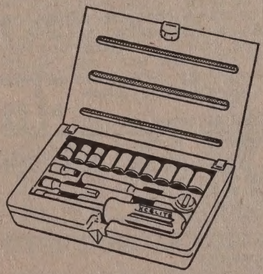
Xcelite No. PS89 Hex Driver Set—Contains eight midget Allen hex type drivers in sizes from .028" to 1/8"..............**$4.65 ea.**

TOOL HOLSTER



Xcelite No. 150—Handy tool holster has tape holder, knife clip, and five tool pockets. Durable construction of saddle leather with natural cowhide finish. Comfortable hip-contoured back, hot-waxed stitching, brass rivets. Tools not included...........................**$5.48 ea.**

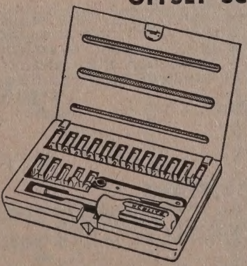
14-PIECE SOCKET WRENCH SET



Precision 1/4" square drive socket set. Sockets are hot forged from alloy steel; heat treated for long, hard wear. Rugged, streamlined design with straight sidewalls; chamfered ends for easy insertion of ratchets. Reversible ratchet mechanism is fully enclosed. Short (1/4" minimum) handle swing and small round head permits work in tight quarters. Includes nine 6-pt. sockets (3/16" to 1/2"), two 10-pt. sockets (1/4" and 5/16") for hex and square nuts, 4¾" reversible ratchet, 2" extension, 5¾" spinner/extension, high-impact molded case.

Xcelite No. 1001.**$12.40 ea.**

MIDGET REVERSIBLE RATCHET OFFSET SCREWDRIVER SET



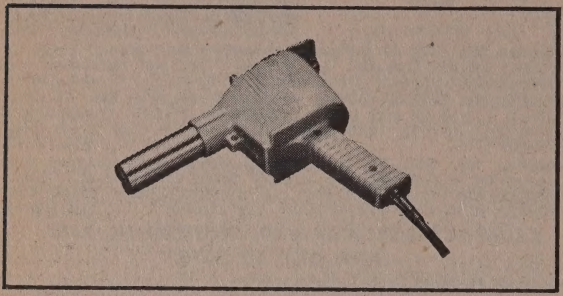
All-purpose set for Allen hex type, Phillips and slotted screws. Reversible ratchet and spinner/extension can also be used with 1/4" square drive sockets, with adapter included. Bits are precision made of chrome nickel molybdenum alloy steel. Knurled spinner tops for quick finger starting of screws. Heavy-duty 20-tooth, 1/4" hex drive ratchet of stainless steel with quick action and short (18°) turning radius. Includes: 12 Allen hex type screw bits (.050" to 5/16"), two slotted screw bits, #1 and #2 Phillips bits, 3¾" reversible ratchet, 6" spinner extension, 1/4" hex to 1/4" square adapter; and molded, compartmented case.

Xcelite No. XL-70...................................**$9.73 ea.**

Xcelite No. XL-75 Offset Screwdriver Kit—Includes ratchet described above and four screwdriver bits (3/16" and 1/4" slotted, #1 and #2 Phillips) in plastic pocket kit..............**$3.09 ea.**

IDEAL Heat Gun, Wire Strippers

IDEAL HEAT GUN



Versatile, easy-to-use heat shrink tool is designed specifically for heat shrink applications. Compact, lightweight and perfectly balanced for effortless handling. The comfortable, secure feel of its pistol-shaped grip offers the operator firm, positive control. Heat gun is versatile in design and applications. Nozzles are interchangeable; gold is standard and used for most shrinkables. Green nozzle for Mylar* and red nozzle for Teflon* are optional. Convenient three-position thumb switch provides instant control of heat output. Heat gun may be hand-held or may be placed on the work bench. It stands firmly on either side, on top, or on back. NORYL** high-impact housing makes it almost indestructible. Operation is economical in every aspect. Nozzle heating elements are designed for long life. Low-cost replacement can be easily done in seconds. Low air volume means less heat build-up in work area. Shaded-pole, brushless-type motor is rated for continuous use. Whisper-quiet operation.

*Registered DuPont trademark.
**General Electric NORYL® thermo-plastic.

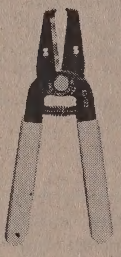
Ideal No. 46-013 Heat Gun—With gold nozzle only. Net Each..**$34.95**

NOZZLES

Ideal No. 46-921 Green Nozzle—For 46-013. Net Ea... **4.95**
Ideal No. 46-922 Gold Nozzle—For 46-013. Net Ea.... **4.95**
Ideal No. 46-923 Red Nozzle—For 46-013. Net Each... **4.95**

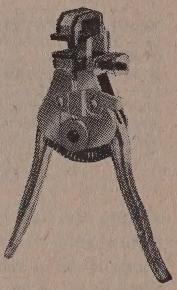
IDEAL WIRE STRIPPERS

Stripmaster®



Wire Cutter

T-5



Custom Stripmaster®

STRIPMASTER® WIRE STRIPPERS

One light squeeze strips wire clean up to ⅞″. Jaws hold open for removing wire without crushing. Practically eliminates all nicking, cutting or fraying. Especially good for production stripping of lighter gauge wires, automotive wiring, radio and instrument wire and cable, aviation wire, telephone or fixture wire, etc. Blades changed by removing only two screws. Shpg. Wt., 14 oz.
Ideal Stripmaster Wire Stripper—Complete. Net Each.. **$7.65**
Ideal Extra Blades—Net per Pair.......................**$2.20**
Ideal No. L-5270 Adjustable Wire Stop Attachment—Net **1.25**

Stripper No.	Extra Blades	For Wire	Holes	Stripper No.	Extra Blades	For Wire	Holes
45-090	L-4419	8-12	3	45-093	L-4422	14-22	4
45-091	L-4420	10-18	4	45-097	L-4994	16-26	6
45-092	L-4421	10-22	6	45-098	L-5361	20-30	6
45-095*	L-4452	16 or 18, SP & SPT Slot					

*Also strips 2- and 3-conductor low-voltage wire used in GE and Touchplate remote control wiring systems.

WIRE CUTTER

Handy wire cutter for production and assembly work. Cuts copper or aluminum wire of solid type up to #10 AWG; fine stranded cable to ½″ O.D. Shear-type blades permit square, clean cut without ragged ends. Hardened steel construction with carefully ground cutting surfaces. Plastic grips on handles for sure handling. Length, 6″.
Ideal No. 45-123 Wire-Cutter—Net Each.............. **$2.65**
*Reg. DuPont trademark.

T-TYPE WIRE STRIPPERS

Hardened steel stripper for quick, easy, clean stripping of wires used in electronic instruments and appliances. Plastic grips.
Ideal No. 45-120 T-5 Wire Stripper—Strips 10, 12, 14, 16 and 18 gauge wires. Net Each.......................... **$2.65**
Ideal No. 45-121 T-6 Wire Stripper—Strips 16, 18, 20, 22, 24 and 26 gauge wires. Net Each.......................... **$2.65**
Ideal No. 45-125 T-7 Wire Stripper—Strips 22, 24, 26, 28 and 30 gauge wires. Net Each.......................... **$2.90**

CUSTOM STRIPMASTER® WIRE STRIPPERS

Strips wires #10–#30 without nicking or scraping wire, without marking insulation. Fast, accurate, squeeze-release operation. For use on Teflon and other insulations. Shpg. Wt., 14 oz.
Ideal Custom Stripmaster Wire Stripper—Net Each... **$23.05**
Ideal Custom Stripmaster Wire Stripper—Same as above, but with stop latch and wire-stop. Net Each... **$26.35**
Ideal Replacement Blade Set for Above—Net per Pair..**$9.85**

GENERAL PURPOSE

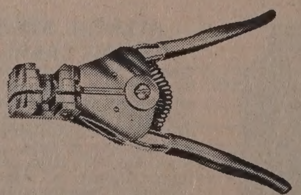
Stripping of plastic, Fibreglass and other hard-to-strip insulations.

Stripper No.	Stripper With Stop Latch & Wire-stop	Extra Blade Sets	For Wire	No. of Holes
45-170	45-180	L-5210	10-14	3
45-171	45-181	L-5211	16-26	6
45-172	45-182	L-5436	26-30	3
FOR TYPE EE—1000 V TEFLON* WIRE				
45-173	45-183	L-5562	10-14	3
45-174	45-184	L-5563	16-26	6
45-175	45-185	L-5564	26-30	3
FOR TYPE E—600 V TEFLON WIRE				
45-176	45-186	L-5559	10-14	3
45-177	45-187	L-5560	16-26	6
45-178	45-188	L-5561	26-30	3

*DuPont trademark.

Ideal No. L-5269 Short-Stop Latch—Limits stripping stroke to 5/32″. Disengages without removal to allow full ⅞″ stroke. Net.**$2.05**
Ideal No. L-5270 Wire Stop—Adjustable. Provides uniform stripping length. Net Each..............................**$1.25**

DUAL BLADE STRIPMASTER®



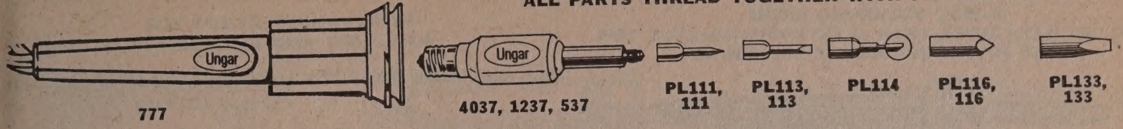
Dual Blade Stripmaster®

Designed for close tolerance stripping of MIL-W-5086, Type II fiberglass-insulated aircraft wire. Precision matched blades cut insulation neatly with no ragged ends. Insulation slug is slipped off conductor by moving gripper without nicking, scraping or burnishing wire strands.
Ideal No. 45-500 Dual Blade Stripmaster—For #16 to #22 wire. Net Each..............................**$57.20**
Ideal No. 45-501 Dual Blade Stripmaster—For #10 to #14 wire. Net Each..............................**$57.20**
Ideal No. L-7409 Wire Stop—For above tools. Net Each. **2.25**

CUSTOM-BUILT STRIPPER SERVICE AVAILABLE.

Ungar® "Standard Line" Soldering Tools

ALL PARTS THREAD TOGETHER WITH FINGERTIP EASE



MODEL 777 "CLEAN ROOM" HANDLE, KIT

"Clean Room" grip for electronic use. Pastel color handle reduces operator eye fatigue. Full contact spring socket; stainless steel heat deflector; octagonal guard washer; plated socket terminals; ceramic and glass insulator; thermo-stabilized phenolic body; polyvinyl insulated cord. Tips can't wobble.

Ungar Model 777 Handle—For 120 VAC/DC. Net, 1–9 . . **$2.15** Net Each, 10–99 . . . . **$1.80**; 100 Up **1.65**

Ungar Model 776 Handle—Same, but red with cork grip. Net Each, 1–9 . . . **$2.15**; 10–99 . . . **$1.80**; 100 Up . . . **$1.65**

Ungar Model 7070 All Purpose Kit—42 W, 120 VAC with 776 handle, 1237 heating unit, and 111, 113 and 116 tips. Net Each, 1–9 . . . **$6.25**; 10–99 . . . **$5.15**; 100 Up . . . **$4.70**

Ungar Model 7929 Kit—27 W with 7901 handle and heating unit; 113 tip; 7951 wire stripper; 400 sponge and tray. Net Each, 1–9 . . . **$4.60**; 10–99 . . . **$3.75**; 100 Up . . . **$3.45**

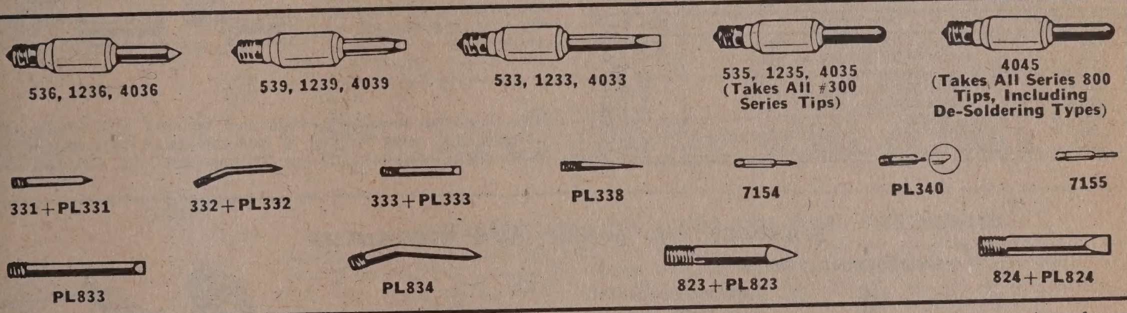
THREAD-ON HEATING UNITS AND TIPS

Provides 100% increase in recovery rate; greater heat transfer. Stops tip seizure from oxidation or solder; passivated plating prevents barrel oxidation and surface flaking. Tips copper alloy, iron clad silver-plated or unplated.

Ungar No.	Description	Net Each, Lots of 1-9	10-49	100 Up
4037	800°–850° F, 50-watt unit*	$3.95	$3.25	$2.95
1237	700°–750° F, 42-watt unit*	2.70	2.25	2.05
537	600°–650° F, 27-watt unit*	2.10	1.70	1.60
PL111	Iron clad pencil, ¾" long	1.00	.82	.75
PL113	Iron clad chisel, ¾" long	1.00	.82	.75
PL114	Iron clad stepped micro-spade	1.00	.82	.75
PL116	Iron clad pyramid, 5/16" long	1.00	.82	.75
111	Unplated copper pencil	.48	.40	.36
113	Unplated copper chisel	.48	.40	.36
116	Unpltd copper pyramid ¾" lg.	.48	.40	.36
PL133	Iron clad long taper chisel, ¾" lg.	1.00	.82	.75
133	Same as PL133, but copper tip only	.48	.40	.36

*At 120 volts.

INTERCHANGEABLE TIPS, ELEMENTS AND TIPLET THREAD-IN TIPS



Heating Units Temperature Range: 850°–1000° F for **Super Hi-Heat** Series #4000 rated 50 W; 750°–800° F for **Hi-Heat** Series #1200 rated 42 W; and 650°–750° F for **Standard** Series #500, rated 27 W. **Note:** "Standard Line" components are interchangeable with each other; but may NOT be used with "Imperial® Line" items.

INTEGRATED HEATING UNITS WITH TIPS

Ungar No.	Description	Net Each, Lots of 1-9	10-99	100 Up
533	*27 W copper, long taper chisel tip	$1.85	$1.55	$1.40
536	*27 W copper, pyramid tip	1.85	1.55	1.40
539	*27 W copper, short taper chisel tip	1.85	1.55	1.40
1233	†42 W copper, long taper chisel tip	2.70	2.25	2.05
1236	†42 W silver-plated, solid Armco iron pyramid tip	2.70	2.25	2.05
1239	†42 W silver-plated, solid Armco iron chisel tip	2.70	2.25	2.05
4033	‡50 W iron clad, silver-plated, long chisel tip	3.95	3.25	2.95
4036	‡50 W iron clad, silver-plated, pyramid tip	3.95	3.25	2.95
4039	‡50 W iron clad, silver-plated, taper chisel tip	3.95	3.25	2.95

*27 W at 120 VAC/DC; †42 W at 120 VAC/DC; ‡50 W at 120 VAC/DC.

HEATING UNITS AND TIPLET THREAD-IN SOLDERING TIPS

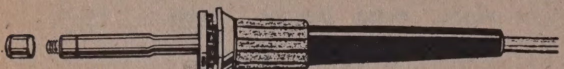
Ungar No.	Description	Net Each, Lots of 1-9	10-99	100 Up
535	*⅛" tap unit for 300 and 7100 Series Tiplets	$1.85	$1.55	$1.40
1235	†⅛" tap unit for 300 and 7100 Series Tiplets	2.70	2.25	2.05
4035	‡⅛" tap unit for 300 and 7100 Series Tiplets	3.95	3.25	2.95
7062	Precision point, iron clad, ⅛" dia.	1.41	1.14	1.06
PL331	Iron clad, silver-plated, 1" pencil ⅛" dia.	.76	.63	.57
331	Plain copper version of PL331 Tiplets	.31	.26	.23
PL332	Iron clad, silver-plated 1" offset pencil, ⅛" dia.	.76	.63	.57
332	Plain copper version of PL332 Tiplets	.31	.26	.23
7154	Iron clad, silver-plated stepped pencil	.76	.63	.57
PL333	Iron clad, silver-plated 1" long chisel, ⅛" dia.	.76	.63	.57
333	Plain copper version of PL333 Tiplets	.31	.26	.23
7155	Iron clad, silver-plated stepped chisel	.76	.63	.57
PL338	Iron clad, silver-plated 1" tapered needle, 1/16" dia.	.76	.63	.57
PL340	Iron clad, silver-plated ½" micro-needle, 3/64" dia.	.76	.63	.57
4045	‡50 W 3/16" tap unit for Series 800 Tiplets	3.95	3.25	2.95
PL823	Iron clad, silver-plated 1" pyramid, 3/16" dia.	.88	.72	.66
823	Plain copper version of PL823 Tiplets	.36	.30	.27
PL824	Iron clad, silver-plated 1" chisel, 3/16" dia.	.88	.72	.66
824	Plain copper version of PL824 Tiplets	.36	.30	.27
PL833	Iron clad, silver-plated 1¾" chisel, 3/16" dia.	1.18	.97	.88
PL834	Iron clad, silver-plated 1¾" offset chisel, 3/16" dia.	1.18	.97	.88

*27 W at 120 VAC/DC; †42 W at 120 VAC/DC; ‡50 W at 120 VAC/DC.

3-WIRE SOLDERING IRONS, STANDARD LINE AND 3-WIRE IRON ACCESSORIES

3-WIRE SOLDERING IRONS AND TIPS

3-WIRE SOLDERING IRONS FOR USE WITH MORE THAN 40 INTERCHANGEABLE TIPS FOR SOLDERING AND DE-SOLDERING



Provides many of the advantages of the Standard Line as a production soldering tool with approved grounding. Lightweight, integrated iron has molded phenolic handle and octagonal, roll-proof, pastel color grip; features cooler handle-to-tip temperature ratio. Will accept more than forty 3/16″ and 1/8″ thread-in and 1/4″ thread-on tips, tiplets, nibs and de-soldering tips. Threaded metal body for tip interchangeability is fabricated from a special metal alloy that makes tips and tiplets seizure resistant. Simple design makes in-shop replacement of heating element and cord possible. 3-wire irons are available in 3 wattages ranging in temperatures from approximately 650° F to 1000° F. Color coded cool-grips identify wattage ratings and approximate temperature delivery. Designed to eliminate static induced currents, iron is especially desirable for work on Mosfet and other IC components. Meets MIL, NASA and other government contractor soldering standards.

Ungar No.	Volt-age	Watts	Tip Temp.	Net Each, Lots of		
				1-9	10-99	100 Up
127*	120	27	650° F–750° F	$6.66	$5.47	$5.00
135*	120	35	750° F–850° F	6.66	5.47	5.00
145*	120	45	900° F–1000°F	6.66	5.47	5.00

*1/8″ and 3/16″ adapters included; tip not supplied.

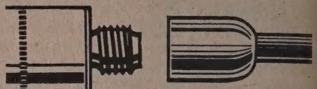
REPLACEMENT PARTS FOR 3-WIRE SOLDERING IRONS

Ungar No.	Description	Net Each
100	1/8″ adapter for thread-in tiplets	$0.26
101	3/16″ adapter for thread-in tips	.26
127-S	27 W heating element assembly	3.25
135-S	35 W heating element assembly	3.25
145-S	45 W heating element assembly	3.25
129	Heat reflector	.25
130	Threaded body for heating element	2.08
136	Handle and cord set assembly	3.25

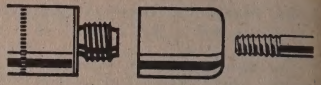
INTERCHANGEABLE TIPS FOR SOLDERING AND DESOLDERING

(SEE PRECEDING PAGE FOR ILLUSTRATIONS AND PRICING)

The following 1/4″ Standard Line thread-on tips fit directly on the metal body: PL-111, 111, PL-114, PL-113, 113, PL-116, 116, PL-133, 133.

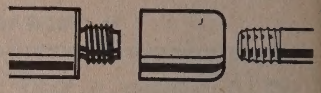


The following 1/8″ Standard Line thread-in tiplets may be used with No. 100 special alloy adapter: PL-331, 331, PL-332, PL-333, 333, 7155, PL-338, PL-340, 7062, 7154.



The following 1/8″ Princess nibs may be used with No. 100 special alloy adapter: 6950, 6960, 6951, 6961, 6952, 6962, 6953, 6963.

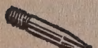
The following 3/16″ Standard Line thread-in tips may be used with No. 101 special alloy adapter: PL-823, 823, PL-824, 824, PL-833 and PL-834.



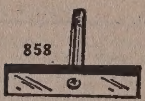
The following de-soldering tips may be used with Model 145, 45-watt iron: using No. 100 1/8″ adapter—6948, 6943, 6944, 6945, 6946, 6947; using No. 101 3/16″ adapter—857, 854, 855, 856, 858.

STANDARD AND 3-WIRE IRON ACCESSORIES

DE-SOLDERING TIPS



857



858

Removes components 70% faster than ordinary soldering iron tips. Melts solder on all terminals simultaneously. Avoids lug breakage, shorting and PC board rupturing. Use with 4045 heating unit; also may be used with No. 145 3-wire iron using 1/8″ or 3/16″ adapters.

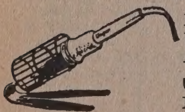
Ungar No.	Tip Type	Size, In. O.D. x L.	Net Each, Lots of		
			1-9	10-99	100 Up
857	Slotted	1″ x 3/16″	$1.05	$0.86	$0.78
858	Bar	1½″ x 3/8″	1.05	.86	.78

UNGAR SOLDER-OFF BULB

Desoldering bulb with TFE tip facilitates accurate printed circuit soldering and cleaning. May be used with "Imperial" and "Standard Line" soldering irons. (Not illustrated.)

Ungar No. 7805 Solder-Off Bulb—Net Each, 1–9 . . . . **$1.60**
Net Each, 10–99 . . . . **$1.30**; 100 Up **1.20**

SOLDERING IRON HOLDER



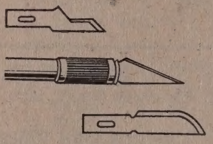
Protects operator from burns; prevents iron breakage. Use with Ungar 776 or 777 handle. Attaches easily to bench; angle adjustable.

Ungar No. 8000 Holder—Net Ea., 1–9 . **$2.40**
Net Each, 10–99 . . **$1.95**; 100 Up . . **1.80**

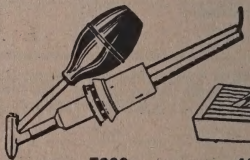
KLEEN-TIP SPONGE

Specially processed sponge provides the surest way to clean soldering tips. Removes oxidation, prevents contamination and insures soldering reliability. Phenolic tray. Fastens to bench.

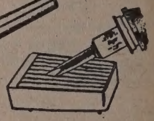
Ungar No. 400—Net Each, 1–9 . . . . **$1.40**
Net Each, 10–99 . . . . **$1.15**; 100 Up **1.05**
Ungar No. 455 Refill Sponge—Individually packaged.
Net Each, 1–9 . . . **$0.56**; 10–99 . . . **$0.46**; 100 Up . . . **$0.42**



7910



7800



400, 455

MODEL 7910 HOT KNIFE ATTACHMENT

Cuts and seals synthetics, vinyl film, styrofoam and other plastics. Easily cuts coatings on PC boards. Consists of collet holder and three tempered steel blades. For use with Nos. 537, 1237 and 4037 heating units and with Ungar 3-wire irons Nos. 127, 135 and 145.

Ungar No. 7910 Hot Knife Attachment—Net Each, 1–9 . . **$1.55**
Net Each, 10–99 . . . . **$1.25**; 100 Up **1.20**

MODEL 7825 DE-SOLDERING ATTACHMENT

Melts and removes solder in one operation. Vacuum action lifts solder from board. For use with No. 4037 heating unit; also Nos. 127, 135 and 145 Ungar 3-wire irons. Handle, heating unit not included.

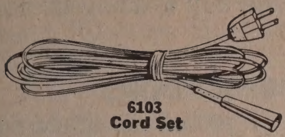
Ungar Model 7825 De-Soldering Attachment—
Net Each, 1–9 . . . **$9.90**; 10–99 . . . **$8.50**; 100 Up . . . **$7.70**

HOT-VAC DESOLDERING, CLEANING TOOL

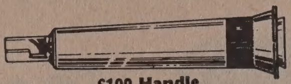
For printed circuit desoldering and cleaning; also for heat shrinkable tubing. Tip uses coating to prevent solder clogging the orifice. For use with Model 777 handle.

Ungar Model 7800 Hot-Vac Tool—Net Each, 1–9 . . . . . **$14.25**
Net Each, 10–99 . . . . **$11.70**; 100 Up **10.70**
Ungar Model 7806—Replacement tip for above; .057″ dia. hole.
Net Each, 1–9 . . . **$0.96**; 10–99 . . . **$0.79**; 100 Up . . . **$0.73**
Ungar Model 7812—Same as above, but .033″ dia. hole.
Net Each, 1–9 . . . **$1.35**; 10–99 . . . **$1.10**; 100 Up . . . **$1.01**

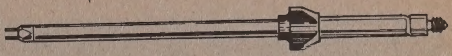
Ungar® / Imperial® Soldering Tools



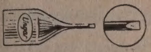
6103
Cord Set



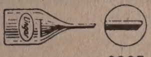
6100 Handle



6200, 6201, 6202 and 6203 Heat Cartridges



6304



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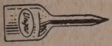
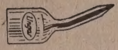


6312
6313



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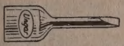

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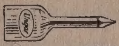
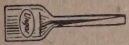
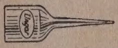
6319



6324
6325



6331
6481



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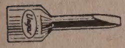

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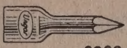

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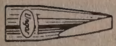
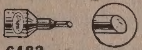
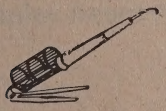


6473



6482

SAFETY-GUARD HOLDER



Ungar No. 6800—Designed especially for Imperial and 3-wire irons. Protects against hot tip burns or handle damage. Attaches to top or underside of bench. Black with gold cage guard. Net Each, 1–9. . **$2.45** 10–99. **$2.00;** 100 Up. **1.76**

ANTI-SEIZE

Special lubricant lengthens tip and heating unit life. For use with Princess, Imperial, 3-Wire and "Standard Line" tools. Reduces thread seizure. Improves heat transfer.
Ungar No. 8001—½ oz. tube. Net Each, 1–9. . . . . **$0.95** 10–99. **$0.80;** 100 Up. **.70**

Interchangeable cord sets, tips and heat cartridges ideal for critical micro-miniature components. Reliable, low wattage, high temperature performance. Perma-Cool handle has double cushion of air combined to 5 heat-transition surfaces for continuous cooling. Components individually packaged on cards; assemble to suit your needs. **Not interchangeable with "Standard Line".**

PERMA-COOL COLORED HANDLE

Cool, pastel turquoise handle has been proven to reduce operator fatigue. Virtually indestructable, handle is made of high strength plastic resin. Diecast heat sink built-in. Pencil type design for easy handling. UL Listed. Size, 0.8″ O.D. at grip; 4.7″ lg. Weight, 1 oz.
Ungar No. 6100—Handle only. Net Each, 1–9. . . . **$2.00;** 10–99. . . . **$1.65;** 100 Up. . . . **$1.50**

INTERCHANGEABLE CORD SETS

Instantly adapts your iron to any 2 or 3 wire outlet. Molded female connector plugs onto the Perma-Cool handle without tools. Vinyl-covered cord, 18 gauge, 65 strands extra-flexible copper; terminals and connectors molded polyvinyl chloride. Center conductor (3-wire type) is insulated with green polyvinyl. Weight: 2½ oz., 2-wire; 4 oz., 3-wire. Supplied in turquoise color only.

Ungar No.	Description	Net Each, Lots of		
		1-9	10-99	100 Up
6102	Standard 2-wire cord set with plug	$2.90	$2.20	$1.75
6103	3-wire cord set with NEMA plug	4.25	3.45	3.20

INTERCHANGEABLE LONG-LIFE HEAT CARTRIDGES

Stainless steel, sealed cartridge with element at tip and threaded end for quick tip changes; keeps heat at tip where it belongs. Six ratings available: **6200:** 45 watts for 750-950° F; accepts all tip Nos. 6304 through 6482. Size, 7½″ l. x .363″ dia. (2½″ l. from flange). Wt., 1.1 oz. **6201:** Same, but 35 watts for 650–850° F. **6202:** Same, but 25 watts for 600–800° F. **6203:** 55 watts for heat range, 850° to 1150° F. Accepts all iron clad gold-plated tips.

Ungar Number	Rated Watts	Net Each, Lots of			Ungar Number	Rated Watts	Net Each, Lots of		
		1-9	10-99	100 Up			1-9	10-99	100 Up
6200	45	$5.35	$4.35	$4.05	6202	25	$5.35	$4.35	$4.05
6201	35	5.35	4.35	4.05	6203	55	6.35	5.15	4.75

THREAD-ON SOLDERING TIPS

Completely interchangeable with the Imperial line (NOT interchangeable with Ungar "Standard Line"). Thread onto heat cartridge (either 25, 35, 45 or 55 watt models) with fingertip ease. Copper alloy or long life, 24 kt. gold-plated iron clad types.

MINI-TIP® FOR 6200, 6201, 6202 OR 6203 HEAT CARTRIDGES

Ungar No.	Shape	Material	Size, In. O.D. x L.	Temp. (°F)*With Cartridge Rated			Net Each, Lots of		
				25 W	35 W	45 W	1-9	10-99	100 Up
6304	Micro-chisel	Iron clad	3/64 x ½	750	800	890	$1.40	$1.13	$1.05
6305	Micro-spade	Iron clad	3/64 x ½	750	800	890	1.40	1.13	1.05
6312	Pencil	Copper	⅛ x ¾	750	800	910	.61	.50	.46
6313	Pencil	Iron clad	⅛ x ¾	690	750	860	1.40	1.13	1.05
6316	Offset pencil	Iron clad	⅛ x ¾	690	750	860	1.40	1.13	1.05
6318	Long taper chisel	Copper	⅛ x ¾	750	800	890	.61	.50	.46
6319	Long taper chisel	Iron clad	⅛ x ¾	690	750	860	1.40	1.13	1.05
6324	Long taper pyramid	Copper	⅛ x ¾	750	800	890	.61	.50	.46
6325	Long taper pyramid	Iron clad	⅛ x ¾	690	750	860	1.40	1.13	1.05
6331	Screwdriver	Iron clad	⅛ x ¾	690	750	860	1.40	1.13	1.05
6333	Needle	Iron clad	⅛ x ¾	690	750	860	1.40	1.13	1.05
6366	Long taper chisel	Iron clad	3/16 x ¾	680	730	850	1.65	1.33	1.23
6368	Long taper pyramid	Copper	3/16 x ¾	.....	.....	.....	.75	.61	.56
6473	Long taper chisel	Copper	⅜ x ¾	.....	.....	.....	.75	.61	.56
6481	Tapered screwdriver	Iron clad	¾ x 5/32	690	750	860	1.40	1.13	1.05
6482	Micro-spade	Iron clad	3/64 x ½	700	770	860	1.40	1.13	1.05

*Slight variation in line voltage will give ±25° F deviation.

IMPERIAL COMPLETE SOLDERING IRON

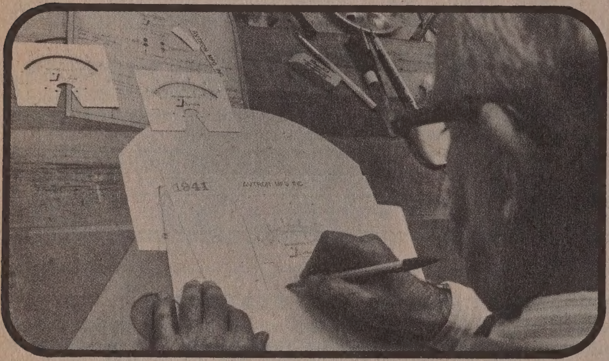
Ungar No. 6010—Includes one 6100 handle, one 6102 cord set, one 6200 heat cartridge and 6318, 6368, and 6473 Mini-Tips. Net Each, 1–9. . . . . . . **$10.50;** 10–99. . . . . . . **$8.40;** 100 Up. **$7.90**

Pioneer/Instrumentation

You receive the extras in service from Pioneer/Instrumentation. Whether for single units or large quantities, standard models or special instrumentation, we can quickly fill your requirements.

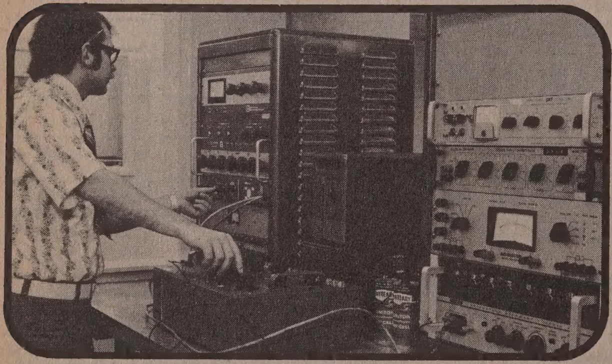
MODIFICATIONS

Modifications of panel, switchboard, and digital instruments, to your specifications, in single lot to OEM quantities are a feature of our Laboratories. Delivery on special meters is normally three days to three weeks.



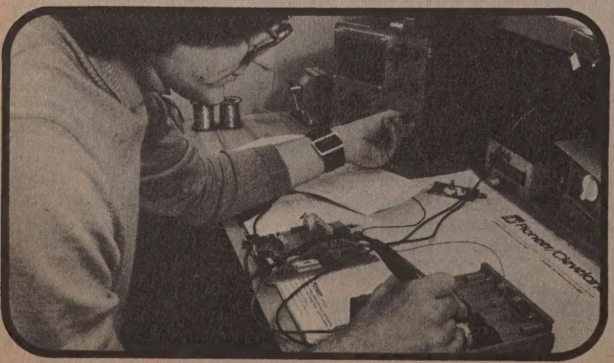
CUSTOM DIALS

Precise hand-drawn dials are used for small quantity meter modifications. Tight accuracies, color bars, dual arcs and special captions are standard services.



CALIBRATIONS

Our instrument calibration test reports are accepted by all government services. Delivery is from three to five days, or for out-of-town customers, one day on appointment. Standard cells require three weeks, due to temperature stabilization and a series of readings to establish mean value.



REPAIRS

Repair services are available for all our lines. We are the authorized sales service center, warranty repair station and parts distributor for Weston, Triplett, Simpson, Rustrak, General Electric, API/LFE, and Amprobe. All non-digital repair work is fully estimated in writing before proceeding.

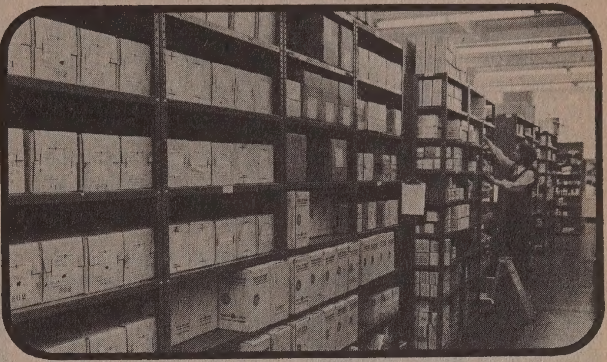
THESE SERVICES ARE AVAILABLE AT BOTH CLEVELAND AND DAYTON LABS

Pioneer/Instrumentation

n stock at Cleveland and Dayton Laboratories: Panel and switchboard meters, instruments and accessories from Airpax, Amprobe, API/LFE, General Electric, Jewell, Pioneer, Rustrak, Simpson, TransData, Triplett and Weston.

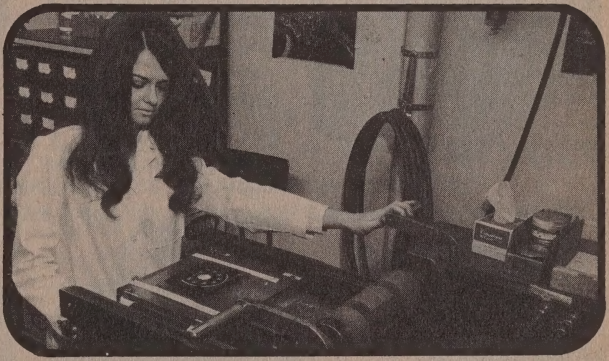
INVENTORY

arge stock of standard meters, both n Cleveland and in Dayton, allows same-day shipping for a variety of nodels. We become your warehouse or obtaining meters from the country's leading manufacturers.



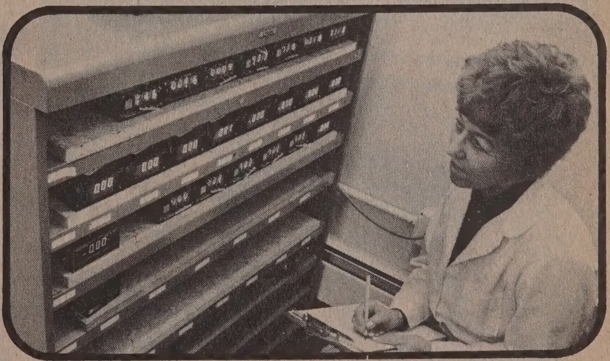
CUSTOM PRINTING

arge quantities of custom dials are orinted or silk screened. Color matching, special logos and symbols are urnished as per your requirements.



INSPECTION

Rigid inspection of all parts and assemblies enables Pioneer/Instrumentation to provide a 1-year warranty on all units, whether standards or specials. Digital panel meters, for nstance, undergo 48-hour burn-in to nsure reliability.



FULL SERVICE

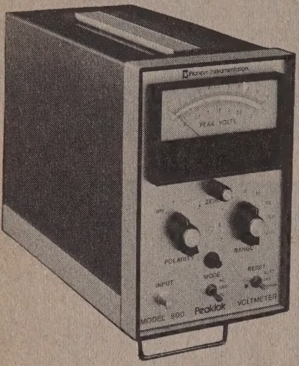
Pioneer/Instrumentation is fully equipped to handle repairs one at a time or in quantities. Highly trained technicians, full complement of spare parts, and special equipment enable us to provide complete service on your instrumentation.

SALES OFFICES IN DETROIT, INDIANAPOLIS AND PITTSBURGH

Peaklok®

PEAK READING STORAGE VOLTMETER

The Peaklok Peak Reading Storage Voltmeter is a precision instrument that measures and holds the maximum value of the voltage appearing at the input. The frequency response is such that the instrument will record the peak level of voltage signals from DC to a single, non-recurring transient pulse having a duration of one microsecond or longer. The instrument has no recovery time requirement; that is, it will record the maximum amplitude of any signal regardless of the repetition rate of the signal. The Visual Output and an Electronic Analog Output are maintained until reset is performed either remotely, automatically, or manually by front panel switch.


Pioneer/Instrumentation
PEAK VOLTS
POLARITY
RANGE
INPUT
MODE
RESET
MODEL 800
Peaklok
VOLTMETER

MODEL 800 PEAKLOK
ANALOG DISPLAY
$850.00

RANGE: Nine ranges from 100 mV to 1000 VDC or VAC to 1 MHz

ACCURACY: ±1% electronic output; ±2% visual display

RESPONSE TIME: Rated accuracy at 1 μsec

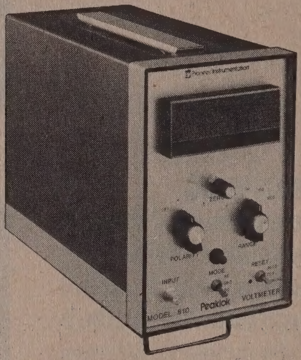
IMPEDANCE: 1 meg

POLARITY: +, −, or ±

OUTPUT: 0 to 5 VDC at 2 mA

DIMENSIONS: 5.5″ w. x 12.5″ d. x 8.25″ h.

WEIGHT: 8.5 lbs.


Pioneer/Instrumentation
POLARITY
RANGE
INPUT
MODE
RESET
MODEL 810
Peaklok
VOLTMETER

MODEL 810 PEAKLOK
DIGITAL DISPLAY
$1190.00

RANGE: Five ranges from 100 mV to 1000 VDC or VAC to 1 MHz

ACCURACY: ±1% electronic output; ±2% visual display

RESPONSE TIME: Rated accuracy at 1 μsec

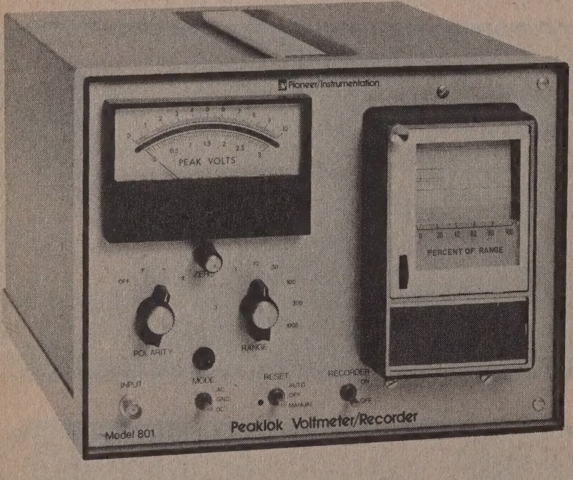
IMPEDANCE: 1 meg

POLARITY: +, −, or ±

OUTPUT: 0 to 5 VDC at 2 mA

DIMENSIONS: 5.5″ w. x 12.5″ d. x 8.25″ h.

WEIGHT: 8.5 lbs.


Pioneer/Instrumentation
PEAK VOLTS
PERCENT OF RANGE
ZERO
POLARITY
RANGE
INPUT
MODE
RESET
AUTO
OFF
MANUAL
RECORDER
ON
OFF
Model 801
Peaklok Voltmeter/Recorder

RANGE: 9 ranges from 100 mV to 1000 VDC or VAC to 1 MHz

ACCURACY: ±1% electronic output; ±2% visual display

RESPONSE TIME: Rated accuracy at 1 μsec

IMPEDANCE: 1 megohm

POLARITY SELECTION: +, −, or ±

ELECTRONIC OUTPUT: 0 to 5 VDC at 2 mA

CHART SPEEDS: ½ inch per hour to 4 inches per minute (specify when ordering)

DIMENSIONS: 11.0″ w. x 12.5″ d. x 8.25″ h.

WEIGHT: 13.5 lbs.

MODEL 801 PEAKLOK
ANALOG DISPLAY WITH RECORDER
$1175.00

Engineering and production facilities are available for the design and assembly of your custom instrument or control system. Contact Pioneer/Instrumentation for assistance on your specific requirements.

SPECIAL INSPECTION SYSTEMS • CUSTOM CONTROL SYSTEMS • PROPRIETARY DESIGNS
SPECIAL CIRCUIT DESIGNS • MEASUREMENT SYSTEMS

Quik-E VOLTAGE CALIBRATOR

Battery powered portable voltage standard provides short-circuit-proof, fixed outputs of 10 VDC, VDC, 100 mVDC at ±0.05% accuracy and 10 mVDC at ±0.1%. All accuracies guaranteed over a temperature range of 15 to 35° C. The unit is useful for checking accuracy of most voltage sensing or measuring equipment.

Quik-E calibrator
EXT. PWR. 18VDC
ON
PUSH
BAT. PWR.
MODEL 450A
10V
1V
100mV
10mV
COMMON
Pioneer Instrumentation

POWER REQUIRED: Self-contained batteries—2 Mallory MN1604 alkaline cells, 9 VDC or equivalent (included), or external 15 to 20 VDC supply at approximately 15 mA

DIMENSIONS: 3.5″ w. x 2.0″ d. x 6.0″ h.

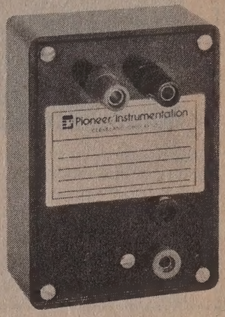
WEIGHT: Approximately 16 oz. with batteries

MODEL 450A
QUIK-E $99.00

Model PS45—Adapter for 110 VAC line operation (not illustrated). Net Each................**$25.00**

ELECTRONIC STANDARD CELL

The Electronic Standard Cell is a replacement for unsaturated standard cells as an accurate, stable voltage source. The solid state electronic circuitry provides numerous advantages over the conventional unsaturated chemical cell. The Model 500 is portable and can be moved from place to place without degradation of specifications and has an indefinite life. Applications include uses as volt standard for potentiometric measuring devices, secondary lab standard, and replacement of unsaturated chemical standard cells.



OUTPUT VOLTAGE: 1.01900 VDC

ACCURACY: ±0.01%

TEMPERATURE STABILITY: 5 ppm/° C typical

OUTPUT RESISTANCE: 425 ohms typical

LONG TERM STABILITY: 30 ppm/year typical

VOLTAGE REQUIRED: Nominal 15 VDC (13.5 to 19 VDC)

DIMENSIONS: 3.0″ w. x 1.5″ d. x 4.0″ h.

WEIGHT: Approx. 5 oz.

MODEL 500 $119.50

Model PS45—Adapter for 110 VAC line operation (not illustrated). Net Each...............................**$25.00**

Magsense®
CURRENT COMPARATORS AND VOLTAGE COMPARATORS

HIGH SENSITIVITY • SOLID STATE RELIABILITY • VARIABLE HYSTERESIS

MAGSENSE® INPUT-ISOLATED CURRENT COMPARATORS

MODEL 70 MAGSENSE CURRENT COMPARATOR

Input Range	Input Ohms	Hysteresis	Power Required	Type Output	Net Each
-20 μA	2300	0.6 μA	+12 VDC	Latching, Non-latch, or Pulse	$71.00
-100 μA	105	3.0 μA	+12 VDC		66.00
-1 mA	2	30.0 μA	+12 VDC		66.00
-10 mA	1	0.3 mA	+12 VDC		66.00
-100 mA	1	3.0 mA	+12 VDC		66.00

MODEL 77 MAGSENSE DUAL SET-POINT COMPARATOR

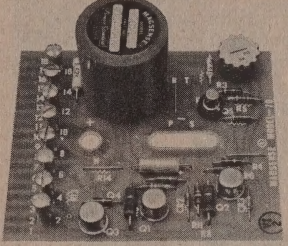
Input Range	Input Ohms	Hysteresis	Power Required	Type Output	Net Each
-20 μA	4600	0.6 μA	+12 VDC ±10%	Non-latch	$138.00
-100 μA	210	3.0 μA			108.00
-1 mA	5	30.03μA			108.00
-10 mA	1	0.3 mA			108.00
-100 mA	1	3.0 mA			108.00

MODEL 80 MAGSENSE FIXED SET-POINT COMPARATOR

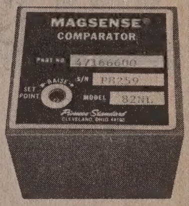
Input Range	Input Ohms	Hysteresis	Power Required	Type Output	Net Each
-100 μA	105	3.0 μA or less	+28 VDC ±10%	Latching or Non-latch	$125.00

MODEL 82 MAGSENSE ADJUSTABLE SET-POINT COMPARATOR

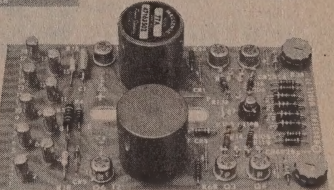
Input Range	Input Ohms	Hysteresis	Power Required	Type Output	Net Each
-100μA	105	3.0 μA or less	+28 VDC ±10%	Latching or Non-latch (SPDT Action)	$220.00



Model 70



Models 80, 82



Model 77

NON-ISOLATED VOLTAGE COMPARATORS

MODEL 32 VOLTAGE COMPARATOR

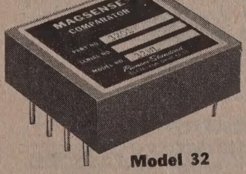
Input Range	Input Ohms	Hysteresis	Power Required	Type Output	Net Each
0-1 VDC	Greater than 1 megohm	Less than 2%	±15 VDC nominal	Latching or Non-latch	$35.00

MODEL 33 VOLTAGE COMPARATOR

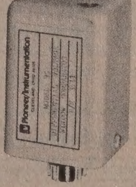
Input Range	Input Bias Current	Hysteresis	Power Required	Type Output	Net Each
0-+5 VDC	.1 nA typical	4 mV typical	+10 to +18 VDC	Latching or Non-latch	$45.00

MODEL 34/35 DIFFERENTIAL COMPARATOR

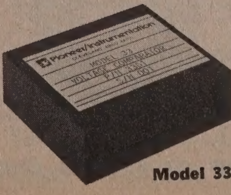
Input Range	Diff. Voltage Range	Input Resistance	Power Required	Number of Outputs and Types	Net Each
±24VDC	±5 VDC or +5 VDC	20K ohms	±12 VDC to ±18 VDC	(3) High/Go/Low (2) Go/No-Go (1) Go (1) No-Go	Prices on Request



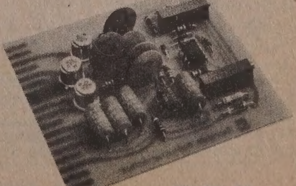
Model 32



Model 35



Model 33

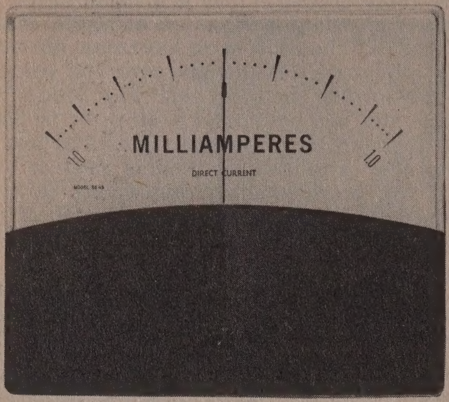


Model 34

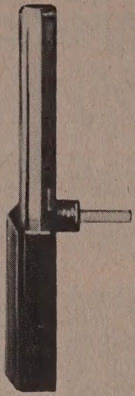
AIRPAX™ CONTROLS DIVISION

parkermeter

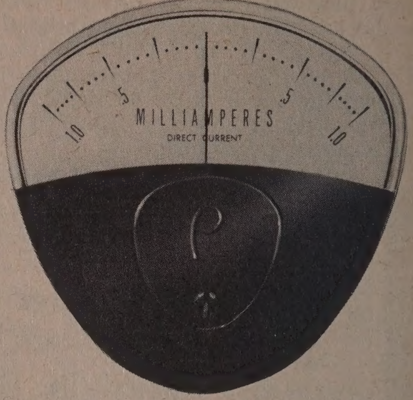
THE INDUSTRY'S ONLY "TRUE" FLUSH-MOUNT METER



Series SB



Side View



Series S

SERIES SB AND SERIES S PANEL METERS

Series SB rectangular shaped panel meters employ the "parkermeter" universal movement and are available in 2½", 3½" and 4½" widths. Only ⅝" thick, with no protruding barrel, they are the industry's only "true" flush-mount meters. They mount directly to the panel surface with two studs. Mirror scales and knife-edge pointers are available at nominal extra cost. Series S panel meters are identical to Series SB except for their unique medallion shape. Available in 2½" and 3½" widths.

Ultra-thin
Ultra-rugged
METER MOVEMENT

All Airpax "parkermeters" utilize this universal meter movement. Compact design measuring only 1½" dia. x 7/16" thin makes it ideal for a wide range of meter and display applications. Patented construction utilizes an etched circuit wafer coil 12 mils thick, and non-magnetic, low-in-friction, Niva alloy pivots with sapphire bearings. Typically resistant to shocks up to 240G's and overloads of more than 1000%, the movement is virtually indestructible.

STANDARD SPECIFICATIONS

Standard Specifications	DC Meters	AC Meters
Electrical accuracy	±2%	±3%
Linearity	±2%	....
Repeatability	±1%	±1%
Balance	±0.5%	±0.5%
Friction, 2 mA and above	±0.5%	±0.5%
Damping factor	10–90	10–90
Response time	2 sec	2 sec
Sustained overload tol., % full scale	10,000%*	10,000%*
Momentary overload tol., % full scale	25,000%*	25,000%*
Voltmeter sensitivity	500 ohms/V	500 ohms/V

*For movements only, up to 500 mA max. If rectifiers or resistors are in the circuit, reduce rating by 200%.

RANGES AND PRICE SCHEDULE

Range	Approx. Resistance, Ohms	Airpax Part No., Net Each Model		
		S25 or SB25	S35 or SB35	SB45
DC MICROAMMETERS				
500–0–500	350	$24.25	$24.80	$25.50
DC MILLIAMMETERS				
0–1	350	$23.75	$24.25	$24.80
0–50	3	23.75	24.25	24.80
0–200	0.20	23.75	24.25	24.80
0–500	0.08	23.75	24.25	24.80
DC AMMETERS				
0–1*	0.04	$23.75	$24.25	$24.80
0–15*	0.0003	23.75	24.25	24.80
0–25†	10	23.75	24.25	24.80
0–500†	10	23.75	24.25	24.80
*Self-contained. †Require external 50 mV shunts.				
DC MILLIVOLTMETERS				
0–50	5	$23.75	$24.25	$24.80
0–100	10	23.75	24.25	24.80
DC VOLTMETERS				
0–5	500	$23.75	$24.25	$24.80
0–50	500	23.75	24.25	24.80
0–200	500	23.75	24.25	24.80
0–500	1000	24.25	24.80	25.50
AC MILLIAMMETERS				
0–100	10	....	$28.75	$29.25
0–500	2	....	28.75	29.25
AC AMMETERS				
0–1	1	....	$28.75	$29.25
0–50*	1	....	28.75	29.25
0–100*	1	....	28.75	29.25
*Ranges above 1 amp AC require external current transformer.				
AC VOLTMETERS				
0–10	500	....	$27.50	$28.00
0–50	500	....	27.50	28.00
0–300	1000	....	28.00	28.75
0–500	1000	....	28.00	28.75

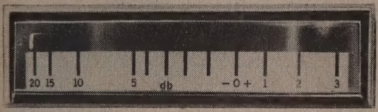
FULL LISTING OF RANGES AND PRICES AVAILABLE ON REQUEST

Full Modification Services for Parkermeters

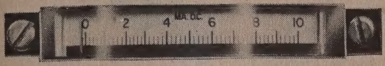
EDGE-READING INDICATING METERS

0
2
4
MA DC
8
10

Series E15



Series E35



Series E30

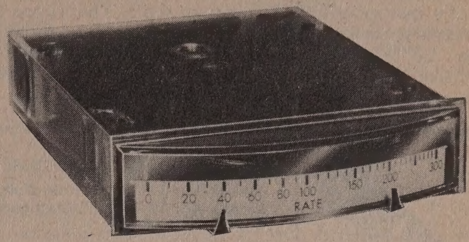
10
8
6
2
MA DC
2
4
6
8
10

Series E45

SERIES E15, E25, E30, E35 AND E45 EDGE-READING INDICATING METERS

Series E15, E30 and E45 edge-reading indicating meters employ the same universal meter movement as Airpax panel meters. The compact meter movement measures only 1½″ dia. x 7⁄16″ thin; its patented construction utilizes an etched circuit wafer coil 12 mils thick and non-magnetic, low-infriction Niva alloy pivots with sapphire bearings. The movement resists shocks up to 240G's and overloads of more than 1000%. Series E edge-reading indicating meters stack on ½″ centers and are unrivaled for high density applications in limited panel space. They are also available as modules. Series E25 (not illustrated) and Series E35 meters are recommended when requirements call for a wider scale. Series E35 meter is a companion to Series ER35 control meter. All Series E meters are constructed of a two-piece case of lightweight, flame-retardant plastic. Series E25 and E30 are available also as ruggedized, illuminated models under Series No. EI25 and Series No. EMI30. Prices for these two models available on request.

CONTROL METERS



SERIES ER35

- **Control point accuracy: ±1% FS**
- **Repeatability: ±1.3% FS**

Series ER35 control meters also use the same universal meter movement as Airpax panel meters and edge-reading indicating meters with the addition of coil-disc extensions that function as shutters interrupting a light beam that initiates control action. Series ER35 control meters are available with one or two set-points providing a choice of 4 control configurations. Positive, contactless, solid state switching and custom scales and pointers are featured. Prices available on request.

RANGES AND PRICE SCHEDULE

DC MICROAMMETERS

Range	Approx. Resis., Ohms	Airpax Part No., Net Each Model E15	E25	E30	E35	E45
500–0–500	350*	$30.35	$57.00	$31.00	$25.50	$36.00

*E45-800.

DC MILLIAMMETERS

0–1	350*	$29.35	$56.00	$30.00	$24.50	$35.00
0–50	3	29.35	56.00	30.00	24.50	35.00
0–200	0.20	29.35	56.00	30.00	24.50	35.00
0–500	0.08	29.35	56.00	30.00	24.50	35.00

*E45-800.

DC AMMETERS

0–1*	0.04	....	$56.00	$30.00	$24.50	$35.00
0–15*	0.003	....	56.00	30.00	24.50	35.00
0–25†	10	$29.35	56.00	30.00	24.50	35.00
0–500†	10	29.35	56.00	30.00	24.50	35.00

*Self-contained. †Require external 50 mV shunts.

DC MILLIVOLTMETERS

0–50	5	$29.35	$56.00	$30.00	$24.50	$35.00
0–100	10	29.35	56.00	30.00	24.50	35.00

DC VOLTMETERS

0–5	500	$29.35	$56.00	$30.00	$24.50	$35.00
0–50	500	29.35	56.00	30.00	24.50	35.00
0–200	500	29.35	56.00	30.00	24.50	35.00
0–500	1000	30.35	57.00	31.00	25.50	36.00

AC MILLIAMMETERS

0–100	10	....	$61.00	$35.00	$28.50	$40.00
0–500	2	....	61.00	35.00	28.50	40.00

AC AMMETERS

0–1	1	....	$61.00	$35.00	$28.50	$40.00
0–50*	1	....	61.00	35.00	28.50	40.00
0–100*	1	....	61.00	35.00	28.50	40.00

*Ranges above 1 amp AC require external current transformer.

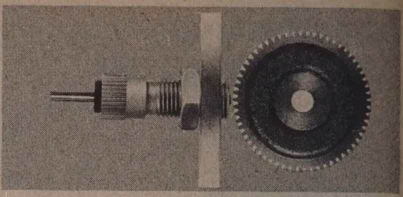
AC VOLTMETERS

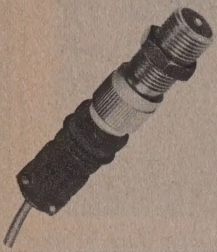
0–10	500	....	$61.00	$35.00	$28.50	$40.00
0–50	500	....	61.00	35.00	28.50	40.00
0–300	1000	....	62.00	36.00	29.50	41.00
0–500	1000	....	62.00	36.00	29.50	41.00

FULL LISTING OF RANGES AND PRICES AVAILABLE ON REQUEST

AIRPAX™ CONTROLS DIVISION Magnetic Pickups

Airpax magnetic pickups convert mechanical motion to an AC voltage without mechanical linkage. These permanent magnet transducers have an external magnetic field, which, when altered by a moving ferrous object, generates an AC voltage in a coil wound over the magnet. This AC voltage has a frequency directly proportional to rpm when the pickup is mounted in proximity to the teeth of a gear mounted to a rotating shaft. The Airpax line of pickups is most complete and encompasses standard and special types for a vast span of conditions. Ask for Airpax General Catalog 0200 for information on complete pickup line. Should your requirement be unique, Airpax engineers would like the opportunity of assisting you with the problem.


Typical magnetic pickup mounting



GENERAL PURPOSE

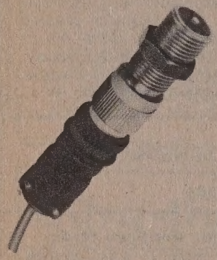
Airpax No. 1-0001 Pickup Only.
Airpax No. 11-0001 Pickup and Cable Assembly.

Output Voltage: 30–70 V (P-P).
DC Resistance: 100–130 ohms.
Typical Inductance: 32–47 mH.
Output Polarity: Pin "B" positive.
Oper. Temp.: −100° to +225° F.
Lead Lgth.: 10 ft. shielded cable.
Mounting Thread: ⅝-18 UNF-2A.

POWER PICKUP

Airpax No. 1-0028 Pickup Only.
Airpax No. 11-0028 Pickup and Cable Assembly.

Output Voltage: 75–135 V (P-P).
DC Resistance: 170–210 ohms.
Typical Inductance: 50–95 mH.
Output Polarity: Pin "B" positive.
Oper. Temp.: −100° to +225° F.
Lead Lgth.: 10 ft. shielded cable.
Mounting Thread: ⅝-18 UNF-2A.



GENERAL PURPOSE HIGH SENSITIVITY

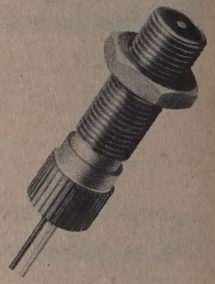
Airpax No. 1-0002 Pickup Only.
Airpax No. 11-0002 Pickup and Cable Assembly.

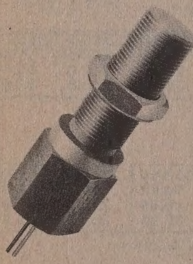
Output Voltage: 138–290 V (P-P).
DC Resistance: 1190–1450 ohms.
Typical Inductance: 400–605 mH.
Output Polarity: Pin "B" positive.
Oper. Temp.: −100° to +225° F.
Lead Lgth.: 10 ft. shielded cable.
Mounting Thread: ⅝-18 UNF-2A.

MINIATURE, HIGH SENSITIVITY

Airpax No. 1-0032 Complete Assembly.

Output Voltage: 35–85 V (P-P).
DC Resistance: 575–705 ohms.
Typical Inductance: 165–250 mH.
Output Polarity: White lead positive.
Oper. Temp.: −100° to −225° F.
Lead Lgth.: Two 6" #26 AWG Teflon® leads.
Mounting Thread: ⅜-24 UNF-2A.





UL LISTED EXPLOSION-PROOF

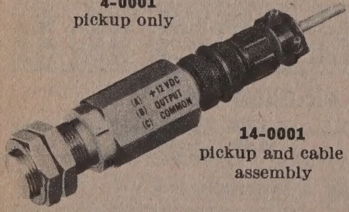
Airpax No. 1-0005 Complete Assembly—UL Listed.

Output Voltage: 57–107 V (P-P).
DC Resistance: 185–225 ohms.
Typical Inductance: 63–91 mH.
Output Polarity: White lead positive.
Oper. Temp.: −100° to +200° F.
Lead Lgth.: Two 18" #18 AWG leads.
Mounting Thread: ¾-20 UNEF-2A.
Hazardous Location: Class 1, Group D.

PRICE SCHEDULE

Airpax Number	Description	Net Each
1-0001	Pickup only, general purpose	$17.60
11-0001	Pickup and cable assembly, general purpose	27.60
1-0002	Pickup only, general purpose, high sensitivity	17.60
11-0002	Pickup and cable assembly, general purpose, high sensitivity	27.60
1-0005	Complete assembly, explosion proof	80.00
1-0028	Pickup only, power pickup	22.00
11-0028	Pickup and cable assembly, power pickup	32.00
1-0032	Complete assembly, miniature, high sensitivity	13.75

ZERO-VELOCITY DIGITAL PICKUPS



4-0001
pickup only

14-0001
pickup and cable assembly

FEATURES:

- Constant amplitude logic pulses at any frequency from DC (zero-velocity) to 10,000 Hz (up to 10,000 rpm with a 60 tooth gear).
- Electronic adjustments are not required.
- Only minor mechanical alignment is required.
- Liberal air gap setting—up to 0.025 inches with 20 pitch gears and up to 0.050 inches with an 8 pitch gear.

SPECIFICATIONS:

Power Supply: 12 ±2 VDC.
Operating Temp.: −25° C to +70° C.
Sensed Frequency: DC to 10,000 Hz.
Output Voltage: Essentially square-wave fanout to 10 TTL inputs, 50 ±10% duty cycle.
Logic 0: ±6 VDC peak max.
Logic 1: ±5 (+0, −1 VDC) peak with load resistance greater than 2K ohms.
Source Impedance: Less than 50 ohms for load resistance greater than 2K ohms; less than 2K ohms for load resistance below 2K ohms.
Short Circuit Output Current: 6 mA peak max. with 12 VDC power supply.
Power Supply Current: 50 mA max., 40 mA typical.
Air Gap: Up to 0.025 with 20 pitch gear; up to 0.050 with 8 pitch gear.
Recommended Gears: 20 D.P. or coarser.
Housing: 303 stainless steel ¾-20-1¼ inch thread, blind end.
Connector: Mates with MS3106A-10SL-3S.

The Airpax Model 4-0001 Zero-Velocity Digital Pickup combines Hall effect principles with solid state circuitry to provide constant amplitude logic pulses from zero to very high speed. The unique feature of these pickups is that the output depends solely on POSITION of the gear tooth, or similar surface, and NOT the VELOCITY at which the surface passes in front of the pickup. Each time a gear tooth passes in front of the pickup, the output voltage switches from zero to a positive 5 volts. After the tooth has passed, the pickup output voltage switches back to zero volts until the next tooth moves into position. The pickup output signals and circuits have been designed to meet all present TTL design standards and are capable of feeding a fanout of up to 10 TTL inputs.

PRICE SCHEDULE

Airpax Number	Description	Net Each
4-0001	Digital pickup only	$57.65
14-0001	Digital pickup and cable assembly	66.50

AIRPAX™ CONTROLS DIVISION PRECISION INDICATING TACHOMETRY

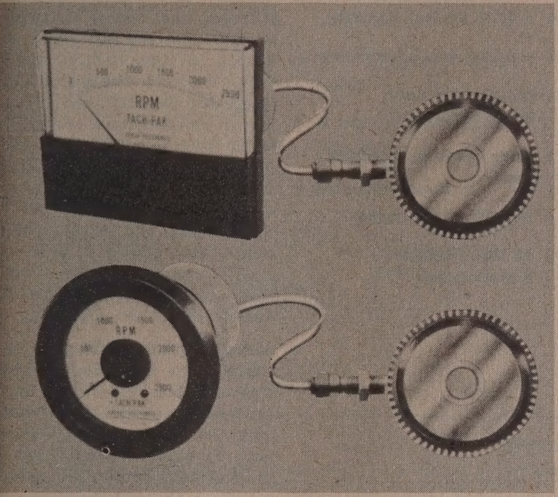
MEASURE . . .

MONITOR . . .

INDICATE . . .

Precision tachometry to measure, monitor or indicate "events-per-unit-time," rotational or linear speed, flow rates, feed rates and production rates. Applications include the following:

- **Machine tools**
- **Textile, paper and plastics machines**
- **Conveyor and process lines**
- **Engines and motors**
- **Automotive and truck engine test stands**
- **Heavy on and off-the-road vehicles**
- **Crane controls**
- **Wire drawing machines**
- **Industrial turbines**
- **Shipboard turbines and compressors**
- **Pipe line flow**
- **Jet engine and motor test stands**
- **Remote power, turbine and compressor stations**



- **Low cost**
- **Complete system, ready to use**
- **Proven industrial design, yet inexpensive**
- **Continuous duty operation with stable output**
- **Latest solid state design**

SERIES 211/311 TACH-PAK® SYSTEMS

Series 211 and 311 Tach-Pak systems provide a simple, low-cost method for measuring the speed of a rotating shaft. Meter scales are available in a variety of standard configurations including a variety of specific speed ranges and % speed scales. Each Tach-Pak system is supplied complete with a panel mount Tach-Pak and meter assembly, magnetic pickup and 60-tooth gear. The use of a magnetic pickup device permits monitoring of rotational or cyclic motion without direct coupling and with minimum usage of axial shaft space.

SPECIFICATIONS

Accuracy: Series 211, ±2% of full scale; Series 311, ±3% of full scale, including meter error plus the effect of line voltage variation.

Line Voltage Variation Effect: 0.5% maximum with ±10% line voltage change.

Input Impedance: 500 ohms.

AC Power Input: 120 VAC, ±10%, 60 Hz, 2 W. Available in 12 VDC or 24 VDC.

Temperature Range: −20° F to +120° F.

Temperature Coefficient: 0.025%/° F.

Gear Pitch: When other than the Airpax gear is used, it is recommended that an 8 pitch to 16 pitch gear be used.

HOW TO ORDER

To order, specify Series 211 or Series 311 Tach-Pak system. Also specify meter scale and full scale input frequency.

PRICE SCHEDULE

Airpax No. Series 211 Tach-Pak System—Net Each . .	**$ 98.00**
Airpax No. Series 311 Tach-Pak System—Net Each . .	**108.00**

Tach-Pak less gear, deduct **$3.00.**
Tach-Pak less pickup, deduct **$3.00.**
Tach-Pak less gear and pickup, deduct **$6.00.**
Charge for special meter scales, **$40.00.**

PRECISION FREQUENCY GENERATOR

The Airpax Precision Frequency Generator is a small, compact, portable, self-powered frequency generator designed to serve as a convenient source for providing accurate frequencies for test purposes. It transmits a 5 V square-wave output at any one of eleven selectable frequencies, as determined by the frequency selection switch on the front panel. Selectable frequencies obtainable are precise within .01%, or better, and when selected require no checking with a frequency counter. This generator, therefore, can be used as a "frequency standard" for most testing purposes. The unit is powered by a self-contained (standard) six-volt battery. A meter is included on the front panel for periodically checking battery power. Features a battery-off-signal switch which automatically returns to "Off" position when not in use.

Airpax No. 080-140-0001 Frequency Generator—Net . **$160.00**

APPLICATIONS

Frequency Standard: Delivers frequency accurate to 99.99%.

Frequency Calibrator: A source to calibrate frequency-dependent equipment such as tachometers, timers, counters, filters, amplifiers and oscilloscopes.

Frequency Source:
For lab or field troubleshooting and system verification.
For timers.
As a substitute for magnetic or optical transducers to verify the operation of receiving equipment such as tachometers, frequency to DC converters, frequency switches, counters, etc.
As a substitute crystal-controlled oscillator.

SPECIFICATIONS

Frequencies (Eleven Precise Frequencies Available): 5 Hz, 10 Hz, 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 2 kHz, 5 kHz, 10 kHz and 20 kHz.

Amplitude: 5 volt (minimum) square-wave, AC coupled through 50 μF, 500 ohm source impedance.

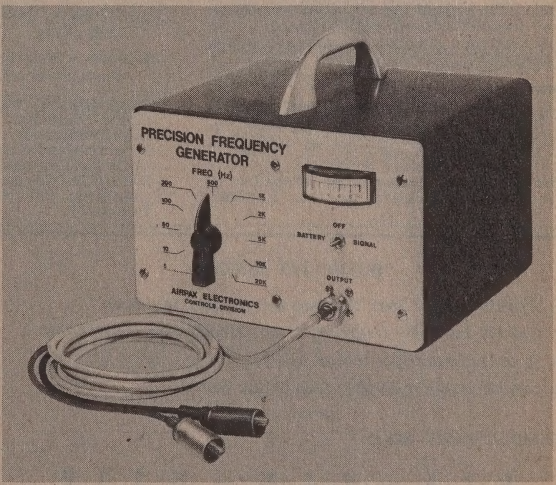
Accuracy: Within ±0.01% of desired frequency.

Temperature Range: 0° to +50° C.

Power: No external power required. Unit internally powered by a 6 volt battery.

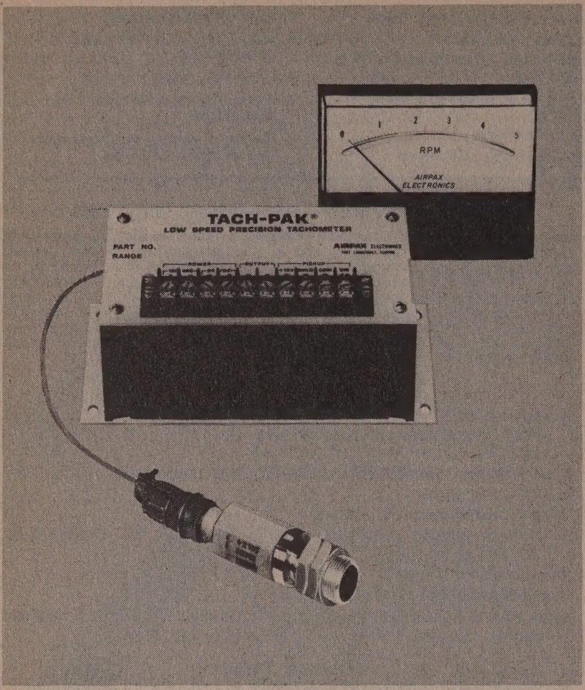
Size: 8⁷⁄₃₂″ w. x 8⅝″ d. x 5⁷⁄₃₂″ h.

Weight: 5.3 lbs.



- **Small, compact, portable**
- **Self-powered (internal battery)**
- **Accurate, less than 0.01% error**
- **Temperature range, 0° to +50° C**
- **Output frequencies: 5 Hz, 10 Hz, 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1kHz, 2 kHz, 5 kHz, 10 kHz, 20 kHz**
- **Low cost**
- **Counter not required for frequency calibration**

AIRPAX™ CONTROLS DIVISION PRECISION INDICATING TACHOMETRY



SERIES 400 LOW-SPEED TACHOMETER

- **All solid state design**
- **Small, compact design**
- **±0.1% typical linearity**
- **±0.25% typical accuracy**
- **Continuous duty, industrial design**
- **Wide range of standard scales**
- **AC/DC power supply**
- **12 VDC auxiliary power output**

The all solid state Series 400 Low-Speed Tachometer is a precision electronic instrument used to measure and control low-speed industrial "events-per-unit time", i.e., rotational or linear speed, flow rates, feed rates and production rates.

Standard and custom metering is available for any desired motion function such as rpm, GPM, FPS, etc. The monolithic integrated circuitry used in the Series 400 produces accurate, stable conversion of variable AC pulse signals to proportional DC signal currents or voltages. A multiple-pole active filter effectively filters, but permits sufficiently fast response, to produce a DC current or voltage meter read-out or control that is useful and steady for the observer.

Series 400 tachometers may be supplied in frequency ranges from 0–3 Hz to 0–15 Hz and are designed specifically for use with Airpax Zero-Velocity Magnetic Pickups to measure and/or control low-speed equipment.

SPECIFICATIONS

Frequency: 0.5 Hz or 0–10 Hz standard (ranges from 0–3 Hz to 0–15 Hz available on request).

Input Signal:

1. 5 volt square wave—either positive or negative going.
2. TTL output (square wave).

*3. TTL output (short duration pulse, 20 microsecond minimum).

*Limited to frequency ranges of 6 Hz to 15 Hz full scale.

Input Impedance: 1000 ohms, minimum.

Linearity: ±0.2% maximum, ±0.1% typical from 10% to 100% of full scale, exclusive of non-linearity in indicating device.

Overall Accuracy: ±0.5%, exclusive of error in indicating device. Typical, ±0.25%.

Output: One of the following:

1. 0–1 mA, delivered to any load up to 5000 ohms.
2. 0–5 mA, delivered to any load up to 1000 ohms.
3. 1–5 mA, delivered to any load up to 1000 ohms.
4. 0–5 volts, delivered to any load above 4000 ohms.
5. 0–10 volts, delivered to any load above 8000 ohms.

Output Ripple: The fundamental output ripple frequency is equal to twice the input frequency. The output is filtered by a three-pole active filter to 1% of full scale peak-to-peak ripple at 10% of full scale input frequency. Output Span Adjustment: ±25% of full scale input frequency.

Temperature Range:
−20° F to +140° F, operating.
−40° F to +165° F, storage.
Typical temp. coefficient is 0.01%/° F.

Filter Response Time: (Step Function)
Rise Time: 3 sec from 10% to 90%, typ.
Settling Time. 5.5 sec from 10% to 98%, typical.

Auxiliary Power Output: 12 VDC ±10% at 50 mA maximum. (For Zero-Velocity pickup).

Power Requirements:

1. 120 VAC ±10% (50 to 400 Hz); 24 VDC ±10%.
2. 240 VAC ±10% (50 to 400 Hz); 24 VDC ±10%.

Other options available include: 240 VAC Power Input; NEMA 1, NEMA 3/12, NEMA 4 and Class 1, Group D enclosures.

HOW TO ORDER

1. Specify Airpax Part No. (see sample part number).
2. Specify full scale frequency if not included in part number.
3. Specify output (see listing below).
4. Specify input frequency (see listing below).

SAMPLE PART NO.:

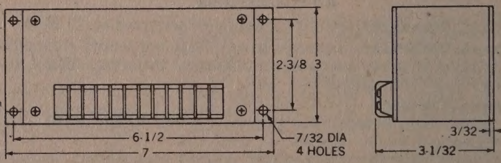
0 7 5 — 4 1 X — X 1 1 0

Specify Output:

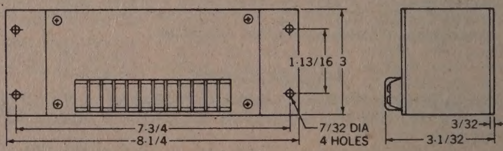
1. 0–1 mADC standard (into 5000 ohms, max.).
2. 0–5 mADC (into 1000 ohms, max.).
3. 1–5 mADC (into 1000 ohms, max.).
4. 0–5 VDC (into 4000 ohms, min.).
5. 0–10 VDC (into 8000 ohms, min.).

Specify Input Frequency:

1. 0–5 Hz.
2. 0–10 Hz.
3. Other.



Standard Mounting



With "B Style" Mounting Adaptor

PRICE SCHEDULE

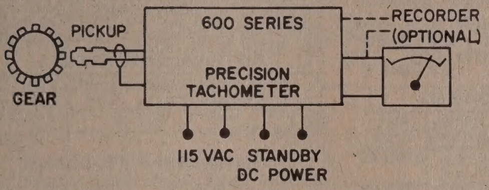
Airpax Series 400 Low-Speed Tachometer—Net Each .	**$158.00**
Airpax Part No. 14-0001 Zero Velocity Pickup—Net . . .	**66.50**

AIRPAX™ CONTROLS DIVISION PRECISION INDICATING TACHOMETRY

SERIES 600 TACH-PAKS®

Solid state Series 600 Tach-Paks are precision electronic tachometers used to measure and control industrial "events-per-unit-time," i.e., rotational or linear speed, flow rates, feed rates and production rates. Standard and custom metering is available for any desired motion function such as rpm, GPM, FPS, etc. The monolithic integrated circuitry used in the Series 600 produces accurate, stable conversion of variable AC pulse signals to proportional DC signal currents or voltages. When used with Airpax magnetic pickups in close proximity to a shaft-mounted gear or other discontinuity, Series 600 Tach-Paks permit conservation of axial shaft space and eliminate the need to direct-couple a speed sensor to the rotating shaft.

- **All solid state design**
- **±0.1% typical linearity**
- **±0.25% typical accuracy**
- **25 mV typical sensitivity**
- **AC or pulse input acceptance**
- **Wide range of standard scales**
- **40 dB common mode rejection**
- **Balanced input**



0
4000
8000
12000
RPM
TACH-PAK®
PRECISION TACHOMETER
PART NO.
RANGE
AIRPAX ELECTRONICS
FORT LAUDERDALE, FLORIDA
1 2 3 4 5 6 7 8 9 10

SPECIFICATIONS

AC Input Frequency Range: Depends on application; up to 40 kHz standard. (100 kHz available.)

AC Input Sensitivity: 50 mV rms, standard; 25 mV rms, typical.

AC Input Sensitivity, Optional: 10 mV rms.

AC Input Voltage Limit, Standard: 25 V rms, maximum.

AC Input Voltage Limit, Optional: 150 V rms, maximum (reduces input sensitivity to 0.5 V).

Pulse Input, Standard: Positive pulse acceptance with peak amplitude of 100 mV to 35 V; minimum pulse width of 50 μsec below 1000 Hz, and 10 μsec, minimum, above 2000 Hz. Polarity must be observed.

Input Impedance: 1200 ohms, minimum.

Linearity*: Within ±0.2% max. typical ±0.1% from 1% to 100% of full output, exclusive of non-linearity of indicating device.

Overall Accuracy: Within ±0.5% (±0.25% typical) ± temperature variation (refer to temperature specification for coefficient). Error is exclusive of error in indicating device.

Output, Standard: 0–1 mADC; into 50 ohm to 250 ohm meter load, adjustable ±10%.

Auxiliary Output, Standard:
1. None.

Auxiliary Output, Optional:
2. Pulse output—pulse rate frequency = input AC or pulse rate frequency when clamped at '0'" output. Voltage level = ±9 V peak.
3. †50 mVDC recorder output. Output impedance = 50 ohms at 50 mV.

Output Ripple, Standard: Fundamental ripple frequency is equal to input signal frequency unfiltered.

Common Mode Rejection: 40 dB minimum, balanced input.

AC and DC Power, Standard: 120 VAC ±10%, 50 to 400 Hz; 24 VDC ±10%.

Isolation: With AC power applied, the input and output are totally isolated from each other and from the AC power supply and case. Therefore, the Tach-Pak may be operated with the input and/or output grounded or ungrounded. With DC power applied, the input and output are totally isolated from each other and from the case; the DC supply is common to the output. If DC supply isolation is required, a DC-to-DC converter is available (changes basic Tach-Pak model number).

Temperature Range: −20° F to +140° F operating. −40° F to +165° F storage. 0.01%/° F typical temperature coefficient.

*Accuracy and linearity specifications refer to % of full-scale frequency. For suppressed or expanded scales, write or phone for information. †Includes R-C filter. Percent of full-scale ripple is as follows: 0.2% at 5000 Hz; 1.0% at 1000 Hz; 2.0% at 500 Hz; 10.0% at 100 Hz.

Other options available include: 240 VAC, 48 VDC, and 125 VDC power input; DC power supply isolation; filtered current (up to 5 mADC) and voltage (up to 10 VDC) outputs; NEMA 1, NEMA 3/12, NEMA 4 and Class 1 Group D enclosures.

HOW TO ORDER

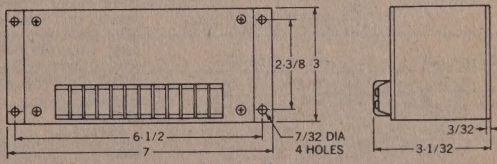
1. Specify Airpax Part No. (see sample part number).
2. Specify full scale input frequency.
3. Specify signal input (see listing below).
4. Specify additional outputs (see listing below).

SAMPLE PART NO.:

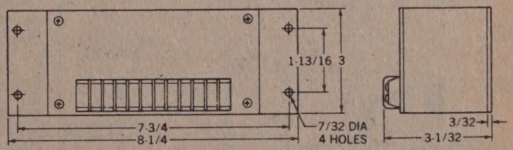
0 7 5 - 6 1 1 - X 1 1 X

Specify Signal Output:
1. 50 mV sensitivity to 25 rms, maximum signal limiting, standard.
2. 0.5 V sensitivity with 150 V rms, maximum signal limiting.
3. 10 mV sensitivity with 25 V rms, maximum signal limiting.

Specify Additional Outputs:
1. None.
2. Pulse.
3. 50 mV recorder output.



Standard Mounting



With "B Style" Mounting Adaptor

PRICE SCHEDULE

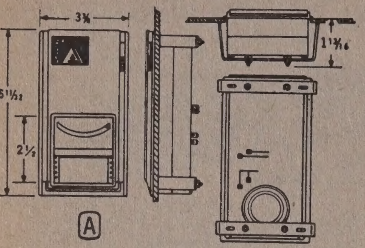
Airpax No. 075-611-1111 Series 600 Tach-Pak—Standard unit without options. Net Each **$109.00**

Options:

10 Millivolt Sensitivity—Net Each	**17.00**
150 V rms Input Limiting—Net Each	**13.00**
Pulse Output (Additional)—Net Each	**13.00**
50 mV Recorder Output—Net Each	**13.00**

AMPROBE® CHART RECORDERS AND ACCESSORIES

Versatility: Used as chart recorder or indicating meter. **Trouble-Shooting:** Makes permanent, continuous record of operating conditions. **Strip Charts:** Pressure sensitive paper, simple drop-in loading; no ink, no ribbon, no threading. **Operation:** Simple, precise and foolproof. **Two Types Available:** Flush-mounting models (Fig. A) supplied with mounting hardware, one each of necessary strip charts, motor leads not furnished; cased models (Fig. B) have permanently attached motor line cord and one each of necessary strip charts. **Paper Size:** 2½" w. x 30' lg. **Chart Speeds:** 1" or 12"/hr., standard; other speeds available. Unless specified, 12"/hr. chart speed supplied. **Impressions/Minute:** 1/5 sec at 12"/hr.; 1/min at 1"/hr. **Accuracy (FS):** DC instruments, ±2% except L/FDV8600, ±3%; AC instruments*, ±3% except L/FAA1500, ±4%, and expanded scale voltmeters, ±1¼%. **Temperature Recorder Accuracy:** Low range: ±4° F up to +20° F; ±3° F, +20° F up. High range: ±5° throughout. **Power Required:** 2.5 watts, 115 VAC, 60 Hz is standard; available for 220 VAC, 50 Hz or 12 VDC; pricing on request.
*Based on sinusoidal waveform.



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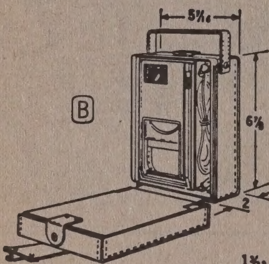

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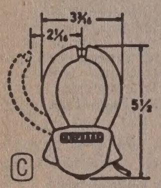

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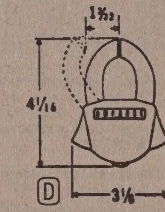

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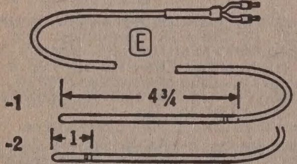

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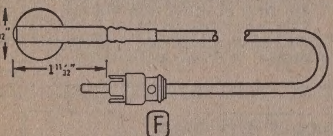

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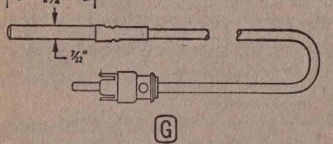

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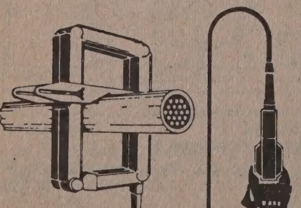
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AC VOLTMETER RECORDERS

Amprobe Model	Fig.	Range, VAC	Net Each
FAV2X **LAV2X**	A B	95–130/190–260, expanded scale	**$108.85** **114.85**
FAV3X **LAV3X**	A B	95–130/190–260/380–520, expanded scale	**130.85** **136.85**
FAV4X* **LAV4X***	A B	165–245/330–490 dual range, expanded scale	**113.85** **119.85**
FAV8600 **LAV8600**	A B	0–150/300/600 (1380 ohms/volt)	**113.85** **119.85**

*220 V 50 Hz only.

DC VOLTMETER RECORDERS

Three ranges; 3,333 ohms/volt. **Ranges:** 0–150/300/600 volts DC.
Amprobe Model FDV8600 (Fig. A)—
Net Each.......................**$113.85**
Amprobe Model LDV8600 (Fig. B)—
Net Each.......................**$119.85**

AC AMMETER RECORDERS

Amprobe Model*	Fig.	Range, Amps AC	Transducer	Net Each
LAA3	B	0–15/60/150/300	†	**$259.85**
FAA81 **LAA81**	A B	0–10/50/250/500	A-70FL	**119.85** **125.85**
FAA82 **LAA82**	A B	0–5/25/100/250	A-60FL	**114.85** **120.85**
FAA1500 **LAA1500**	A B	0–800/1500	A-50FL	**153.85** **159.85**

*5 amp basic recorders also available; write for complete information. †With matched set of 3 transducers.

DC MICROAMMETER RECORDERS

Amprobe Model	Fig.	μADC Range	Resis., Ohms	Net Each
FDC8500 **LDC8500**	A B	0–500	300	**$93.85** **99.85**

DC AMMETER RECORDERS

Write for complete information on 50 mV recorders also available.

DC MILLIAMMETER RECORDERS

Range: 0–1 mADC. **Resistance:** 36 ohms.
Amprobe Model FDB81 (Fig. A)—
Net Each.......................**$93.85**
Amprobe Model LDB81 (Fig. B)—
Net Each.......................**$99.85**

NEW MULTI-POINT RECORDERS

Uses single meter movement (time-sharing) with stepping relay to record up to 3 variables on one chart. Transducers continuously sense the variables, recorded in a fixed sequence, controlled by the stepping relay. Traces of variables have different dot patterns for easy identification. Use also as single-channel unit, recording just one variable. Paper size, chart speeds and power required are same as listed for other models (see above). **Size:** 7⅜" x 6¾" x 5⅛".

Amprobe Model	Ranges	Net Each
LAA3	0–15/60/150/300 amps AC; records 3 currents. With 3 transducers: 1, 2, 3 dots identify currents.	**$259.85**
LAV21	0–150/300/600 VAC; 0–15/60/150/300 amps AC; 1 dot or 3 dots indicates V or A on chart; with transducer	**224.85**
LT8200R	Records 2 temperatures, 1 event (4–300 amps AC, use A45-L for 0–4 A). With 1 current transducer. Temperature range determined by probes used: w/RBT-12, −40° to +60° F; w/RBT-14, −3.5° to +118° F. See Thermometer Probe listing, use two of same model.	**216.85**

AC VOLT/AMMETER RECORDERS

Amprobe Model	Fig.	Range	Net Each
LAV21#	B	0–150/300/600 V; 0–15/60/150/300 A	**$224.85**
FAVA81* **LAVA81***	A B	95–130/190–260 V; 0–10/50/250/500 A	**165.85** **171.85**
FAVA82† **LAVA82†**	A B	95–130/190–260 V; 0–5/25/100/250 A	**160.85** **166.85**
FAVA83* **LAVA83***	A B	95–130/190–260/380–520 V; 0–10/50/250/500 A	**182.85** **188.85**
FAVA84† **LAVA84†**	A B	95–130/190–260/380–520 V; 0–5/25/100/250 A	**178.85** **184.85**
FAVA85‡ **LAVA85‡**	A B	165–245/330–490 V; 0–10/50/250/500 A	**168.85** **174.85**
FAVA86§ **LAVA86§**	A B	165–245/330–490 V; 0–5/25/100/250 A	**163.85** **169.85**
LAVA87*	B	0–150/300/600 V; 0–10/50/250/500 A	**175.85**

*Current transducer supplied: A-70FL; †A-60FL; ‡A-75FL (220 V, 50 Hz); §A-65FL (220 V, 50 Hz). #With matched transducer.

TEMPERATURE RECORDERS

FT8100 and LT8100 Series supplied with one FL-RBT-1 probe; LT8200R supplied without probe.

FT8100 **LT8100**	A B	−50° F to +100° F, +50° F to +250° F	**$128.85** **134.85**
FT8101 **LT8101**	A B	−45° C to +40° C, +10° C to +120° C	**128.85** **134.85**
LT8200R	B	See listing below, left for ranges	**216.85**

ACCESSORIES

CURRENT TRANSDUCERS

See individual AC Volt/Ammeter Recorders for usage.

Amprobe Model	Fig.	Range, Amps AC	Net Each
A-75FL	C	0–10/50/250/500*	**$31.85**
A-70FL	C	0–10/50/250/500	**31.85**
A-65FL	D	0–5/25/100/250*	**26.50**
A-60FL	D	0–5/25/100/250	**26.50**

*220 V, 50 Hz.

THERMOMETER PROBES

Ranges: −50° to +100° F, +50° to +250° F. Leads, 12'. Probe, ³⁄₁₆" dia.

Amprobe Model	Fig.	Use with Model	Bulb	Net Each
FL-RBT-1	E-1	F/LT8100,	4¾"	**$15.85**
FL-RBT-2	E-2	F/LT8101	1"	**15.85**

Range: −40° to +60° F; leads, 15'.

RBT-12	F	LT8200R	1¹¹⁄₃₂"	**$9.50**

Range: −3.5° to +118° F; leads, 15'.

RBT-14	G	LT8200R	1¼"	**$15.85**

VOLTAGE ADAPTER AND ENERGIZER

Amprobe Model ADV-220 Motor Voltage Adapter—Allows 115 VAC recorder motor to operate on 220 VAC. Net Ea. . **$7.25**
Amprobe Model AV-750 Voltage Adapter—Permits models LAV21, LAVA87 and LAV8600 to record up to 750 VAC.
Net Each.......................**$5.85**

STRIP CHARTS

Complete information prices on request.

MODEL CT-50 AMPTRAN (FIG. H)

Flexible-link, split core transformer (5000 amps AC) can be clamped around bus or cable without shutting down service. Extends current ranges 50 times up to 5000 amps max. continuous duty. Can be adjusted in shape from 3¹⁵⁄₁₆" x 8⅞" rectangle to hexagon measuring 7½" across the flats. Output pick-up coil can accommodate jaws of current transducers. Eight foot cord on pickup coil permits positioning where it will be least affected by magnetic fields. Insulated for 5000 V (7000 V peak). May be used with Amprobe instruments calibrated for 50 or 60 Hz.
Amprobe Model CT-50—With carrying case and centering bars. Net. . **$185.00**

AMPROBE® TEST INSTRUMENTS AND ACCESSORIES

AMPROBE® ROTARY SCALES (FIG. A)

Extra easy reading, with six scales that rotate at the flick of a finger. Four current ranges, two voltage ranges on long, magnified scales minimize chances of error. One-hand operation. **Accuracy:** ±3% full scale, based on sinusoidal waveform. Self-shielding internal core magnet; insulated probe jaws dovetail; bayonet test leads. Light weight plastic case is ribbed for easy handling; shaped to fit into crowded switch boxes easily. **Size:** 7½" long. Weight, 14 oz. Carrying case and test leads included. Current ranges, amps AC; voltage ranges, volts AC.

Amprobe Model RS-1—Current ranges, 0–6/15/40/100. Voltage ranges, 0–150/600. Net Each.......................**$48.85***

Amprobe Model RS-2—Current ranges, 0–6/15/40/100. Voltage ranges, 0–150/300. Net Each.......................**$48.85***

Amprobe Model RS-3—9 scales. 5 current, 3 voltage and 1 ohm range. Ranges: 0–6/15/40/100/300, current; 0–150/300/600, voltage; 25 ohms mid-scale, ohmmeter. With battery attachment for ohmmeter readings. Net Each.................... **$63.25***

Amprobe Model RS-3 for 400 Hz—As above, but calibrated for 400 Hz. Ideal for aircraft applications. Net Each......**$89.85**

Amprobe Model RS-300—Current ranges, 0–6/15/40/100/300. Voltage ranges, 0–150/300/600. Net Each...........**$59.25***

Amprobe Model RS-1000—Current ranges, 0–15/40/100/300/1000. Voltage ranges, 0–150/300/600. Ohmmeter, 25 ohms mid-scale. Battery attachment for ohmmeter. Net Each....**$84.85**

Amprobe Model RS-1007—As above, but voltage ranges 0–150/300/750. Net Each...............................**$84.85**

*Also available with No. VLK-311R Extendo-Leads and No. A case with space for A-45L Energizer. Extendo-Leads end awkward, three-handed voltage readings and eliminate need for holding instrument while test probes are applied to circuit. To order, add suffix **A** to No. (e.g., RS-1A) and **$5.50** to price shown.

AMPROBE JUNIORS (Y) (FIG. B)

Comes with voltage test leads, yellow.

Amprobe Model	**Ranges**		**Net Each**
	Amps	**Volts**	
Y-550	0–50 AC	0–150/600 AC	**$26.85**
Y-500	0–100 AC	0–150/600 AC	**26.85**
Y-25	0–25 AC	0–125/250 AC	**26.85**

AMPROBE JUNIORS (YO, YT, YTO)

As illus. in Fig. B. With test leads and ohmmeter range. Yellow.

Amprobe Model	**Ranges, AC**			**Net Each**
	Amps	**Volts**	**Ohms***	
YO-525	0–25	0–150/600	25	**$32.25**
YO-550	0–50	0–150/600	25	**32.25**
YO-500	0–100	0–150/600	25	**32.25**
YT-1025	0–10/25	0–150/300	....	**32.25**
YT-25100	0–25/100	0–150/300	....	**32.25**
YT525/100	0–25/100	0–150/600	....	**32.25**
YTO525/100	0–25/100	0–150/600	25	**37.25**

*Mid-scale.

AMPROBE JUNIORS (YTB)

Each includes one YT Amprobe Junior, No. B case and No. VLK-355R Extendo-Leads. Space is provided for the No. A-45L Energizer that extends sensitivity 5x or 10x on current ranges and permits voltage readings at the outlet under load conditions.

Amprobe Model	**Ranges, AC**		**Net Each**
	Amps	**Volts**	
YTB-1025	0–10/25	0–150/300	**$38.25**
YTB-25100	0–25/100	0–150/300	**38.25**

AMPROBE JR. TEST MASTER KITS (FIG. C)

Includes "YO" Amprobe Junior, A-45L Energizer to extend sensitivity 5x or 10x, ohmmeter test lead attachment, test leads, sturdy case. *Mid-scale.

Amprobe Model	**Ranges, AC**			**Net Each**
	Amps	**Volts**	**Ohms***	
TM-YO-525	0–25	0–150/600	25	**$43.50**
TM-YO-550	0–50	0–150/600	25	**43.50**
TM-YO-500	0–100	0–150/600	25	**43.50**

VOLTPROBE® VOLTAGE TESTER (FIG. D)

Compact 10-range tester fits in a shirt pocket. Visual readout with series of windows that light to correspond with each voltage level. Frequency range, 25–800 Hz. Sliding probe pushes through body; second probe has coiled cord. AC ranges, 0–115/220/277/440/550 V. DC ranges, 0–115/220/400/600/750 V.

Amprobe Model VT-100—Net Each..................**$ 9.85**

Amprobe Model VT-124—Above plus 24/48 VAC. Net. **15.50**

AMPROBE FASTEMP® THERMOMETERS (FIG. E)

Handy, pocket-sized thermometer checks surface, liquid, or gaseous temperatures with universal probe (included). Unit will accommodate up to three probes, each with a 15-ft. lead, for temperature monitoring of locations as much as 30 feet apart; special air and immersion probes also available. Probe selector switch, range switch calibration control, and press-to-read button all conveniently located in front. Press-to-read button can be locked on for continuous readings. Available in four dual-range models: −50° F to +50° F and +40° F to +150° F; −45° C to +10° C and +6° C to +65° C; +10° F to +110° F and +100° F to +250° F; −12° C to +43° C and +38° C to +120° C. Use 4 Eveready 915 batteries. Weight, 10 oz.

Amprobe Model T-150—Range, −50° F to +150° F....**$46.50**

Amprobe Model T-150C—Range, −45° C to +65° C.... **46.50**

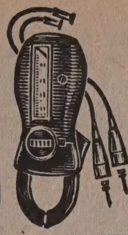
Amprobe Model T-151—Range, +10° F to +250° F.... **46.50**

Amprobe Model T-151C—Range, −12° C to +120° C... **46.50**

AMPROBE FASTEMP® TMVO

For servicing appliances (ovens, dryers), motors, furnaces (oil, gas), and industrial equipment. Measures: Temp., 70–1200° F (30°–640° C); 0–50/1000 mV; resis., 5 and 50 ohms mid-scale.

Amprobe Model T-152—With thermocouple, test leads, clip adapter and carrying case. Net Each..................**$59.85**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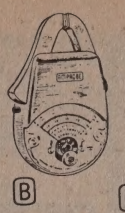
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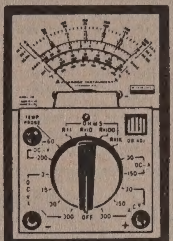
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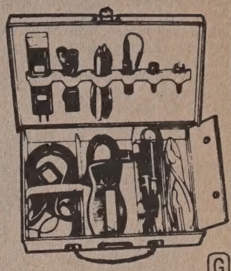
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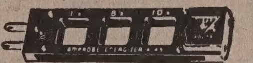

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AMPROBE JUNIOR LINE-PROBE (ALP)

Traces up to ten pairs of conductors simultaneously. Measures volts, amperes, resistance, checks continuity. Supplied with case, fused battery attachment, ten station markers, two station holders, voltage leads and grounding leads.

Amprobe Model ALP-501—Current range, 0–100 amps AC. Voltage ranges, 0–150/600 VAC; 1K ohm mid-scale. Net...**$49.50**

MULTITESTERS (FIG. F)

Amprobe Model AM-1—Designed for industrial use. Voltage, 0–30/150/300 VAC; 0–3/15/30/300 VDC. Millivolts, 0–60/1200 mV. Current, 0–30/150 mA. Resistance, 0–200/2K/20K/200K ohms on scales of 1, 10, 100 and 1000. Temperature, +70° F to +1200° F (with TC-3, not supplied). Accuracy, ±3% FS DC; ±4% FS AC. Includes voltage test leads, alligator test leads and battery. Net Each...................................**$27.50**

Amprobe Model AM-2—For general purpose use. Voltage, 0–2.5/10/50/250/1000 VDC; 0–10/50/250/500/1000 VAC. Resistance, 0–10K/100K/1000K ohms. Current, 0–50 μA DC; 0–25/250 mA DC. Inductance, 0–5000 H; 250 pF–0.2 μF capacitance. Decibels, −20 to +22 and +20 to +36 dB. Accuracy, ±3% FS DC; ±4% FS AC. With test leads and battery. Net Each..**$19.95**

Amprobe Model TC-3—Thermocouple for AM-1. Net.. **14.85**

Amprobe Model MM—Carrying case. Net Each....... **4.50**

AMPROBE TEST MASTER KITS (FIG. G)

Complete with sturdy carrying case with snap-lock, handle, built-in tool compartment and test leads.

Amprobe Model TM-33A—Contains RS-3 snap-around volt-ammeter-ohmmeter with 5 current, 1 resistance, 3 voltage ranges; Deca-Tran to extend current reading 10x up to 1200 amps; Extendo-Leads; Energizer; No. U case. Net Each....**$112.85**

Amprobe Model TM-43A—Contains RS-3 snap-around volt-ammeter-ohmmeter; Deca-Tran; Extendo-Leads; Energizer; PSA-1 Phase Sequence Adapter; No. U case. Net Each.**$125.85**

Amprobe Model TM-63—Contains RS-3; Extendo-Leads; Energizer; No. A case. Net Each.........................**$75.85**

Amprobe Model TM-60—Contains Extendo-Leads; Energizer; No. A case. Net Each...............................**$18.25**

ACCESSORIES

Model No.	**Description**	**Net Each**
PSA-1	**Phase sequence adapter,** permits determining phase sequence of three-phase circuits up to 550 VAC when used with Amprobe or other multimeter having appropriate AC voltage ranges.	$16.85
A-45L (Fig. H)	**Energizer,** for direct 5x and 10x sensitivity readings on permanently wired equipment and line voltage readings, in weatherproof pouch with shorting cap and adapter lead.	8.25
A-50-1	**Deca-Tran,** extends amperage readings 10x; up to 1200 amps max. With 2-ft. line cord for remote readings. Carrying case included.	37.50
CT-50	**Amptran** flexible-link, split-core transformer extends current readings 50x up to 6,000 amps, intermittent duty. Accommodates bus bar or cable. With carrying case.	185.00
VL-11R	**Bayonet safety type voltage leads,** for use with all Rotary Scale models* (RS).	3.15
VL-55R	**Voltage leads,** set of 2* for any Junior (Y, YO) or Junior Line-Probe (ALP).	3.15
VL-750R	**High voltage multiplier leads,** for use with all Rotary Scale models (RS); reads to 750 VAC*.	4.25
VLK311R	**Extendo-Lead pack** for RS-1 thru RS-300; includes VL312R, VC314 and AC315.	4.85
VLK355R	**Extendo-Lead pack** for Junior models; includes VL356R, AC357 and VC314.	4.85

*With detachable test prods.

api DIGITAL PANEL METERS AND COMPARATORS

LFE CORPORATION

MODEL 4352 DIGITAL PANEL METERS (3½ DIGIT)

Premium model in this new low-cost line of digital panel meters. Planar 3½ digit seven-segment readout is ½″ high and crisp green for excellent readability MOS-LSI circuitry provides performance of higher-priced units in a panel cutout size interchangeable with other popular digital panel meters. Standard features include: T²L/DTL compatible BCD output option; autopolarity; high noise rejection; display hold; print command; programmable decimal points; dual-slope integration. Input connections by standard printed circuit card connector. Model 4352 is the most reliable digital panel meter available today.

19.73
DC MILLIVOLTS
LFE

SPECIFICATIONS

Accuracy: Voltage: ±0.1% of reading, ±1 digit; current, ±0.25% of reading, ±1 digit. **Reading Rate:** 5 readings per second, typical. **Display:** 3 digits with "1" over-range plus flashing over-range indication; electrofluorescent tubes have 100,000 hour rated life. **Over-range:** 100%. **Resolution:** 0.05%. **Common Mode Rejection:** 120 dB (DC to 60 Hz with 1K ohm unbalance). **Normal Mode Rejection:** 30 dB (60 Hz and 0.5 sec full scale response time). **Decimal Points:** Selected by jumper on input connector. **Inputs:** Analog signal, display hold, conversion command. **Outputs:** +5 V, ±5 V, ±12 VDC at 5 mA standard; optional BCD, logical "0" +0.8 V max.; logical "1" +2.4 V min.; print command, polarity; over-range. **Operating Temperature:** 0° C to 50° C. **Controls:** Zero and full scale (accessible from front). **Power Required:** 115 VAC (±10%), 50–60 Hz, 6 watts. **Size:** 4″ wide x 2⅛″ high; 4″ deep behind panel.

DC Range	Impedance, Ohms	API Number	Net Each, Lots of	
			1-9	10-24
0–19.99 mV	100 meg	4352-0800-0000	$195.00	$162.44
0–199.9 mV	100 meg	4352-4700-0000	195.00	162.44
0–1.999 Volts	1000 meg	4352-0401-0000	195.00	162.44
0–19.99 Volts	10 meg	4352-4301-0000	195.00	162.44
0–199.9 Volts	10 meg	4352-7701-0000	195.00	162.44
0–19.99 μA	10,000	4352-0802-0000	195.00	162.44
0–199.9 μA	1,000	4352-4702-0000	195.00	162.44
0–1.999 mA	100	4352-1003-0000	195.00	162.44
0–19.99 mA	10	4352-4303-0000	195.00	162.44
0–199.9 mA	1	4352-7703-0000	195.00	162.44

ACCESSORIES

API No.	Description	Net Ea.
1125-252	Input connector	$ 3.50
1125-253	BCD connector	3.50
*	BCD option	10.00
2366-77	Green window	1.00
2366-73	Blue window	1.00

*To order BCD option, change 10th digit in Model 4352 Panel Meter Numbers to 2 (e.g., 4352-0800-0200) and add **$10.00** to price.

MODEL 4350 DIGITAL PANEL METER (2½ DIGIT)

17.3
DC MILLIVOLTS
LFE

- **MOS-LSI technology**
- **Space-saving design**
- **High stability**
- **Low cost**
- **High noise rejection**
- **½″ seven-segment planar display**
- **Extended operating temperature**
- **Negative polarity indication**
- **Flashing over-range**
- **Optional BCD outputs**
- **Optional over-range readings**

DC Range	Impedance, Ohms	API Number	Net Each, Lots of	
			1-9	10-24
0–199 mV	100 meg	4350-4700-0000	$140.00	$111.32
0–1.99 Volts	100 meg	4350-0401-0000	140.00	111.32
0–19.9 Volts	1 meg	4350-4301-0000	140.00	111.32
0–199 Volts	10 meg	4350-7701-0000	140.00	111.32
0–19.9 μA	10,000	4350-0802-0000	140.00	111.32
0–199 μA	1,000	4350-4702-0000	140.00	111.32
0–1.99 mA	100	4350-1003-0000	140.00	111.32
0–19.9 mA	10	4350-4303-0000	140.00	111.32
0–199 mA	1	4350-7703-0000	140.00	111.32

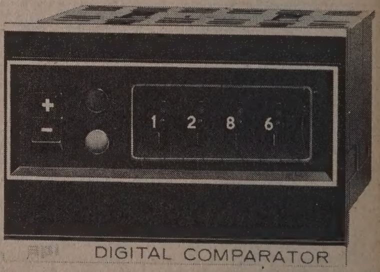
ACCESSORIES

API No.	Description	Net Ea.
1125-243	Input connector	$ 3.50
*	BCD option	10.00
2366-77	Green window	1.00
2366-73	Blue window	1.00

*To order BCD option, change 10th digit in Model 4350 Panel Meter Numbers to 2 (e.g., 4350-4700-0200) and add **$10.00** to the price shown.

MODEL 4310 DIGITAL COMPARATOR

Provides digital, algebraic comparison of preset thumbwheel input with BCD output from digital panel meter, counter or accumulator. Relay output, logic level and indicator lamp signal if BCD input exceeds thumbwheel setting when a comparison has been commanded. Applications include Go/No Go testing and On/Off Control. Both 3½ digit and 4 digit models are available with separable power supply where space is critical, and with optional buffers where two to four comparators are to be driven from one digital panel meter. Styling is compatible with Model 4300 series digital panel meters and permits either front or rear panel mounting.



SPECIFICATIONS

Input Code: 1–2–4–8 parallel BCD; logic "1" +4 V max., logic "0" +0.4 V min. at 3.2 mA. **Accuracy and Resolution:** Same as input. **Panel Controls:** Four thumbwheel switches and polarity switch. **Status Display:** High lamp indicates input equal to or above set limit. Low lamp indicates input below set limit. **Outputs:** Logic: +4 V when input equal to or above set limit, +0.4 V when input below set limit; Relay: 2 amps, 120 VAC (non-inductive), SPDT. **Operating Temperature:** 0° C to 50° C. **Power Required:** 105–125 or 210–250 VAC, 50–60 Hz, 5 watts. **Size:** 4½″ wide x 3″ high; 7″ deep behind panel.

STOCK ITEMS AND ACCESSORIES

API Number 4310-1020-0000—Adjustable high single limit digital comparator. ±0–1999 range. Net Each, Lots of 1–9 . . **$165.00**
Lots of 10–24 . . . . **156.75**

API Number 4310-2020-0000—Adjustable high single limit digital comparator. ±0–9999 range. Net Each, Lots of 1–9 . . **$195.00**
Lots of 10–24 . . . . **185.25**

API Number 1126-330—Buffer. Used with API digital panel meters when 2 to 4 comparators are used. Net Each . . . **$30.00**

API Number 1126-307—Interconnecting cable, 24″ long to connect power supply and thumbwheel assembly when they are apart. Net Each **$25.00**

API Number 1126-401—Interfacing cable, 24″ long. API Model 4302/4 DPM to one comparator. Net Each **$18.00**

API Number 1126-402—Interfacing cable, 24″ long. API Model 4302/4 DPM to two comparators. Net Each **$30.00**

API Number 1125-248—Input connector without cable. Net Each **3.50**

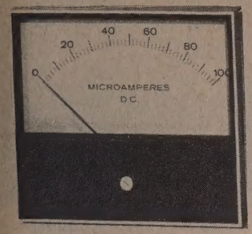
API Number 1125-246—BCD output connector for API digital panel meter. Net Each **$3.50**

API Number 1125-208—Bezel trim for rear panel mounting only. Net Each **$1.50**

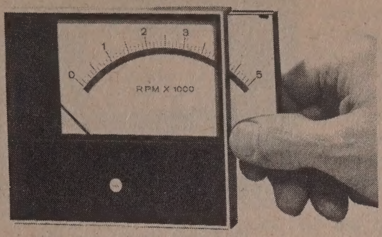
Additional Digital Panel Meters on Pages 432, 452 and 490

api SERIES 7000 PANEL METERS

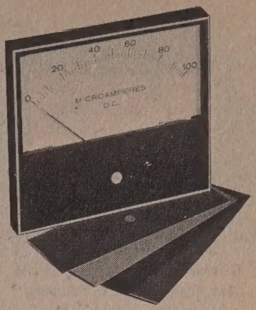
LFE CORPORATION



Series 7000 in four sizes



Field-changeable slide-in scales available



Optional front color plates

ompletely new line of panel meters in four sizes, featuring
enolic cases and fronts with glass windows. Unique features
r versatility, including field-changeable slide-in scales; optional
ont color plates; optional aluminum bezels or plastic lenses for
gh style rear panel mounting. Taut-band shielded movements
e standard, with 1% tracking in most DC ranges. Full-scale accuracy: ±2% on DC ranges, ±3% on AC (rectifier type). Size: Model 7025, 2¾" w. x 2⅜" h.; Model 7035, 3½" w. x 3" h.; Model 7045, 4½" w. x 4" h.; Model 7055, 5⅗" w. x 4½" h. Optional bezels, plastic lenses and color inserts listed on following page. Write for full information and prices on slide-in scales. Shipping Weight, 1 lb.

DC MICROAMMETERS

Range	Type*	Model 7025		Model 7035		Model 7045		Model 7055	
		API Number	Net Ea. Lots of 1-9*	API Number	Net Ea. Lots of 1-9*	API Number	Net Ea. Lots of 1-9*	API Number	Net Ea. Lots of 1-9*
–10 μA	TB	7025-0402-0000	$40.00	7035-0402-0000	$41.00	7045-0402-0000	$43.00	7055-0402-0000	$44.50
–20 μA	TB	7025-0802-0000	32.50	7035-0802-0000	34.00	7045-0802-0000	35.50	7055-0802-0000	37.00
5–0–25 μA	TB	7025-1802-1000	27.00	7035-1802-0100	28.00	7045-1802-0100	29.50	7055-1802-0100	31.00
–50 μA	TB	7025-1802-0000	26.50	7035-1802-0000	27.50	7045-1802-0000	29.00	7055-1802-0000	30.50
0–0–50 μA	TB	7025-3602-0100	23.50	7035-3602-0100	24.50	7045-3602-0100	26.50	7055-3602-0100	28.00
–100 μA	TB	7025-3602-0000	23.00	7035-3602-0000	24.00	7045-3602-0000	26.00	7055-3602-0000	27.50
00–0–100 μA	TB	7025-4702-0100	21.50	7035-4702-0100	22.50	7045-4702-0100	24.00	7055-4702-0100	26.00
–200 μA	TB	7025-4702-0000	21.00	7035-4702-0000	22.00	7045-4702-0000	23.50	7055-4702-0000	25.00
–500 μA	PJ	7025-5902-0000	18.50	7035-5902-0000	20.00	7045-5902-0000	21.50	7055-5902-0000	23.00
00–0–500 μA	PJ	7025-0003-0100	19.50	7035-0003-0000	20.50	7045-0003-0000	22.00	7055-0003-0100	23.50

DC MILLIAMMETERS

–1 mA	PJ	7025-0003-0000	$18.50	7035-0003-0000	$20.00	7045-0003-0000	$21.50	7055-0003-0000	$23.00
–5 mA	PJ	7025-1803-0000	18.50	7035-1803-0000	20.00	7045-1803-0000	21.50	7055-1803-0000	23.00
–10 mA	PJ	7025-3303-0000	18.50	7035-3303-0000	20.00	7045-3303-0000	21.50	7055-3303-0000	23.00
–25 mA	PJ	7025-4703-0000	18.50	7035-4703-0000	20.00	7045-4703-0000	21.50	7055-4703-0000	23.00
–50 mA	PJ	7025-5603-0000	18.50	7035-5603-0000	20.00	7045-5603-0000	21.50	7055-5603-0000	23.00
–100 mA	PJ	7025-6903-0000	21.00	7035-6903-0000	22.00	7045-6903-0000	23.50	7055-6903-0000	25.00
–500 mA	PJ	7025-8803-0000	21.00	7035-8803-0000	22.00	7045-8803-0000	23.50	7055-8803-0000	25.00

DC AMMETERS

–1 amp	PJ	7025-0004-0000	$21.00	7035-0004-0000	$22.00	7045-0004-0000	$23.50	7055-0004-0000	$25.00
–3 amp	PJ	7025-0804-0000	21.00	7035-0804-0000	22.00	7045-0804-0000	23.50	7055-0804-0000	25.00
–5 amp	PJ	7025-1104-0000	21.00	7035-1104-0000	22.00	7045-1104-0000	23.50	7055-1104-0000	25.00
–10 amp	PJ	7025-1704-0000	21.00	7035-1704-0000	22.00	7045-1704-0000	23.50	7055-1704-0000	25.00
–15 amp	PJ	7025-1904-0000	21.00	7035-1904-0000	22.00	7045-1904-0000	23.50	7055-1904-0000	25.00
–25 amp	PJ	7025-2204-0000	21.00	7035-2204-0000	22.00	7045-2204-0000	23.50	7055-2204-0000	25.00

DC MILLIVOLTMETERS

–10 mV	TB	7025-0400-0000	$31.50	7035-0400-0000	$32.50	7045-0400-0000	$34.50	7055-0400-0000	$36.00
–50 mV	PJ	7025-1800-0000	21.00	7035-1800-0000	22.00	7045-1800-0000	23.50	7055-1800-0000	25.00
–100 mV	PJ	7025-3600-0000	21.00	7035-3600-0000	22.00	7045-3600-0000	23.50	7055-3600-0000	25.00
0–0–50 mV	PJ	7025-3600-0100	21.50	7035-3600-0100	22.50	7045-3600-0100	24.00	7055-3600-0100	26.00
00–0–100 mV	PJ	7025-4700-0100	21.50	7035-4700-0100	22.50	7045-4700-0100	24.00	7055-4700-0100	26.00

DC VOLTMETERS

–5 Volts	PJ	7025-1601-0000	$21.00	7035-1601-0000	$22.00	7045-1601-0000	$23.50	7055-1601-0000	$25.00
–10 Volts	PJ	7025-3001-0000	21.00	7035-3001-0000	22.00	7045-3001-0000	23.50	7055-3001-0000	25.00
–15 Volts	PJ	7025-3601-0000	21.00	7035-3601-0000	22.00	7045-3601-0000	23.50	7055-3601-0000	25.00
–30 Volts	PJ	7025-5101-0000	21.00	7035-5101-0000	22.00	7045-5101-0000	23.50	7055-5101-0000	25.00
–50 Volts	PJ	7025-5601-0000	21.00	7035-5601-0000	22.00	7045-5601-0000	23.50	7055-5601-0000	25.00
–150 Volts	PJ	7025-7101-0000	21.00	7035-7401-0000	22.00	7045-7401-0000	23.50	7055-7401-0000	25.00
–300 Volts	PJ	7025-8401-0000	21.00	7035-8401-0000	22.00	7045-8401-0000	23.50	7055-8401-0000	25.00
–500 Volts	PJ	7025-8801-0000	21.00	7035-8801-0000	22.00	7045-8801-0000	23.50	7055-8801-0000	25.00

AC VOLTMETERS (RECTIFIER TYPE)

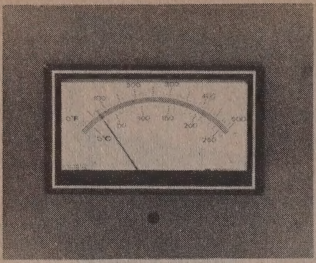
–10 Volts	PJ	7025-3006-0000	$25.00	7035-3006-0000	$26.50	7045-3006-0000	$28.00	7055-3006-0000	$29.50
–15 Volts	PJ	7025-3606-0000	25.00	7035-3606-0000	26.50	7045-3606-0000	28.00	7055-3606-0000	29.50
–150 Volts	PJ	7025-7406-0000	25.00	7035-7406-0000	26.50	7045-7406-0000	28.00	7055-7406-0000	29.50
–300 Volts	PJ	7025-8406-0000	25.00	7035-8406-0000	26.50	7045-8406-0000	28.00	7055-8406-0000	29.50

TB, taut-band movement; PJ, pivot-and-jewel movement.

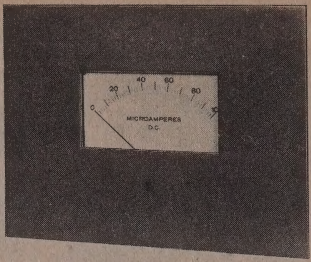
★DEDUCT 10% FOR LOTS OF 10–24

SEE FOLLOWING PAGE FOR SERIES 7000 METER ACCESSORIES

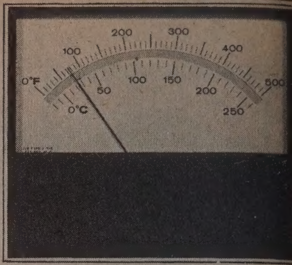
api SERIES 7000 PANEL METERS AND ACCESSORIES



Optional aluminum bezel for rear panel mounting



Optional plastic lens for rear panel mounting



Series 7000 Pyrometer

SERIES 7000 PYROMETERS

Rugged taut-band pyrometers are both bimetal and thermistor compensated for ambient temperature changes. All ranges are calibrated for 10 ohms thermocouple resistance, and can be adjusted for use with lower resistance thermocouples by means of an external adjustable resistor strip supplied with each meter.

Calibrated in both °F and °C. Mirrored scales are standar Model 7045 has ±2% accuracy; Model 7055 has ±1% accurac Can be used with optional aluminum bezels, plastic lenses, colored front panel inserts for high style mounting (listed below Shipping Weight, 1 lb. Also available in Model 7025 and Mod 7035 sizes.

Range		Thermocouple Type	Model 7045 (±2%)			Model 7055 (±1%)		
			API Number	Net Each, Lots		API Number	Net Each, Lot	
°F	°C			1-9	10-24		1-9	10-24
−150° to +250°	−100° to +120°	T (Cu/C)	7045-6424-0000	$39.50	$35.55	7055-6434-0000	$51.50	$46.3
−75° to +225°	−60° to +110°	J (I/C)	7045-5304-0000	39.50	35.55	7055-5324-0000	51.50	46.3
0° to +300°	0° to +150°	J (I/C)	7045-6004-0000	39.50	35.55	7055-6024-0000	51.50	46.3
0° to +500°	0° to +260°	J (I/C)	7045-6604-0000	39.50	35.55	7055-6624-0000	51.50	46.3
0° to +800°	0° to +430°	J (I/C)	7045-7804-0000	39.50	35.55	7055-7824-0000	51.50	46.3
0° to +1000°	0° to +500°	J (I/C)	7045-8204-0000	39.50	35.55	7055-8224-0000	51.50	46.3
0° to +1500°	0° to +800°	K (C/A)	7045-8504-0000	37.50	33.75	7055-8524-0000	49.50	44.5
0° to +2000°	0° to +1100°	K (C/A)	7045-8904-0000	37.50	33.75	7055-8924-0000	49.50	44.5
0° to +2500°	0° to +1370°	K (C/A)	7045-9304-0000	37.50	33.75	7055-9324-0000	49.50	44.5

SERIES 7000 METER ACCESSORIES

BEZEL AND LENS FOR REAR PANEL MOUNTING

Aluminum bezels and plastic lenses for high style rear panel mounting of Series 7000 meters.

For Meter Model	Bezel Kit			Plastic Lens		
	API Number	Net Each, Lots of		API Number	Net Each, Lots of	
		1-9	10-24		1-9	10-24
7025	1125-242	$1.60	$1.44	1125-241	$1.25	$1.12
7035	1125-226	1.75	1.57	1125-225	1.25	1.12
7045	1125-223	2.00	1.80	1125-222	1.25	1.12
7055	1125-229	2.25	2.02	1125-228	1.25	1.12

COLOR INSERT PLATES

Attractive insert plates easily added in front recess on Series 7000 meters.

For Meter Model	API Number					Net Each, Lots of	
	Tan	Flat Black	Light Gray	Dark Gray	Olive	1-9	10-24
7025	1646-361	1646-365	1646-364	1646-363	1646-362	$0.60	$0.54
7035	1646-311	1646-315	1646-314	1646-313	1646-312	.60	.54
7045	1646-295	1646-299	1646-298	1646-297	1646-296	.60	.54
7055	1646-306	1646-310	1646-309	1646-308	1646-307	.60	.54

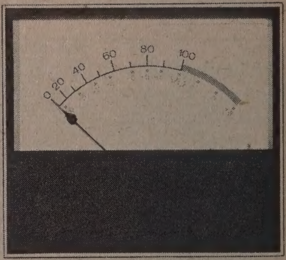
VU METERS

Attractive VU meters, with phenolic cases and glass windows, conform to all specifications of ASA C16.5 (1954). Type A scale is for recording applications. Type B scale emphasizes percent modulation for broadcast use.

Series 7000 offers all the features of 7000 panel meters, including optional front color plates; optional aluminum bezels or plastic lenses for rear panel mounting; and field-changeable slide-in scale. Sizes: Model 7035, 3½" x 3"; Model 7045, 4⅗" x 4".

Models 361 and 561 are highly-styled VU meters that require minimal panel space. They may be easily illuminated from behind the panel through a Lucite* window at the top of the case. Sizes: Model 361, 3½" x 2"; requires 3¹¹⁄₃₂" x 1⅞" panel cutout. Model 561, 5" x 3"; requires 4¹³⁄₁₆" x 2¾" panel cutout. Shipping Weight, 1 lb.

*Registered DuPont Corp. trademark.



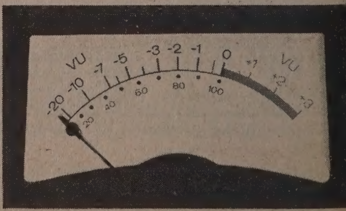
Series 7000 VU Meter

SERIES 7000 VU METERS

Type	Model 7035			Model 7045		
	API Number	Net Each, Lots of		API Number	Net Each, Lots of	
		1-9	10-24		1-9	10-24
A Scale	7035-0226-0050	$35.50	$31.95	7045-0226-0050	$35.50	$31.95
B Scale	7035-0236-0050	35.50	31.95	7045-0236-0050	35.50	31.95

MODELS 361 AND 561 STANDARD VU METERS

Type	Model 361			Model 561		
	API Number	Net Each, Lots of		API Number	Net Each, Lots of	
		1-9	10-24		1-9	10-24
A Scale	36-0236-0050	$35.50	$31.95	56-0266-0050	$35.50	$31.95
B Scale	36-0246-0050	35.50	31.95	56-0236-0050	35.50	31.95



Model 561 VU Meter

ACCESSORIES

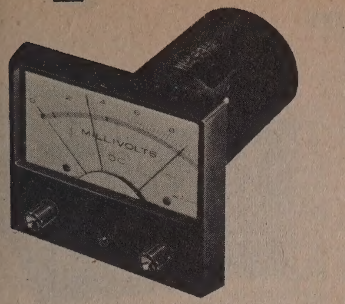
API No. 266-55 Illumination Kit—For Model 361 meter. Net Each.............. **95c**

API No. 221-115 Illumination Kit—For Model 561 meter. Two required. Net..... **30c**

api METER RELAY CONTROLLERS AND PANEL METERS

LFE CORPORATION

MODEL 503-X SOLID STATE COMPACK CONTROLLERS



Solid state controllers, dimensionally and electrically interchangeable with most optic type meter relays. Integrated circuitry provides high performance level and reliability, with 1% accuracy and fast response. Switching is independent of meter. Uses no photocells or lamps. Provides continuous signal indication and direct set point adjustment. Basic sensitivity of 1 μA (1 megohm per V), chopper input; self-contained power supply. Geardrive slip clutch set pointers are 100% adjustable, on both single and double units. Can be used for automatic reset or latching. **Contacts:** SPDT relay output, rated 5 amps resistive at 115 VAC. **Indication Accuracy:** ±1% except 0–1 μA and 0–1 mV types, ±2%. **Minimum Span Between Set Pointers:** 3%. **Set Point Resolution:** ±0.3%. **Control Forms:** On-off, cycling, limit. **Ambient Temperature:** 0° C to 50° C. **Power Required:** 115 VAC, 50-60 Hz. **Size:** 4.71″ wide, 4.27″ high; body 2.79″ dia. x 5.500″ deep. **Panel Cutout:** 2.82″ dia. hole; four .161″ dia. mounting holes, 4.000″ x 3.560″. Shipping Weight, 1½ lbs.

DC INPUT CONTROLLERS

DC Range	Impedance, Ohms	High Set Point			Double Set Point		
		API Number	Net Each, Lots of		API Number	Net Each, Lots of	
			1-9	10-24		1-9	10-24
0–1 μA	10,000	53-9602-7502	$172.00	$154.80	53-9602-8502	$197.00	$177.30
0–5 μA	2000	53-0002-7502	150.00	135.00	53-0002-8502	175.00	157.50
0–10 μA	1000	53-0402-7502	130.00	117.00	53-0402-8502	155.00	139.50
0–20 μA	500	53-0802-7502	130.00	117.00	53-0802-8502	155.00	139.50
0–50 μA	200	53-1802-7502	130.00	117.00	53-1802-8502	155.00	139.50
0–100 μA	100	53-3602-7502	130.00	117.00	53-3602-8502	155.00	139.50
0–500 μA	20	53-5902-7502	130.00	117.00	53-5902-8502	155.00	139.50
50–0–50 μA	....	....	....	....	53-3602-8502	170.00	153.00
0–1 mV	1000	53-9600-7502	172.00	154.80	53-9600-8502	197.00	177.30
0–5 mV	5000	53-0000-7502	150.00	135.00	53-0000-8502	175.00	157.50
0–10 mV	10,000	53-0400-7502	125.00	112.50	53-0400-8502	150.00	135.00
0–50 mV	50,000	53-1800-7502	130.00	117.00	53-1800-8502	155.00	139.50
0–1 mA	10	53-0003-7502	130.00	117.00	53-0003-8502	155.00	139.50
Over 1 mA	....	....	130.00	117.00	....	155.00	139.50

T/C INPUT TEMPERATURE CONTROLLERS

me as above, calibrated for use with thermocouples. Electrical
d junction compensates for ambient temperature changes
150 μV over 40° F to 120° F). Chopper amplifier input circuit accommodates thermocouple resistances from 1 to 30 ohms without need for calibration. Automatic full-scale thermocouple break protection.

Range		Thermocouple Type	High Set Point			Double Set Point		
°F	°C		API Number	Net Each, Lots of		API Number	Net Each, Lots of	
				1-9	10-24		1-9	10-24
0° to 150°	−20° to +66°	J (I/C)	53-5604-7502	$170.00	$153.00	53-5604-8502	$195.00	$175.50
0° to 300°	0° to 150°	J (I/C)	53-6004-7502	160.00	144.00	53-6004-8502	185.00	166.50
0° to 500°	0° to 260°	J (I/C)	53-6604-7502	155.00	139.50	53-6604-8502	180.00	162.00
0° to 800°	0° to 430°	J (I/C)	53-7824-7502	155.00	139.50	53-7824-8502	180.00	162.00
0° to 1000°	0° to 500°	J (I/C)	53-8204-7502	155.00	139.50	53-8204-8502	180.00	162.00
0° to 1500°	0° to 800°	K (C/A)	53-8504-7502	155.00	139.50	53-8504-8502	180.00	162.00
0° to 2500°	0° to 1370°	K (C/A)	53-9304-7502	155.00	139.50	53-9304-8502	180.00	162.00

MODEL 227 2-MODE PROPORTIONAL TEMPERATURE CONTROLLERS

l solid state proportional output controller
th automatic reset circuit to eliminate process
roop''. No adjustments required, except tem-
rature setting. SCR power output handles
istive loads up to 10 amps at 240 VAC (field-
nvertible to 120 V). Can maintain ±1° F
aight line control. Meter indication is inde-
ndent of control function. Temperature is
on a calibrated dial. Analog meter displays
e temperature, correct for room ambient
nperature. Has fixed 5% proportional band;
et fixed at 5 minutes per reset (field change-
le). Handles thermocouple resistance up to
0 ohms without adjustment. Electrical cold
nction compensation; up-scale thermocouple break protection.

SPECIFICATIONS

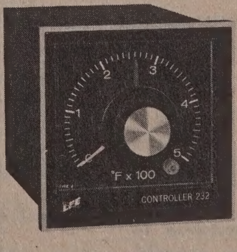
Accuracy: ±1% of span over operating range (approx. 30–70% of span) for both set point and indication. ±2% set point accuracy, ±3% indicating accuracy at other points. **Sensitivity:** 0.1° F. **Operating Temperature:** 0° to 120° F. **Size:** 6¾″ x 2¾″ x 7″. Shipping Weight, 4 lbs. Thermocouple type J, iron constantan; K, chromel alumel.

Range	Thermocouple Type	API Number	Net Each, Lots of	
			1-9	10-24
0–300° F	J	29-0227-0009	$176.00	$167.20
0–500° F	J	29-0227-0011	176.00	167.20
0–800° F	J	29-0227-0013	176.00	167.20
500–1500° F	K	29-0227-0326	176.00	167.20
0–300° C	J	29-0227-0051	176.00	167.20
0–600° C	J	29-0227-0320	176.00	167.20

MODEL 232 TEMPERATURE CONTROLLERS

ON-OFF/LIMIT CONTROLLERS

all solid state, thermocouple input, indicating controller with 250° 6.5-inch long
licator dial. Potentiometric set point. Has SPDT relay output rated 5 amperes 240 volts
C noninductive. Accommodates up to 100 ohm thermocouple without calibration.
scale thermocouple break protection, electrical cold junction compensation. Failsafe
ring. Continuous indication with 2% accuracy. Control sensitivity of 0.1 degree, set
int resolution 0.5% of scale length. Will operate as on-off controller or limit/alarm
it; field convertible. Power supply is 120/240 volts AC, field selectable. Weight, 2.5 lbs.
table, J is iron constantan, K is chromel alumel.



TIME PROPORTIONING CONTROLLERS

me basic unit as above but control circuitry provides proportional action from relay
tput; ratio of relay "on" time to "off" time is proportional to deviation from set point.
as 5% PR band, manual reset adjust, time base of 8 seconds. Will not operate in limit/
rm mode.

Range °F	T/C	On/Off Limit Relay		On/Off, Limit SS Switch		Time PR Relay		Time PR SS Switch	
		API Number	Net Ea., Lots of 1-9*	API Number	Net Ea., Lots of 1-9*	API Number	Net Ea., Lots of 1-9*	API Number	Net Ea., Lots of 1-9*
0–300	J	H2-0321-1100	$105.00	H2-0321-3100	$115.00	H2-0321-2100	$125.00	H2-0321-5100	$135.00
0–500	J	H2-0521-1100	105.00	H2-0521-3100	115.00	H2-0521-2100	125.00	H2-0521-5100	135.00
0–800	J	H2-0821-1100	105.00	H2-0821-3100	115.00	H2-0821-2100	125.00	H2-0821-5100	135.00
0–1000	J	H2-1021-1100	105.00	H2-1021-3100	115.00	H2-1021-2100	125.00	H2-1021-5100	135.00
0–2000	K	H2-2022-1100	105.00	H2-2022-3100	115.00	H2-2022-2100	125.00	H2-2022-5100	135.00
0–2500	K	H2-2522-1100	105.00	H2-2522-3100	115.00	H2-2522-2100	125.00	H2-2522-5100	135.00

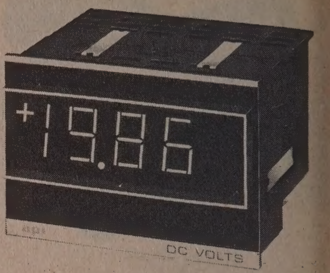
Deduct 5% for lots of 10–24.

api DIGITAL PANEL METERS AND DIGITAL DISPLAYS

CORPORATIO

MODEL 4304 DIGITAL PANEL METERS

Precision digital panel meters with ⅞″ high neon 7-bar segmented display for excellent readability. Offer high accuracy and distinctive styling in a compact unit, extending only 2⅛″ behind panel (with remote-mounted power supply). Front mounting, or slim-line rear mounting with integral bezel. Power supply can be remote-mounted or attached to meter. Standard features include: T²L/DTL compatible BCD output with printed circuit connector; autopolarity; up to 1000 megohms input impedance; display hold; print command; programmable decimal points; dual slope integration. Input connections by screw terminals or standard printed circuit card connector.



- **7½″ High Digital Segment 7-bar Display**
- **Remote or Rear-mounted Power Sup**

SPECIFICATIONS

Accuracy: Voltage, ±0.1% of reading, ±1 digit; current, ±0.25% full-scale. **Reading Rate:** 5 readings per second typical. **Display:** 3 digits with "1" over-range plus over-range indicator; neon lamps have 3 years rated life. **Over-Range:** 100%. **Resolution:** 0.05%. **Common Mode Rejection:** 100 dB (DC to 60 Hz with 1K ohm unbalance). **Normal Mode Rejection:** 30 dB (60 Hz). **Input Isolation:** 500 volts DC. **Full-Scale Response:** 0.5 second. **Decimal Points:** Selected by jumper on BCD connector. **Output:** BCD, logical "0" +0.4 V max.; logical "1" +4 V; print command; display hold; polarity; over-range. **Operating Temperature:** 0° C to +45° C. **Controls:** Zero and full scale (front panel). **Power Required:** 117 VAC (±10%), 50–60 Hz; 7 watts. **Size:** 4½″ wide x 3″ high; 4¾″ deep behind panel (including power supply).

MODEL 4304 3½-DIGIT PANEL METERS

DC Range	Impedance, Ohms	API Number	Net Each, Lots of 1-9	10-24
0–199.9 mV	100 meg	4304-4700-0200	$245.00	$220.50
0–1.999 V	1000 meg	4304-0401-0200	245.00	220.50
0–19.99 V	10 meg	4304-4301-0200	245.00	220.50
0–199.9 V	10 meg	4304-7701-0200	245.00	220.50
0–1000 V	10 meg	4304-9001-0200	245.00	220.50

DC Range	Impedance, Ohms	API Number	Net Each, Lots 1-9	10-2
0–19.99 μA	10,000	4304-0802-0200	$245.00	$220.5
0–199.9 μA	1000	4304-4702-0200	245.00	220.5
0–1.999 mA	100	4304-1003-0200	245.00	220.5
0–19.99 mA	10	4304-4303-0200	245.00	220.5
0–199.9 mA	1	4304-7703-0200	245.00	220.5

DIGITAL PANEL METER ACCESSORIES

API No. 1126-278 Interconnecting Cable—Connects remote power supply to display. 12″ long. Net Each.................... **$8.50**

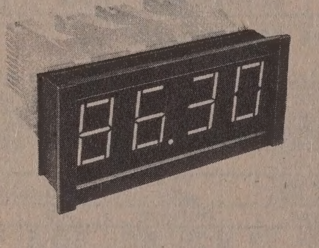
API No. 1126-279 Interconnecting Cable—24″. Net Ea... **8.50**

API No. 1125-244 Input Connector—Net Each......... **$3.5**

API No. 1125-246 BCD Connector—Net Each.......... **3.5**

API No. 1125-208 Bezel Trim—For rear mtg. Net Each.. **1.5**

MODEL 4340 SEGMENTED DIGITAL DISPLAYS



Complete translator in a compact modular package for low-cost counters and digi readouts. Offers superior readability combined with unique MOS integrated circu providing an up-down counter, memory and decoder-driver, all in one unit. Featu 7-bar display with ⅞″ high digits that can be read over wide angles, at distances up 40 feet; DTL/T²L compatible BCD output; serial or parallel input; decimal point; pu count; count storage and direction control; carry output for cascading in multiple-di displays. Neon lamps rated at 2 years life for high reliability. Mounting hardware av able for displays up to 14 digits.

SPECIFICATIONS

Supply Voltages: +4.5 to 5.5 VDC at 10 mA; −12 V to −15 VDC at 22 mA with BCD load; +175 V halfwave rectified DC at 20 mA. **BCD Code:** 8-4-2-1. **Input Driv** Logical "0", 0 to +0.4 V at 0.3 mA; logical "1", 3.3 to 5 V at 0.4 mA. **BCD Outp** Logical "0", +0.4 V max., current sink at 1.6 mA; logical "1", +4 V at 50 μA. **Characte** ⅞″ high x ½″ wide. **Operating Temp.:** 0° C to +60° C.

Model 4340A—Complete segmented digital display, including the integrated circu Size, ⅞″ w. x 3½″ d. x 1⅜″ h.

Model 4340B—Display for the digit one with decimal point.

Model 4340C—Polarity display.

- **7-bar Display of ⅞″ Digits for Wide-Angle, Distant Readings**
- **MOS IC Up-Down Counter, Decoder-Driver and Memory**
- **Neon Lamp Has 2-year Life Reliability**

Model	API Number	Description	Net Each, Lots of 1-9	10-24	25-49
4340A	1821-38	Complete display	$25.00	$22.50	$21.2
4340B	1821-40	"1" digit display	10.00	9.00	8.5
4340C	1821-41	Polarity display	10.00	9.00	8.5
....	1125-212	8 digit mounting hardware	4.00	3.60	3.4
....	1125-213	4 digit mounting hardware	2.50	2.25	2.1
....	345-238	Connector	3.50	3.15	3.0

MODEL 4302 DIGITAL SYSTEMS PANEL METERS

- **Buffered and isolated BCD output for direct systems coupling**
- **Drives up to 8 TTL loads, fully latched and buffered**
- **Easy readability**
- **Front or rear panel mounting**
- **Separate power supply**
- **Autopolarity**
- **0.1% accuracy**
- **Display hold**
- **1000 megohms input resistance**
- **Programmable decimal points**

DC VOLTAGE PANEL METERS

Ranges	API Number	Net Each, Lots of 1-9	10-24
0–19.99 mV	4302-0800-0200	$360.00	$324.00
0–199.9 mV	4302-4700-0200	325.00	292.50
0–1.999 Volts	4302-0401-0200	325.00	292.50
0–19.99 Volts	4302-4301-0200	325.00	292.50
0–199.9 Volts	4302-7701-0200	325.00	292.50
0–1000 Volts	4302-9001-0200	325.00	292.50

DC CURRENT PANEL METERS

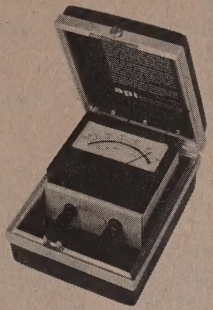
Ranges	API Number	Net Each, Lots of 1-9	10-24
0–19.99 μA	4302-0802-0200	$325.00	$292.50
0–199.9 μA	4302-4702-0200	325.00	292.50
0–1.999 mA	4302-1003-0200	325.00	292.50
0–19.99 mA	4302-4303-0200	325.00	292.50
0–199.9 mA	4302-7703-0200	325.00	292.50

Additional Digital Panel Meters on Pages 428, 452 and 490

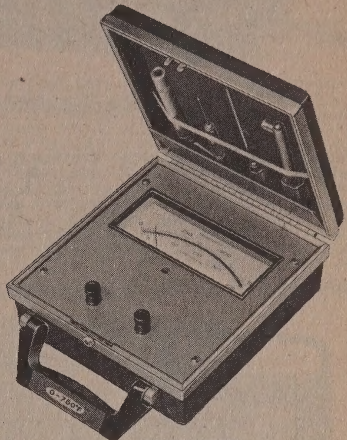
PORTABLE PYROMETERS AND PROBES

PORTABLE PYROMETERS

hermocouple-actuated portable pyrom-ters in two sizes have rugged taut-band eters with 1% accuracy, full compensa-on for ambient temperature changes, mir-red scales calibrated in both ° F and C for easy reading. Completely self-ntained; no power needed. Cases are uminum trimmed gray ABS plastic with air finish. Both models are calibrated for 85 ohms thermocouple resistance (Type thermocouples, listed below). Bimetal ad thermistor compensation. **Model 6020** as 6″ meter for excellent readability. arrying case lid has storage space for veral probes. Thin-front meter is mounted ehind a gasketed glass window. Size, 3″ x 8″ x 3.3″. Shipping Weight, 1½ lbs. **odel 3030** is convenient pocket size, 5.5″ 2.3″ x 5.8″. Storage space beside meter r one probe and handle. Shipping Weight, lb.

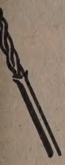

Model 3030

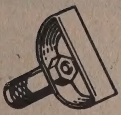
- **1% Accuracy, Taut-Band Meters With Mirrored Scales For Easy Reading**
- **Full Compensation For Ambient Temperature Changes**

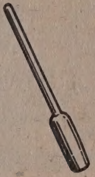

Model 6020

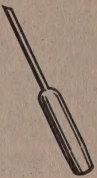
Range		Model 6020		Model 3030	
° F	° C	API Number	Net Each	API Number	Net Each
-200° to +100°	−130° to +140°	6020-5004-0000	$91.00	3030-5004-0000	$73.00
−75° to +225°	−60° to +110°	6020-5404-0000	91.00	3030-5404-0000	73.00
0° to +300°	−15° to +150°	6020-6104-0000	91.00	3030-6104-0000	73.00
0° to +500°	0° to +260°	6020-6704-0000	91.00	3030-6704-0000	73.00
100° to +600°	−70° to +310°	6020-7224-0000	91.00	3030-7224-0000	73.00
0° to +800°	−20° to +430°	6020-8004-0000	91.00	3030-8004-0000	73.00
100° to +1100°	−70° to +550°	6020-8334-0000	91.00	3030-8334-0000	73.00
0° to +1500°	0° to +800°	6020-8604-0000	91.00	3030-8604-0000	73.00

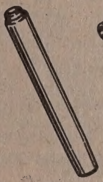
THERMOCOUPLE PROBES

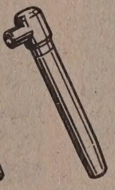

eaded wire

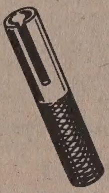

Roller surface


General purpose


Needle


Straight surface


Rt.-angle surface

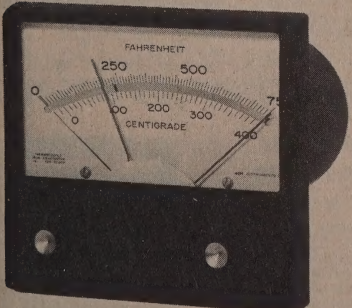

Extension handle

Type E probes with resistance of 3.85 ohms, for Model 6020 or 3030 pyrometers, above. Chromel-Constantan stranded wire with stainless steel braided armor, approx. 3-foot lead length. Optional extension handle is knurled gold anodized aluminum. Completely interchangeable; can be used with any listed portable pyrometer.

Description	API Number	Net Each
Beaded wire	2057-11	$ 6.00
Roller surface	2057-10	30.00
Straight surface	2057-7	30.00
Right-angle surface	2057-8	35.00
Needle	2057-9	30.00
General purpose	2057-6	30.00
Extension handle	1260-20	7.50

MODEL 503-E ELECTRONIC PANEL METERS

- **±1% accuracy full scale**
- **Sensitivity—one megohm per volt**
- **Fast response—one second full scale**
- **Rugged—high torque 1 mA meter**



imensionally and electrically identical to ompack IV above, but without controller rcuitry. Accuracy: ±1% (except as other-ise noted). Size: 4.71″ wide, 4.27″ high; ody 2.79″ dia. x 5.500″ deep.

DC MILLIVOLTMETERS

Range	Impedance, Ohms	API Number	Net Each, Lots of	
			1-9	10-24
0–1 mV*	1000	53-9600-0800	$102.00	$91.80
0–5 mV	5000	53-0000-0800	102.00	91.80
0–10 mV	10,000	53-0400-0800	102.00	91.80
0–50 mV	50,000	53-1800-0800	102.00	91.80

DC MICROAMMETERS

Range	Impedance, Ohms	API Number	Net Each, Lots of	
			1-9	10-24
0–1 μA*	10,000	53-9602-0800	$102.00	$ 91.80
0–5 μA	2000	53-0002-0800	102.00	91.80
0–10 μA	1000	53-0402-0800	102.00	91.80
5–0–5 μA	1000	53-0422-0800	112.50	101.25
0–50 μA	200	53-1802-0800	102.00	91.80
0–100 μA	100	53-3602-0800	102.00	91.80
50–0–50 μA	100	53-3622-0800	112.50	101.25

DC MILLIAMMETER

Range	Impedance, Ohms	API Number	Net Each, Lots of	
			1-9	10-24
0–1 mA	10	53-0003-0800	$102.00	$91.80

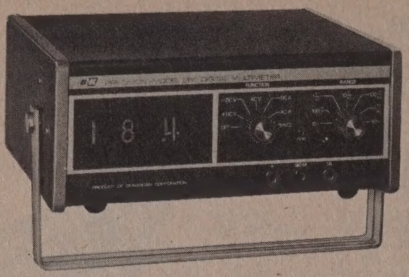
PYROMETERS

Range		Thermocouple Type	API Number	Net Each, Lots of	
° F	° C			1-9	10-24
−25° to +125°*	−30° to +50°*	Type J (I/C)	53-6344-0800	$123.50	$111.15
0° to +150°*	−20° to +66°*	Type J (I/C)	53-6304-0800	123.50	111.15
0° to +300°	−15° to +150°	Type J (I/C)	53-6904-0800	123.50	111.15
0° to +500°	0° to +260°	Type J (I/C)	53-7604-0800	123.50	111.15

*Accuracy ±2%.

B&K Industry Standard Meters

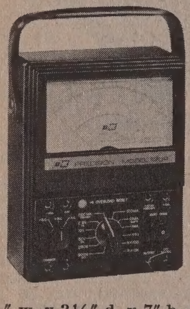
MODEL 281 2½ DIGIT DIGITAL VOM



Solid state digital multimeter offers speed, accuracy and stability. Virtually eliminates reading errors. Has 100% overrange capability with positive out-of-range indication. Also indicates wrong polarity. Large, 2½ digit display with automatically positioned decimal point. Input impedance, 10 megohms. DC accuracy, 1%. Reads DC and AC volts, DC current, AC current and ohms. PR-21 probe with switchable 100K ohm resistor. **Power Required:** 105–125 VAC. **Size:** 9″ w. x 7″ d. x 3½″ h. Shipping Weight, 5 lbs.

B&K Model 281 Digital VOM—Net Each.......... **$170.00**

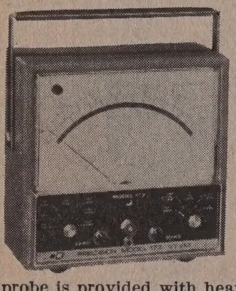
MODEL 120P 20,000 OHMS/VOLT VOM



Accurate, rugged and versatile, the Model 120P reads DC volts and current with 0.25 volt and 50 microamp low-range scales; AC rms volts, output volts, dB, and ohms. Resettable, electronic overload protection circuit prevents accidental destruction of instrument, shunts, multipliers, meter, pointer and sensitive rectifier. Has total of 31 ranges. Has TRANSIT position on range switch. Convenient easy-access battery and fuse compartment. Includes leads and batteries. **Size:** 5¼″ w. x 3⅛″ d. x 7″ h. Shipping Weight, 4 lbs.

B&K Model 120P VOM—Net Each.................. **$90.00**

MODEL 177 VACUUM TUBE VOLTMETER



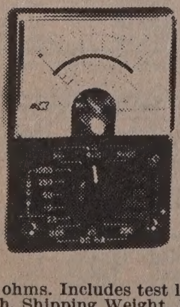
Highly versatile, rugged "old-stand-by" vacuum tube voltmeter features a built-in DC supply for resistance ranges—no ohmmeter battery required. Has 30 ranges, DC/AC/rms volts, resistance. Separate peak-to-peak and rms scales. Special calibration on low AC ranges. Large, 7″ mirrored scale offers high accuracy. Input resistance, 11 megohms. High impact Cycolac® DC/AC/Ohms test probe is provided with heavy-duty switch. **Power Required:** 117 VAC, 50/60 Hz. **Size:** 7¼″ w. x 3⅝″ d. x 7⅛″ h. Shipping Weight, 8 lbs. ®Reg. Borg-Warner trademark.

B&K Model 177 VTVM—Net Each................ **$100.00**

AV-1A RF Probe—Extends frequency range to 250 MHz. Shipping Weight, 1 lb. Net Each................................ **$8.00**

AV-2A High-Voltage Probe—Extends DCV range to 60,000 volts. Shipping Weight, 1 lb. Net Each.................... **$15.00**

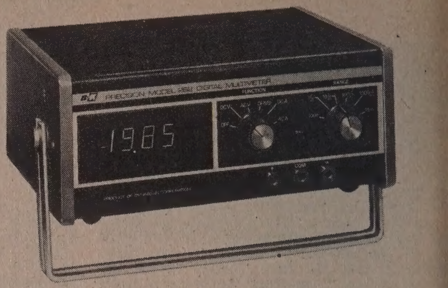
NEW MODEL 101 20,000 OHMS/VOLT MINIATURE VOM



Miniature in size and in price, but surprisingly big in performance. Miniature VOM offers accuracy, readability and dependability. Meter scales are simplified for fast, accurate reading—no diagonally shifted calibration marks or odd scale locations. Has mirrored scale to eliminate parallax. Reads DC and AC volts, DC current, ohms and decibels. VDC scale, 0.25 in 50-μA position for semiconductor junction differential measurements. Accuracy, ±3% full scale on all ranges; 3° of arc on ohms. Includes test leads and batteries. Size, 3½″ w. x 2″ d. x 5″ h. Shipping Weight, 1½ lbs.

B&K Model 101 Miniature VOM—Net Each......... **$23.00**

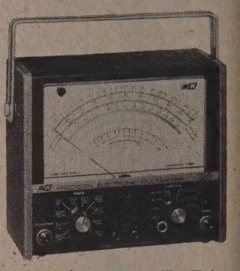
NEW MODEL 282 3½ DIGIT DIGITAL VOM



Model 282 digital VOM features 3½ digits, .5% accuracy an automatic polarity. Also features positive out-of-range indicatio Has 100% overrange capability on all ranges. Large, bright, eas to-read 7 segment display. All solid state circuitry. Input impe ance, 10 megohms. Reads DC and AC volts, DC and AC curren and ohms. Accuracy, DC volts: ±0.5%, ±1 digit. Full overloa protection on all ranges. Three-position handle doubles as stan for eye-level viewing. **Power Required:** 105–125 VAC, 50–60 H **Size:** 9″ w. x 7″ d. x 3½″ h. Includes PR-21 probe with switchab 100K ohm isolation resistor. Shipping Weight, 5 lbs.

B&K Model 282 Digital VOM—Net Each........... **$200.0**

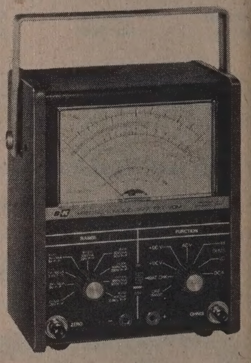
NEW MODEL 290 FET ELECTRONIC MULTIMETER



A check-out of the Model 290's features includes the following: Hi-Lo power ohms ranges; 15 megohms input impedance; 7″ meter with 100° scale arc; 50 mV full-scale sensitivity, AC and DC; 50 μA current range; R x 0.1 ohm range with 1 ohm center scale; 75 ranges in all. Provides accuracy on DCV of 1.5% of full scale. Precision multipliers, 0.5%. Provides full protection for meter, FET inpu and circuits. Has zero center scale for FM alignment. **Pow Required:** 105–125 VAC, 50–60 Hz; 3.9 watts. Includes PR- probe with 100K ohm isolation resistor. **Size:** 8″ w. x 3⅝″ d. 7¼″ h. Shipping Weight, 6 lbs.

B&K Model 290 FET Multimeter—Net Each **$140.0**

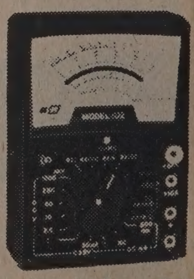
MODEL 277 FET ELECTRONIC MULTIMETER



Features 7 low-power and 7 high-power ohms ranges—valuable when checking ohms in semiconductor or IC circuits, plus 36 additional ranges for measuring AC and DC volts, DC current and dB. Has 1 μA DC current range for sensitive semiconductor leakage testing. Also has .1 volt AC/DC volts scale for measuring transistor bias. Circuitry is 100% solid state. FET input, current and resistance circuits are protected against overload. Includes PR-21 probe with switchable 100K ohm isolating resistor. **Power Required:** One 1.5 V "D" cell, one 9 V NEDA 1604 cell. **Size:** 7½″ w. x 3⅝″ d. x 7⅞″ h. Shipping Weight, 5 lb

B&K Model 277 Electronic Multimeter—Batteries not include Net Each...................................... **$100.0**

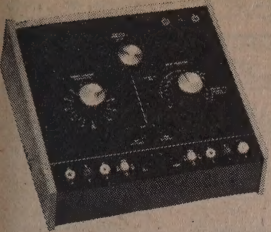
NEW MODEL 102 20,000 OHMS/VOLT COMPACT VOM



Slightly larger than Model 101 miniature VOM, the Model 102 offers more ranges, a total of 22, and wider ranges on DCB and ohms. Also has mirrored, simplified scales for fast, accurate reading; full-size banana jacks for dependable probe connections, sturdy metal case. DCV: 0.25–5000 V in 8 ranges. ACV: 10–1000 V in 4 ranges. DC current: 50 μA to 10 A in 5 ranges. Decibels: −20 to +36 dB. Accuracy, all ranges, ±3% full scale; ohms, 3° of arc. Complete, with test leads and batteries. Size, 4⅛″ w. x 2″ d. 5⅞″ h. Shipping Weight, 2 lbs.

B&K Model 102 VOM—Net Each.................. **$35.0**

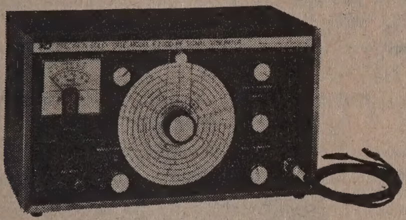
B&K Professional Test Equipment



MODEL 501-A SOLID STATE DEVICE CURVE TRACER

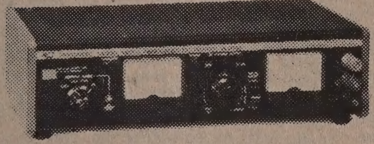
he Model 501-A is to solid state devices what the mutual conictance tube tester is to vacuum tubes. It's the best way to ıalyze semiconductors, by displaying their curves on the screen an auxiliary scope. Measures gain (beta); leakage, breakdown oltage (non-destructive), output admittance, etc. Tests J-FET's, IOSFET's, signal and power bipolar transistors, UJT's, diodes, iacs, SCR's, diodes. Electronic current limiting—no IR drops to fect curves. With FP-3 probe for in-circuit testing. **Power Reuired:** 105–125 VAC, 60 Hz. **Size:** 10″ w. x 9½″ d. x 4″ h. Shipng Weight, 6 lbs.
&K Model 501-A Curve Tracer—With cables, FP-3 probe.
et Each.......................................**$150.00**

MODEL E200D WIDE-RANGE RF GENERATOR



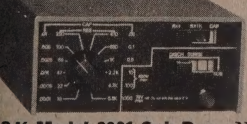
Iodel E200D offers 100% solid state circuitry, calibrated meter onitors, RF level and % modulation, zener-regulated power ıpply. Wide-range coverage provides 100 kHz to 54 MHz on ındamentals; 54–216 MHz on harmonics. Outputs: Unmodulated F; modulated RF; externally modulated RF; 400 Hz audio. ccuracy of better than 0.1% possible with internal crystal caliration. For trap, bandpass coil alignment; FM/AM receiver ignment; stage-by-stage amplifier gain tests; signal tracing. **ower Required:** 110–130 VAC, 50–60 Hz. **Size:** 12¾″ w. x 8″ d. x ⅛″ h. Shipping Weight, 16 lbs.
&K Model E200D RF Generator—Net Each......**$215.00**

NEW MODEL 1601 0-50 VOLTS REGULATED DC SUPPLY



rovides 0–50 VDC, continuously variable, over full range, with single control. Also, 0–2 amperes. Simplified current setting—bes not require application of short circuit to output terminals. ail-safe overload protection automatically shuts power supply own whenever current exceeds the preset level, and overload dicator on the front panel lights up. STANDBY switch disonnects load for safe, quick adjustments without disturbing ttings. **Regulation:** Load, .05% typical; line, .02% typical. **ipple:** 5 mV p-p max. **Power Required:** 105–125 VAC, 50–60 Hz. 'ith leads and instructions. **Size:** 14⅛″ w. x 10″ d. x 3⅞″ h. ıipping Weight, 13 lbs.
&K Model 1601 Regulated DC Supply—Net Each..**$170.00**

NEW MODEL 2901 SUB BOX

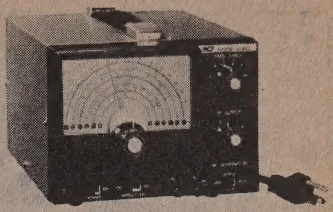


Ultra-compact substitution box. Has surge protection circuit described below, plus overload indicator for low-voltage electrolytics. Includes 24–10% carbon resistors, 1 watt and ½ watt; 9–100% capacitors, 500 and 600 VDC; 3 electrolytics. Size, 4¼″ w. x 4″ d. x 2″ h. Shpg. Wt., 2 lbs.
&K Model 2901 Sub Box—Net Each...............**$40.00**

HOW B&K'S SURGE PROTECTION CIRCUIT WORKS

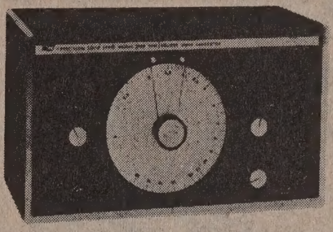
prevents the healing of a defective electrolytic by introducing a esistor in series with the sub capacitor, thus limiting the initial ırge. After the capacitor is fully charged, the resistor is taken out the circuit by moving the switch to the "SUB" position. After ıbstitution, the switch is returned to the "DISCH" position, ısuring safe discharge of the capacitor.

NEW MODEL 2050 RF SIGNAL GENERATOR



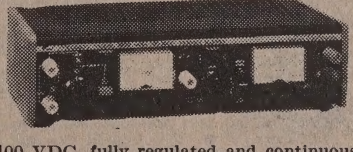
Very compact and lightweight, Model 2050 RF generator is easily portable. Provides 100 kHz to 30 MHz in 6 bands with 1.5% of dial setting accuracy. 100% solid state circuitry. Has FET's in RF and audio oscillator stages for greater stability and linearity. Lightweight, weighs only 5 lbs. Attenuator: Combination high-low switch, plus continuously variable RF output control. Outputs: RF, 400 Hz modulated RF and externally modulated RF. **Power Required:** 117–234 VAC, 50–60 Hz. Has 2.8 watts, 3-wire AC cord. With shielded leads with insulated clip and banana plug. **Size:** 7½″ w. x 9¾″ d. x 6⅛″ h. Shipping Weight, 7 lbs.
B&K Model 2050 RF Signal Generator—Net Each...**$100.00**

MODEL E310B SINE/SQUARE WAVE GENERATOR



Latest version of the industry standard. For service shops testing hi-fi equipment, for schools, laboratories, industry. Features all solid state circuitry, FET in oscillator, all silicon transistors. Step attenuation of both sine and square wave outputs. Extended ranges, constant-voltage output. Fully shielded. Easy-to-read 5″ dial with 12:1 gear ratio drive. **Power Required:** 110–130 VAC, 50–60 Hz. **Size:** 12¾″ w. x 8″ d. x 7¼″ h. Shipping Weight, 11 lbs.
B&K Model E350B Sine/Square Wave Generator—
Net Each.......................................**$140.00**

NEW MODEL 1602 0-400 VOLTS DC SUPPLY



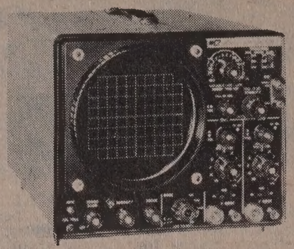
Provides 0–400 VDC, fully regulated and continuously variable over full range with a single control. Also, 0–200 milliamperes, fully regulated; 0–100 VDC bias at 2 mA; 6.3/12.6 VAC at 3.5 amperes. **400 VDC Regulation:** Load and line, 0.1%. **Noise and Ripple:** Less than 10 mV peak-to-peak. **Bias Voltage Regulation:** Load and line, 1%. **Protection:** 400 VDC supply, adjustable shutdown, 0–200 mA; bias supply, current-limiting resistance; filament supply, thermal circuit breaker. STANDBY switch disconnects supply from load without disturbing settings. Fail-safe overload protection shuts down power supply automatically whenever current exceeds preset level. To set current, no short-circuiting of output terminals is necessary. **Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 14⅛″ w. x 10″ d. x 3⅞″ h. Shipping Weight, 13 lbs.
B&K Model 1602 DC Supply—Net Each..........**$180.00**

NEW MODEL 2902 SUBSTITUTION MASTER

Saves valuable time by placing at your fingertips an array of 76 most-needed resistors and capacitors, plus a diode rectifier. Surge protection circuit described at left prevents arcing of electrolytics. Low-voltage electrolytics are protected by front-panel overload indicator. Select up to 7 components for simultaneous substitution. Includes 24 carbon resistors, 1 W and ½ W, ±10%; 20 power resistors, 20 W and 15 W, ±10%; 12 capacitors, 500 and 600 VDC, ±10%; 20 electrolytics, 450 and 76 VDC; 1 silicon diode rectifier, rated 1 amp at 600 peak inverse volts. Permits make-up of a complete power supply, or a voltage divider by using the Model 2902 components alone. Size, 10¾″ w. x 3⅝″ d. x 7¼″ h. Shpg. Wt., 4 lbs.
B&K Model 2902 Substitution Master—Net Each.....**$75.00**

B&K Oscilloscopes

MODEL 1470 DUAL-TRACE TRIGGERED SWEEP OSCILLOSCOPE



- **Compare inputs, outputs**
- **Six operating modes**
- **Large 5″ screen with illuminated scale**

Features dual display of waveforms, their sum or difference, for fast, easy comparison. Triggered and automatic sweep. TV sync separator circuit for TV-H and TV-V. Large 5″ screen with illuminated scale. An extremely versatile scope with a wide range of applications. 100% solid state. Bezel accepts standard camera mounting bracket. Complete with Mylar* vector overlay for Vectorscope function, tilt stand for convenient viewing. **Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 10″ w. x 17″ d. x 9″ h. Shipping Weight, 28 lbs. *Reg. DuPont Corp. trademark.

B&K Model 1470 Dual-Trace Oscilloscope—Less probes (2 required). Net Each.................................**$550.00**

PR-16 Combination 10:1/Direct Probe—Net Each... **15.00**

PR-20 Probe—Same, with spring-loaded tip. Net Ea.. **20.00**

MODEL 1470 SPECIFICATIONS

VERTICAL AMPLIFIERS (Ch. 1 and 2)

Sensitivity: 10 mV/cm to 20 V/cm, ±5%, divided into 11 ca
brated ranges. Concentric variable control between ranges. **R**
sponse: DC, DC to 10 MHz; AC, 2 Hz to 10 MHz (−3 dB
Operating Modes: Ch. 1 only; Ch. 2 only; ALTERNAT
CHOPPED; ADD; Ch. 2 invert. **Chopping Frequency:** 140 kH

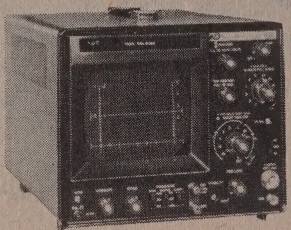
SWEEP SYSTEM

Type: Triggered and automatic. **Sweep Time:** 1 μsec to .1 sec/c
(±5%) in 16 steps, 1, 2, 5 sequence; concentric variable contr
between ranges. **Magnification:** 5 times at all speeds.

HORIZONTAL AMPLIFIER

Sensitivity: 30 mV/cm. **Response:** DC to 800 kHz (−3 dB).

MODEL 1465 OSCILLOSCOPE WITH EXCLUSIVE CALI-BRAIN® AND TRIGGERED SWEEP



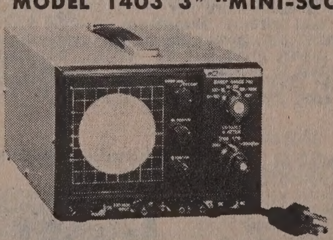
Another B&K first: Cali-Brain. Special CRT screen has 2 scales, one on each side; selecting your vertical attenuator range automatically lights up the correct scale and produces a digital readout of full scale volts above the screen. To read peak-to-peak volts faster and more accurately: **1,** get the pattern on the screen; **2,** pull out Cali-Brain knob (vertical position hold) which collapses the horizontal sweep and shifts the resulting vertical line to the proper scale; **3,** position the compressed waveform on the base line; **and, 4,** read the peak-to-peak volts directly off the screen. The 100% solid state circuitry also provides 10 MHz bandwidth, triggered sweep, automatic sync and front-panel Vectorscope capability. With tilt stand, less probe. **Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 10″ w. x 7″ d. x 9″ h. Shpg. Wt., 27 lbs.

B&K Model 1465 Oscilloscope—With probe.
Net Each.................................**$400.00**

PR-16 Combination 10:1/Direct Probe—Net Each... **15.00**

PR-20 Probe—Same, but with spring-loaded tip. Net. **20.00**

NEW MODEL 1403 3″ "MINI-SCOPE"

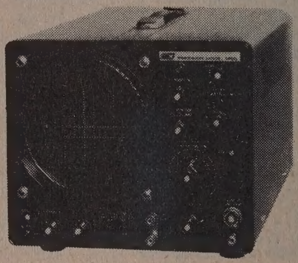


Latest addition to B&K pace-setting line of oscilloscopes is a 3″ solid state, highly reliable and ruggedly constructed "mini-scope." Compact size for field use. Attractive general purpose unit is ideal for most 'scope applications, especially monitoring on production line. **Vertical Sensitivity:** 20 mV/cm. **Response:** DC, DC to 2 MHz; AC, 2 Hz to 2 MHz (both −3 dB). **Max. Input:** 600 V peak-to-peak. **Input Impedance:** 1 megohm/30 pF. **Sweep:** Recurrent. **Time Base Ranges:** 10–100 Hz; 100–1 kHz; 1–10 kHz; 10–100 kHz; continuously variable between ranges. **Sync:** Internal and negative. **Power Required:** 117/234 VAC, 50–60 Hz, 15 watts, 3-wire grounded AC line cord. **Size:** 7⅜″ w. x 11¼″ d. x 5¼″ h. Shipping Weight, 11 lbs. With cable, spare fuse.

B&K Model 1403 3″ "Mini-Scope"—Net Each...... **$180.00**

B&K Model LC14 Case—Protective carrying case for Model 1403 "Mini-Scope". Net Each.................................**$10.00**

MODEL 1460 TRIGGERED SWEEP DELUXE OSCILLOSCOPE



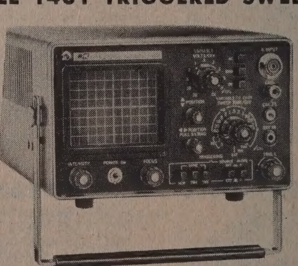
Fully automatic triggered sweep lets you view the entire composi
TV signal or any portion thereof, including the VITS and "ba
porch" of the horizontal sync pulse—all in perfect sync. Spec
sync separator circuit operates in all 19 triggered sweep positio
including TV-H and TV-V positions; switch back and forth fro
2 horizontal lines to 2 vertical fields with no other adjustmen
DC to 10 MHz bandwidth; 10 millivolts/cm sensitivity displa
smallest signal levels. DC amplifier permits measurement of A
and DC signal components. Has 1, 2, 5 steps on calibrated vertic
attenuator. Front-panel Vectorscope capability. Mylar vect
overlay and tilt stand. **Power Required:** 105–125 VAC, 50–60 H
Size: 10″ w. x 17″ d. x 9″ h. Shipping Weight, 27 lbs.

B&K Model 1460 Oscilloscope—Less probe. Net Each . **$430.0**

PR-16 Combination 10:1/Direct Probe—Net Each... **15.0**

PR-20 Probe—Same, with spring-loaded tip. Net Ea.. **20.0**

NEW MODEL 1431 TRIGGERED SWEEP 3″ SCOP



Compact 3″ scope has exceptional capabilities—triggered swee
automatic sync, DC to 10 MHz bandwidth. Small-sized sco
takes up little room on bench, is easy to handle and store. All sol
state circuitry. **Sensitivity:** 10 mV/DIV to 20 V/DIV; 11 ca
brated positions. **Response:** DC, DC to 2 MHz; AC, 2 Hz to
MHz. **Sweep:** Automatic and triggered. Sweep time, 0.5 μsec/c
Power Requirements: 50–60 Hz; 3-wire cord. **Size:** 7⅞″ w.
12⅞″ d. x 4¾″ h. Less probe. Shipping Weight, 11 lbs.

B&K Model 1431 Oscilloscope—Net Each.......... **$400.0**

PR-16 Combination 10:1/Direct Probe—Net Each... **15.0**

PR-20 Probe—Same, with spring-loaded tip. Net Ea.. **20.0**

B&K Model LC-31 Leather Cover/Carrying Case—Protecti
carrying case for Model 1431. Has compartment for probe.
Net Each.................................**$10.0**

J-B-T® VIBRATING REED FREQUENCY METERS

-B-T Vibrating Reed Frequency Meters are used extensively in radio, telephone and television ervice, on engine generator sets, in laboratories, in many types of electronic equipment— vherever constant or known frequency is important to efficient operation of equipment.

MODERN FB SERIES VIBRATING REED FREQUENCY METERS

Aodern style; made for easy reading to full limit of accuracy. Permanently calibrated; no emperature compensation needed. Screw term. Typical models listed; others available on order.

J-B-T Model	Range, Hz	No. of Reeds	Standard Voltage	Imped., Ohms	Accuracy ± %	Case Size	Net Each
30-FB	48–52 & 58–62	10	100–130	16,500	0.3	3½″	**$36·50**
31-FB	58–62	5	100–130	16,500	0.3	3½″	**30·25**
33-FB	380–420	9	100–130	15,400	0.3	3½″	**43·90**
34-FB	56–64	9	100–130	16,500	0.3	3½″	**36·00**
34-FB-Z-11	57.5–62.5	11	100–130	16,500	0.3	3½″	**39·60**
34-FB-21	45–64	21	100–130	21,800	0.3	3½″	**48·80**
34-FB-21-115	380–420	21	100–130	15,400	0.3	3½″	**53·80**

ROUND MOLDED AND METAL CASE REED METERS

HXX models, sealed meters, glass-to-metal construction with solder terminals and detachable ange; **F** models unsealed metal case; **FX** models molded case.

J-B-T Model	Range, Hz	No. of Reeds	Standard Voltage	Ohms per Volt	Accuracy ± %	Case Size	Net Each
0-FX	48–52 & 58–62	10	100–130	140	0.3	3½″	**$34·00**
1-F	58–62	5	100–130	115*	0.3	3¼″	**30·70**
1-FX	58–62	5	100–130	120	0.3	3½″	**28·75**
1-FHXX	58–62	5	100–130	120	0.3	3½″	**35·15**
3-F	380–420	9	100–130	130*	0.3	3¼″	**42·75**
3-FX	380–420	9	100–130	130	0.3	3½″	**41·50**
3-FHXX	380–420	9	100–130	130	0.3	3½″	**48·25**
4-FX	56–64	9	100–130	140	0.3	3½″	**33·20**
6-FHXX-21-115	380–420	21	100–130	130	0.3	3½″	**60·00**

At 120 VAC. †±0.1% accuracy available, quotation on request.

MODERN DESIGN FG SERIES FREQUENCY METERS

Aodern appearance with bright textured metal insert below the dial, as illustrated for model 1-EGW-5 elapsed time meter. Has same accuracy and electrical characteristics as corresponding X frequency meters. Design easily installs in 3½″ wide, 3″ high hole. Three typical FG models sted below, others available on order.

30-FG	48–52 & 58–62	10	100–130	140	0.3	3½″	**$35·80**
33-FG	380–420	9	100–130	130	0.3	3½″	**43·25**
34-FG	56–64	9	100–130	140	0.3	3½″	**35·60**

NEW HIGH VISIBILITY EG SERIES ELAPSED TIME METERS

Vew modern style, matches the look of the new FG series frequency meters. Dimensions are ame as those for FG series meters, while mechanical specifications match 31-EXW series meters, see below). Models listed are examples; other voltages, frequencies and numerals on request.

-B-T Model 31-EGW-5—Five wide digits, 0–9,999.9 hours, 60 Hz, 110–125 V. Net Each. **$23·75**

-B-T Model 31-EGW—Six wide digits, 0–99,999.9 hours, 60 Hz, 110–125 V. Net Each.. **24·25**

-B-T Model 13A-234—Half bezel adapter, separate black molded frame and hardware for icture window appearance on any FG or EG meter. Net Each........................**$2·75**

-B-T Model 13A-239—Same as above, but metal construction for FG and EG meters. Vet Each..**$2·75**

LAPSED TIME AND 5-REED FREQUENCY METERS 31-FE AND 31-FEX-1

This unique panel instrument combines the elapsed time or running time meter with frequency eeds. It is widely used on motor generator sets and on electrical equipment where maintenance outine calls for periodic servicing. Reads 0–9,999.9 hours; 58–62 hertz at 100–130 volts. Self-tarting. Tenths shown in red numerals, all others white numerals on black background. Meter anel 2⁹⁄₁₆″ (2⅝″ panel mounting hole recommended); depth behind flange, 4¹⁹⁄₃₂″. Front mounting ame as Model 31-F. Variations with 7, 9 or 11 reeds on special order only. 3¼″ metal case.

-B-T Model 31-FE— Vet Each.. **$\$44^{00}$**

-B-T Model 31-FEX-1—Same, but with 3½″ metal flange permanently attached for AIL-M-6B mounting. Net Each.................................... **$\$48^{00}$**

0-Hz ELAPSED TIME METERS 31-EX, 31-EX-200, 31-ES, AND 31-EHXX

o record operating time of AC electrical and electronic equipment, instrument registers in 1/10th our steps to 9,999.9 hours, then automatically resets. Shows tenths in red numerals, all others vhite on black background. Molded case fully encloses all parts. Popular for tube life, TV equipment, punch presses, conveyors, oil burners, maintenance schedules, etc. Meter panel 2¹¹⁄₁₆″ (2¾″ ole recommended); depth behind flange, 3⁷⁄₃₂″.

-B-T Model 31-EX—110–125 volt. Net Each.............................. **$\$20^{00}$**

-B-T Model 31-EX-200—200–240 volt. Net Each..........................**$21·25**

-B-T Model 31-ES—(Square case 3″ x 3″) 110–125 volts. Vet Each.. **$\$20^{75}$**

-B-T Model 31-EHXX—Same as Model 31-EX, but ruggedized and sealed case. Has glass-to-netal sealed construction with flat front and 3½″ dia. separable flange. Heavy-duty solder erminals. Vacuum chamber checked. Max. 1000 V rms between terminals and case. Barrel dia. ¹¹⁄₁₆″ to fit 2¾″ panel hole with 2⅞″ depth behind panel. Three flange holes take 6-32 crews on 1.58″ radius. Net Each.................................. **$\$26^{25}$**

400-Hz SEALED, ELAPSED TIME METER MODEL 33-EHXX

Stable 400-Hz elapsed time meter in 3½″ flanged case. Fully enclosed design has sealed, glass-o-metal construction with flat glass front. Reads 0–9,999.9 hours in 1/10th-hour steps; 110–125 olts, 400 Hz. Case slightly larger than 31-EHXX.

-B-T Model 33-EHXX—Net Each.. **$\$112^{25}$**

WIDE NUMERAL, ELAPSED TIME METER MODELS 31-EXW AND 31-EXW-5

Combines basic Model 31-EX (see above) with easily-read, wide 6-digit face design. Distinctive, contemporary dial shows tenths in red on white; units in white on black. Six digits read 0–9,999.9 hours, then automatically resets; 110–125 volts, 60-Hz operation. Black, molded 3½″ ase interchangeable with FX Series meters.

-B-T Model 31-EXW—Net Each.. **$\$20^{50}$**

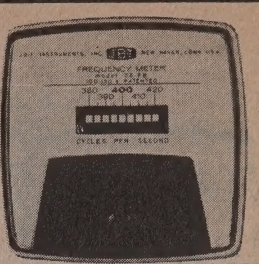
-B-T Model 31-EXW-5—New model interchangeable electrically and mechanically with 31-EX nd 31-EXW. Five wide digits, registers 0–9,999.9 and automatically resets. For 60 Hz, 10–125 volts. Net Each.. **$\$19^{15}$**

400-Hz BROAD AND VERNIER INDICATOR 41-FX-42 (NOT ILLUS.)

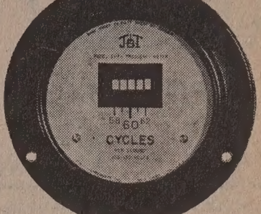
Widely used in commercial and military testing, this combination unit provides two windows: Broad 300–500 Hz, 21 reeds in 10-Hz steps; and, for a vernier effect, 380–420 Hz with 21 reeds n 2-Hz steps. Back molded case has flush front; 4³⁄₆₄″ w. x 4³⁄₆₄″ h. x 2¹⁷⁄₃₂″ depth behind panel, ver studs.

-B-T Model 41-FX-42—Standard model for 100–130 volts. Net Each............ **$\$144^{00}$**

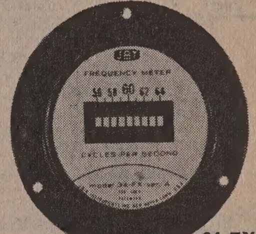
-B-T Model 41-FX-42—Special, with 4 studs for 200–240 (7.7 watts), 115 (4.5 watts) nd 30 volts (2 watts). Net Each.. **$\$162^{00}$**



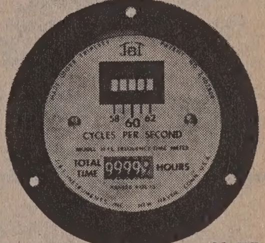
33-FB



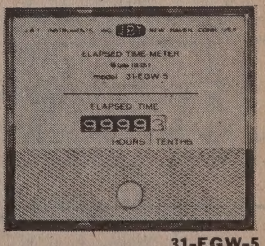
31-FX



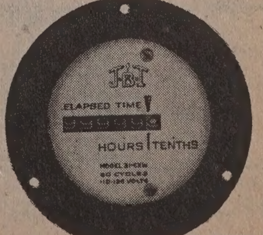
34-FX Series A



31-FE

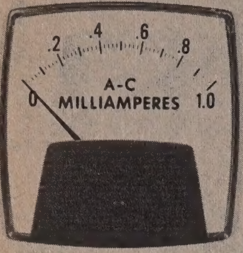


31-EGW-5

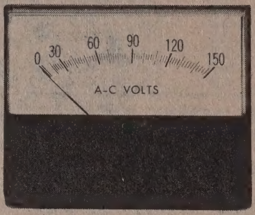


31-EXW

SERIES 250 AND 251 AC PANEL METERS



250 BIG LOOK®



251 HORIZON LINE®

Handsome, easy-to-read meters in two styles for all panel an control applications. All meters meet ANSI specifications C-39.1 **Accuracy:** AC iron vane type, ±2% FS; AC rectifier type, ±3 FS; expanded scale voltmeters, ±0.5% of mid-span. **Overload** AC voltmeters, 20% momentary and sustained; AC ammeter (momentary), 10 times the rated current for 10 consecutiv intervals of ½ sec with one minute interval between successiv applications; AC ammeters (sustained), 20% for 8 hours. **Scal Data:** 90° rotation. **Insulation Level:** 2600 V rms hi-pot. **Burde Data:** AC ammeters, 5 amps, 0.5 VA, 0.5 power factor lagging AC voltmeters, unity power factor. **Response Time:** 2.5 second max. **Damping:** 40% max. overshoot with 2.5 minimum damp ing factor.

Size	250 BIG LOOK® Scale Length	251 HORIZON LINE Scale Length
1½″	1.32″	1.50″
2½″	2.06″	2.06″
3½″	2.88″	2.88″
4½″	3.93″	3.93″

AC VOLTMETERS—SELF-CONTAINED, IRON VANE TYPE, PIVOT AND JEWEL

Scale Volts	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9			251 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-250244§	3½-inch GE No. 50-250344§	4½-inch GE No. 50-250444§	2½-inch GE No. 50-251244§	3½-inch GE No. 50-251344§	4½-inch GE No. 50-251444§
3	11.1	LJLJ	$17.60	$18.40	$21.60	$17.60	$18.40	$21.60
5	29	LSLS	17.60	18.40	21.60	17.60	18.40	21.60
10	110	MTMT	17.60	18.40	21.60	17.60	18.40	21.60
15	251	NDND	17.60	18.40	21.60	17.60	18.40	21.60
30	779	NLNL	17.60	18.40	21.60	17.60	18.40	21.60
50	2500	NTNT	18.40	19.20	22.40	18.40	19.20	22.40
150	15000	PZPZ	19.20	20.80	24.00	19.20	20.80	24.00
300	70260	RXRX	21.60	22.40	25.60	21.60	22.40	25.60
500	117260	SFSF	....	28.00	31.20	....	28.00	31.20
600	140000	SJSJ	....	28.00	31.20	....	28.00	31.20

AC MICROAMMETERS AND MILLIAMMETERS—RECTIFIER TYPE, TAUT BAND, ±3% ACCURACY

Scale	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50-250110§	2½-inch GE No. 50-250210§	3½-inch GE No. 50-250310§	4½-inch GE No. 50-250410§	1½-inch GE No. 50-251110§	2½-inch GE No. 50-251210§	3½-inch GE No. 50-251310§	4½-inch GE No. 50-251410§
500 μA	850	EMEM	$24.00	$24.00	$24.80	$28.00	$24.00	$24.00	$24.80	$28.00
800 μA	620	EWEW	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
1 mA	555	FAFA	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
1.5 mA	344	FDFD	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
2 mA	294	FGFG	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
3 mA	212	FNFN	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
5 mA	148	FXFX	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
10 mA	91	GZGZ	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00
20 mA	63	HFHF	24.00	24.00	24.80	28.00	24.00	24.00	24.80	28.00

AC MILLIAMMETERS—SELF-CONTAINED, PIVOT AND JEWEL, 25-400 Hz

Scale mA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9			251 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-250240§	3½-inch GE No. 50-250340§	4½-inch GE No. 50-250440§	2½-inch GE No. 50-251240§	3½-inch GE No. 50-251340§	4½-inch GE No. 50-251440§
10	2158	GZGZ	$18.40	$19.20	$22.40	$18.40	$19.20	$22.40
25	341	HJHJ	18.40	19.20	22.40	18.40	19.20	22.40
50	84	HYHY	18.40	19.20	22.40	18.40	19.20	22.40
100	21	JRJR	18.40	19.20	22.40	18.40	19.20	22.40
200	4.1	KAKA	18.40	19.20	22.40	18.40	19.20	22.40
500	0.7	KMKM	18.40	19.20	22.40	18.40	19.20	22.40

AC AMMETERS—SELF-CONTAINED, PIVOT AND JEWEL, 25-400 Hz

Scale Amps	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9			251 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-250240§	3½-inch GE No. 50-250340§	4½-inch GE No. 50-250440§	2½-inch GE No. 50-251240§	3½-inch GE No. 50-251340§	4½-inch GE No. 50-251440§
1	0.16	LALA	$18.40	$19.20	$22.40	$18.40	$19.20	$22.40
3	0.015	LJLJ	18.40	19.20	22.40	18.40	19.20	22.40
5	0.007	LSLS	18.40	19.20	22.40	18.40	19.20	22.40
8	0.003	MJMJ	18.40	19.20	22.40	18.40	19.20	22.40
10	0.0024	MTMT	18.40	19.20	22.40	18.40	19.20	22.40
15	0.0016	NDND	18.40	19.20	22.40	18.40	19.20	22.40
20	0.001	NGNG†	19.20	20.80	24.00	19.20	20.80	24.00
30	0.0006	NLNL†	19.20	20.80	24.00	19.20	20.80	24.00
50#	0.0004	NTNT†	....	22.40	25.60	....	22.40	25.60
80#	0.0004	PDPD†	....	25.60	28.80	....	25.60	28.80

†With external magnetic shield on meter base. §**When ordering show complete number;** example: **50-250244 LJLJ** for 250 BIG LOOK 2½″ AC voltmeter, pivot and jewel iron vane type. #Without sealed terminal studs.

Contact us for availability of additional ratings.

GENERAL ELECTRIC Panel Meters

SERIES 250 AND 251 AC PANEL METERS (CONT'D)

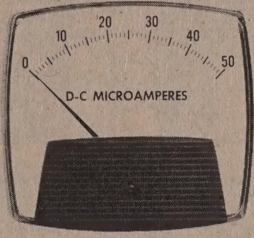
AC AMMETERS—TRANSFORMER-RATED, 0-5 AMPS, 25-400 Hz, PIVOT AND JEWEL

Scale Amps	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK® Net Each, Lots of 1-9			251 HORIZON LINE® Net Each, Lots of 1-9		
			2½-inch GE No. 50-250240§	3½-inch GE No. 50-250340§	4½-inch GE No. 50-250440§	2½-inch GE No. 50-251240§	3½-inch GE No. 50-251340§	4½-inch GE No. 50-251440§
10	0.007	LSMT	$18.40	$19.20	$22.40	$18.40	$19.20	$22.40
15	0.007	LSND	18.40	19.20	22.40	18.40	19.20	22.40
20	0.007	LSNG	18.40	19.20	22.40	18.40	19.20	22.40
30	0.007	LSNL	18.40	19.20	22.40	18.40	19.20	22.40
40	0.007	LSNP	18.40	19.20	22.40	18.40	19.20	22.40
50	0.007	LSNT	18.40	19.20	22.40	18.40	19.20	22.40
75	0.007	LSPB	18.40	19.20	22.40	18.40	19.20	22.40
80	0.007	LSPD	18.40	19.20	22.40	18.40	19.20	22.40
100	0.007	LSPK	18.40	19.20	22.40	18.40	19.20	22.40
150	0.007	LSPZ	18.40	19.20	22.40	18.40	19.20	22.40
200	0.007	LSRL	18.40	19.20	22.40	18.40	19.20	22.40
300	0.007	LSRX	18.40	19.20	22.40	18.40	19.20	22.40
400	0.007	LSSC	18.40	19.20	22.40	18.40	19.20	22.40
500	0.007	LSSF	18.40	19.20	22.40	18.40	19.20	22.40
600	0.007	LSSJ	18.40	19.20	22.40	18.40	19.20	22.40
800	0.007	LSSN	18.40	19.20	22.40	18.40	19.20	22.40
1.0 kA	0.007	LSVA	18.40	19.20	22.40	18.40	19.20	22.40
1.2 kA	0.007	LSVB	18.40	19.20	22.40	18.40	19.20	22.40
1.5 kA	0.007	LSVC	18.40	19.20	22.40	18.40	19.20	22.40
2.0 kA	0.007	LSVE	18.40	19.20	22.40	18.40	19.20	22.40
3.0 kA	0.007	LSVJ	18.40	19.20	22.40	18.40	19.20	22.40

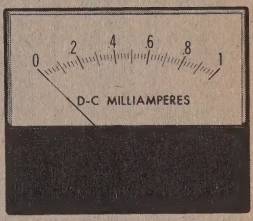
SERIES 254 AND 255 DC PANEL METERS—PIVOT AND JEWEL

Pivot and jewel DC panel meters available in two different styles. All meters meet ANSI Specifications C-39.1. **Accuracy:** ±2% of ull scale. **Overload:** DC voltmeters, 20% momentary and sus-ained; DC ammeters (momentary), 10 times the rated current or 10 consecutive intervals of ½ second with one minute interval between successive applications; DC ammeters (sustained), 20% or 8 hours. **Scale Data:** 90° rotation. **Insulation Level:** 2600 V rms i-pot. **Response Time:** 3 seconds maximum for microammeters; 2 seconds maximum for all other DC ratings. **Damping:** 40% maximum overshoot with minimum factor of 2.5.

Size	254 BIG LOOK Scale Length	255 HORIZON LINE Scale Length
2½″	2.06″	2.06″
3½″	2.88″	2.88″
4½″	3.93″	3.93″



254 BIG LOOK®



255 HORIZON LINE®

DC VOLTMETERS—ZERO-LEFT

Scale Volts	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254220§	3½-inch GE No. 50-254320§	4½-inch GE No. 50-254420§	2½-inch GE No. 50-255220§	3½-inch GE No. 50-255320§	4½-inch GE No. 50-255420§
1	1000 Ohms per Volt	LALA	$20.88	$22.62	$26.10	$20.88	$22.62	$26.10
3		LJLJ	20.88	22.62	26.10	20.88	22.62	26.10
10		MTMT	20.88	22.62	26.10	20.88	22.62	26.10
30		NLNL	20.88	22.62	26.10	20.88	22.62	26.10
50		NTNT	20.88	22.62	26.10	20.88	22.62	26.10
100		PKPK	20.88	22.62	26.10	20.88	22.62	26.10
150		PZPZ	20.88	22.62	26.10	20.88	22.62	26.10
300		RXRX	22.62	23.49	26.97	22.62	23.49	26.97

DC VOLTMETERS—ZERO-LEFT, RATED 0-1 mADC, USE WITH EXTERNAL RESISTORS

Scale Volts	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254204§	3½-inch GE No. 50-254304§	4½-inch GE No. 50-254404§	2½-inch GE No. 50-255204§	3½-inch GE No. 50-255304§	4½-inch GE No. 50-255404§
500	125	FAFS	$20.01	....	....	$20.01	....	....
600	125	FASJ	20.01	....	....	20.01	....	....
750	125	FASM	20.01	$20.88	$23.49	20.01	$20.88	$23.49

DC MICROAMMETERS—ZERO-LEFT

Scale μA	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254200§	3½-inch GE No. 50 254300§	4½-inch GE No. 50-254400§	2½-inch GE No. 50-255200§	3½-inch GE No. 50-255300§	4½-inch GE No. 50-255400§
20	3400	CFCF	$35.67	$36.54	....	$35.67	$36.54	....
50	1600	CYCY	27.84	29.58	$33.06	27.84	29.58	$33.06
100	1525	DRDR	23.49	24.36	27.84	23.49	24.36	27.84
200	690	EAEA	20.88	22.62	26.10	20.88	22.62	26.10
500	220	EMEM	20.01	20.88	23.49	20.01	20.88	23.49

§**When ordering show complete number;** example: **50-254200 CFCF** for 254 BIG LOOK 2½″ type, zero-left DC microammeter with 0–20 μA scale.

Contact us for availability of additional ratings.

SERIES 254 AND 255 DC PANEL METERS (CONT'D)

DC MICROAMMETERS—ZERO-CENTER

Scale μA	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK® Net Each, Lots of 1-9			255 HORIZON LINE® Net Each, Lots of 1-9		
			2½-inch GE No. 50-254201§	3½-inch GE No. 50-254301§	4½-inch GE No. 50-254401§	2½-inch GE No. 50-255201§	3½-inch GE No. 50-255301§	4½-inch GE No. 50-255401§
20-0-20	3300	CFCF	$31.32	$33.06	....	$31.32	$33.06	....
100-0-100	690	DRDR	20.88	22.62	$26.10	20.88	22.62	$26.10

DC MILLIAMMETERS—ZERO-LEFT

Scale mA	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254200§	3½-inch GE No. 50-254300§	4½-inch GE No. 50-254400§	2½-inch GE No. 50-255200§	3½-inch GE No. 50-255300§	4½-inch GE No. 50-255400§
1	64	FAFA	$20.01	$20.88	$23.49	$20.01	$20.88	$23.49
3	2.5	FNFN	20.01	20.88	23.49	20.01	20.88	23.49
10	1.8	GZGZ	20.01	20.88	23.49	20.01	20.88	23.49
20	1.5	HFHF	20.01	20.88	23.49	20.01	20.88	23.49
50	1.9	HYHY	20.01	20.88	23.49	20.01	20.88	23.49
100	0.50	JRJR	20.01	20.88	23.49	20.01	20.88	23.49
150	0.33	JXJX	20.01	20.88	23.49	20.01	20.88	23.49
200	0.25	KAKA	20.01	20.88	23.49	20.01	20.88	23.49
300	0.167	KGKG	20.01	20.88	23.49	20.01	20.88	23.49
500	0.100	KMKM	20.01	20.88	23.49	20.01	20.88	23.49
800	0.062	KWKW	20.01	20.88	23.49	20.01	20.88	23.49

DC AMMETERS—ZERO-LEFT

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254200§	3½-inch GE No. 50-254300§	4½-inch GE No. 50-254400§	2½-inch GE No. 50-255200§	3½-inch GE No. 50-255300§	4½-inch GE No. 50-255400§
1	0.05	LALA	$20.01	$20.88	$23.49	$20.01	$20.88	$23.49
1.5	0.0333	LCLC	20.01	20.88	23.49	20.01	20.88	23.49
3	0.0167	LJLJ	20.01	20.88	23.49	20.01	20.88	23.49
5	0.01	LSLS	20.01	20.88	23.49	20.01	20.88	23.49
10	0.005	MTMT	20.01	20.88	23.49	20.01	20.88	23.49
20	0.0025	NGNG	20.01	20.88	23.49	20.01	20.88	23.49
50	0.001	NTNT	....	20.88	23.49	....	20.88	23.49

DC AMMETERS—ZERO-LEFT, 50 mV SHUNT-RATED

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254224§	3½-inch GE No. 50-254324§	4½-inch GE No. 50-254424§	2½-inch GE No. 50-255224§	3½-inch GE No. 50-255324§	4½-inch GE No. 50-255424§
20	12.5 Ohms Calibrated*	ECNG	$20.01	$20.88	....	$20.01	$20.88	....
50		ECNT	20.01	20.88	$23.49	20.01	20.88	$23.49
75		ECPB	20.01	20.88	23.49	20.01	20.88	23.49
100		ECPK	20.01	20.88	23.49	20.01	20.88	23.49
150		ECPZ	20.01	20.88	23.49	20.01	20.88	23.49
300		ECRX	20.01	20.88	23.49	20.01	20.88	23.49
400		ECSC	20.01	20.88	23.49	20.01	20.88	23.49
500		ECSF	20.01	20.88	23.49	20.01	20.88	23.49
600		ECSJ	20.01	20.88	23.49	20.01	20.88	23.49
1.0 kA		ECVA	20.01	20.88	23.49	20.01	20.88	23.49
1.5 kA		ECVC	20.01	20.88	23.49	20.01	20.88	23.49
2.0 kA		ECVE	20.01	20.88	23.49	20.01	20.88	23.49

DC AMMETERS—ZERO-LEFT, 100 mV, SHUNT-RATED

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254224§	3½-inch GE No. 50-254324§	4½-inch GE No. 50-254424§	2½-inch GE No. 50-255224§	3½-inch GE No. 50-255324§	4½-inch GE No. 50-255424§
20	25 Ohms Calibrated*	GBNG	$20.01	$20.88	....	$20.01	$20.88	....
50		GBNT	20.01	20.88	$23.49	20.01	20.88	$23.49
75		GBPB	20.01	20.88	23.49	20.01	20.88	23.49
100		GBPK	20.01	20.88	23.49	20.01	20.88	23.49
150		GBPZ	20.01	20.88	23.49	20.01	20.88	23.49
300		GBRX	20.01	20.88	23.49	20.01	20.88	23.49
400		GBSC	20.01	20.88	23.49	20.01	20.88	23.49
500		GBSF	20.01	20.88	23.49	20.01	20.88	23.49
600		GBSJ	20.01	20.88	23.49	20.01	20.88	23.49
1.0 kA		GBVA	20.01	20.88	23.49	20.01	20.88	23.49
2.0 kA		GBVE	20.01	20.88	23.49	20.01	20.88	23.49

DC AMMETERS—ZERO-CENTER

Scale Amps	Term. Resis., Ohms	§ Add Suffix	254 BIG LOOK Net Each, Lots of 1-9			255 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 50-254201§	3½-inch GE No. 50-254301§	4½-inch GE No. 50-254401§	2½-inch GE No. 50-255201§	3½-inch GE No. 50-255301§	4½-inch GE No. 50-255401§
1-0-1	0.05	LALA	$20.01	$20.88	$23.49	$20.01	$20.88	$23.49
5-0-5	0.01	LSLS	20.01	20.88	23.49	20.01	20.88	23.49
10-0-10	0.005	MTMT	20.01	20.88	23.49	20.01	20.88	23.49
15-0-15	0.0033	NDND	20.01	20.88	23.49	20.01	20.88	23.49

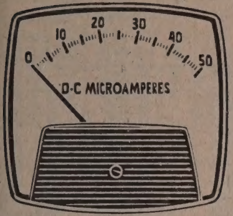
*For use with two-way shunt lead resistance of 0.065 ohms. §**When ordering show complete number; example: 50-254224 GBNG** for 254 BIG LOOK 2½" type, zero-left DC ammeter (100 mV shunt-rated) with 0-20 amps scale rating.

Contact us for availability of additional ratings.

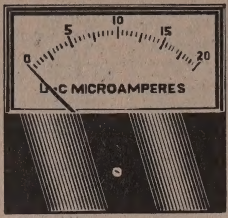
GENERAL ELECTRIC Panel Meters

SERIES 250 AND 251 DC PANEL METERS—TAUT BAND

Easy-to-read DC panel meters in two styles for all panel and control applications. All DC meters have self-shielded movement with taut-band suspension. All meters meet ANSI Specifications C-39.1. **Accuracy:** ±2% of full scale. **Overload:** DC Voltmeters, 20% momentary and sustained; AC ammeters (momentary), 10 times the rated current for 10 consecutive intervals of ½ second with one minute interval between successive applications; AC ammeters (sustained), 20% for 8 hours. **Scale Data:** 90° rotation. **Insulation Level:** 2600 V rms hi-pot. **Response Time:** 3 seconds maximum for microammeters; 2 seconds maximum for other DC ratings. **Damping:** 40% maximum overshoot with minimum damping factor of 2.5.



250 BIG LOOK®



251 HORIZON LINE®

Size	250 BIG LOOK® Scale Length	255 HORIZON LINE® Scale Length
1½″	1.32″	1.50″
2½″	2.06″	2.06″
3½″	2.88″	2.88″
4½″	3.93″	3.93″

DC VOLTMETERS—ZERO-LEFT, TAUT BAND

Scale Volts	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9 1½-inch GE No. 50-250120§	2½-inch GE No. 50-250220§	3½-inch GE No. 50-250320§	4½-inch GE No. 50-250420§	251 HORIZON LINE Net Each, Lots of 1-9 1½-inch GE No. 50-251120§	2½-inch GE No. 50-251220§	3½-inch GE No. 50-251320§	4½-inch GE No. 50-251420§
1.0	1000 Ohms/ Volt	LALA	$19.20	$19.20	$20.80	$22.40	$19.20	$19.20	$20.80	$22.40
3		LJLJ	19.20	19.20	20.80	22.40	19.20	19.20	20.80	22.40
10		MTMT	19.20	19.20	20.80	22.40	19.20	19.20	20.80	22.40
30		NLNL	19.20	19.20	20.80	22.40	19.20	19.20	20.80	22.40
50		NTNT	19.20	19.20	20.80	22.40	19.20	19.20	20.80	22.40
100		PKPK	19.20	19.20	20.80	24.00	19.20	19.20	20.80	24.00
150		PZPZ	19.20	19.20	20.80	24.00	19.20	19.20	20.80	24.00
300		RXRX	20.80	20.80	21.60	24.80	20.80	20.80	21.60	24.80

DC VOLTMETERS—ZERO-LEFT, RATED 0-1 mADC, USE WITH EXTERNAL RESISTOR, TAUT BAND

Scale Volts	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9 1½-inch GE No. 50-250104§	2½-inch GE No. 50-250204§	3½-inch GE No. 50-250304§	4½-inch GE No. 50-250404§	251 HORIZON LINE Net Each, Lots of 1-9 1½-inch GE No. 50-251104§	2½-inch GE No. 50-251204§	3½-inch GE No. 50-251304§	4½-inch GE No. 50-251404§
500	49	FAFS	$18.40	$18.40	....	....	$18.40	$18.40	....	....
600	49	FASJ	18.40	18.40	....	....	18.40	18.40	....	....
750	49	FASM	18.40	18.40	$19.20	$21.60	18.40	18.40	$19.20	$21.60

DC MICROAMMETERS—ZERO-LEFT, TAUT BAND

Scale μA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9 1½-inch GE No. 50-250100§	2½-inch GE No. 50-250200§	3½-inch GE No. 50-250300§	4½-inch GE No. 50-250400§	251 HORIZON LINE Net Each, Lots of 1-9 1½-inch GE No. 50-251100§	2½-inch GE No. 50-251200§	3½-inch GE No. 50-251300§	4½-inch GE No. 50-251400§
20	2650	CFCF	$32.80	$32.80	$33.60	....	$32.80	$32.80	$33.60	....
50	2385	CYCY	25.60	25.60	27.20	$30.40	25.60	25.60	27.20	$30.40
100	600	DRDR	21.60	21.60	22.40	25.60	21.60	21.60	22.40	25.60
200	188	EAEA	19.20	19.20	20.80	24.00	19.20	19.20	20.80	24.00
500	185	EMEM	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60

DC MICROAMMETERS—ZERO-CENTER, TAUT BAND

Scale μA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9 1½-inch GE No. 50-250101§	2½-inch GE No. 50-250201§	3½-inch GE No. 50-250301§	4½-inch GE No. 50-250401§	251 HORIZON LINE Net Each, Lots of 1-9 1½-inch GE No. 50-251101§	2½-inch GE No. 50-251201§	3½-inch GE No. 50-251301§	4½-inch GE No. 50-251401§
20–0–20	1340	CFCF	$28.80	$28.80	$30.40	....	$28.80	$28.80	$30.40	....
100–0–100	188	DRDR	19.20	19.20	20.80	$24.00	19.20	19.20	20.80	$24.00

DC MILLIAMMETERS—ZERO-LEFT, TAUT BAND

Scale mA	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9 1½-inch GE No. 50-250100§	2½-inch GE No. 50-250200§	3½-inch GE No. 50-250300§	4½-inch GE No. 50-250400§	251 HORIZON LINE Net Each, Lots of 1-9 1½-inch GE No. 50-251100§	2½-inch GE No. 50-251200§	3½-inch GE No. 50-251300§	4½-inch GE No. 50-251400§
1	49	FAFA	$18.40	$18.40	$19.20	$21.60	$18.40	$18.40	$19.20	$21.60
3	18	FNFN	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
10	3.2	GZGZ	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
20	2.8	HFHF	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
50	2.6	HYHY	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
100	0.5	JRJR	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
150	0.33	JXJX	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
200	0.25	KAKA	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
300	0.16	KGKG	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
500	0.10	KMKM	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
800	0.06	KWKW	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60

DC AMMETERS—ZERO-LEFT, TAUT BAND

Scale Amps	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9 1½-inch GE No. 50-250100§	2½-inch GE No.50-250200§	3½-inch GE No. 50-250300§	4½-inch GE No. 50-250400§	251 HORIZON LINE Net Each, Lots of 1-9 1½-inch GE No. 50-251100§	2½-inch GE No. 50-251200§	3½-inch GE No. 50-251300§	4½-inch GE No. 50-251400§
1	0.050	LALA	$18.40	$18.40	$19.20	$21.60	$18.40	$18.40	$19.20	$21.60
1.5	0.033	LCLC	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
3	0.0167	LJLJ	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
5	0.010	LSLS	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
10	0.0050	MTMT	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
20	0.0025	NGNG	....	18.40	19.20	21.60	....	18.40	19.20	21.60
50	0.00100	NTNT	....	....	19.20	21.60	....	....	19.20	21.60

§**When ordering show complete number;** example: **50-250120 LALA** for 250 BIG LOOK 1½″ type zero-left, DC voltmeter with 1.0 volt rating.

Contact us for availability of additional ratings.

GENERAL ELECTRIC PANEL METERS, METER RELAYS

SERIES 250 AND 251 DC PANEL METERS (CONT'D)

DC AMMETERS—ZERO-LEFT, 50 mV, SHUNT-RATED, TAUT BAND

Scale Volts	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK® Net Each, Lots of 1-9				251 HORIZON LINE® Net Each, Lots of 1-9			
			1½-inch GE No. 50-250124§	2½-inch GE No. 50-250224§	3½-inch GE No. 50-250324§	4½-inch GE No. 50-250424§	1½-inch GE No. 50-251124§	2½-inch GE No. 50-251224§	3½-inch GE No. 50-251324§	4½-inch GE No. 50-251424§
20	50*	ECNG	$18.40	$18.40	$19.20	....	$18.40	$18.40	$19.20	....
50	50*	ECNT	18.40	18.40	19.20	$21.60	18.40	18.40	19.20	$21.60
75	50*	ECPB	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
100	50*	ECPK	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
150	50*	ECPZ	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
300	50*	ECRX	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
400	50*	ECSC	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
500	50*	ECSF	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
600	50*	ECSJ	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
1000	50*	ECVA	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
2000	50*	ECVE	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60

DC AMMETERS—ZERO-CENTER, TAUT BAND

Scale Amps	Term. Resis., Ohms	§ Add Suffix	250 BIG LOOK Net Each, Lots of 1-9				251 HORIZON LINE Net Each, Lots of 1-9			
			1½-inch GE No. 50-250101§	2½-inch GE No. 50-250201§	3½-inch GE No. 50-250301§	4½-inch GE No. 50-250401§	1½-inch GE No. 50-251101§	2½-inch GE No. 50-251201§	3½-inch GE No. 50-251301§	4½-inch GE No. 50-251401§
1–0–1	0.050	LALA	$18.40	$18.40	$19.20	$21.60	$18.40	$18.40	$19.20	$21.60
5–0–5	0.010	LSLS	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
10–0–10	0.0050	MTMT	18.40	18.40	19.20	21.60	18.40	18.40	19.20	21.60
20–0–20	0.0025	NGNG	....	18.40	19.20	21.60	....	18.40	19.20	21.60
50–0–50	0.0010	NTNT	....	....	19.20	21.60	....	....	19.20	21.60

SERIES 195 AND 196 METER RELAYS

Available in three different sizes in two styles. Each size comes in two different types as listed below. **Accuracy:** ±2% of full scale at 117 volts input power. **Repeatability:** 0.3% of full scale. **Setpoint Travel:** 100% of full scale travel; double setpointers can be positioned to within two mechanical degrees of each other—approx. 2.2% of full scale. **Minimum Span:** 0–5 μA. **Input Power:** 107–127 VAC, 50/60 Hz. **Lamp:** Derated to provide 5 year life. **Load Relay:** DPDT per set point. **Contact Rating:** 5 amps AC non-inductive at 120 volts; 5 amps DC non-inductive at 28 volts; 0.2 amps DC non-inductive at 125 volts.

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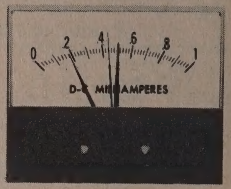
MILLIAMPERES
GENERAL ELECTRIC

195 BIG LOOK®



196 HORIZON LINE®

SINGLE-HIGH SETPOINT DC METER RELAYS

DC MICROAMMETERS—ZERO-LEFT (±2%)

Scale μA	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195210§	3½-inch GE No. 195310§	4½-inch GE No. 195410§	2½-inch Not Available	3½-inch GE No. 196310§	4½-inch GE No. 196410§
50	1600	CYCY	$140.07	$134.85	$138.33	....	$134.85	$138.33
100	1525	DRDR	134.85	130.50	133.98	....	130.50	133.98

DC MILLIAMMETERS—ZERO-LEFT (±2%)

Scale mA	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195210§	3½-inch GE No. 195310§	4½-inch GE No. 195410§	2½-inch Not Available	3½-inch GE No. 196310§	4½-inch GE No. 196410§
1	64.0	FAFA	$131.37	$127.02	$129.63	....	$127.02	$129.63
10	1.8	GZGZ	131.37	127.02	129.63	....	127.02	129.63
100	0.5	†	†	†	†	....	†	†
500	0.1	†	†	†	†	....	†	†

DC AMMETERS—ZERO-LEFT (SELF-CONTAINED, MAXIMUM RATED 50 AMPS, ±2%)

Scale Amps	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195210§	3½-inch GE No. 195310§	4½-inch GE No. 195410§	2½-inch Not Available	3½-inch GE No. 196310§	4½-inch GE No. 196410§
1	‡	†	$131.37	$127.02	$129.63	....	$127.02	$129.63

DC MILLIVOLT—ZERO-LEFT (±2%)

Scale mV	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195211§	3½-inch GE No. 195311§	4½-inch GE No. 195411§	2½-inch Not Available	3½-inch GE No. 196311§	4½-inch GE No. 196411§
5	....	JDJD	....	$156.60	$160.08	....	$156.60	$160.08
10	....	JEJE	....	152.25	155.73	....	152.25	155.73

DC AMMETERS—50 mV SHUNT-RATED, ZERO-LEFT (±2%)

Scale mV	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195211§	3½-inch GE No. 195311§	4½-inch GE No. 195411§	2½-inch Not Available	3½-inch GE No. 196311§	4½-inch GE No. 196411§
50	#	†	$131.37	$127.02	$129.63	....	$127.02	$129.63

DC Voltmeters-Zero Left—Self-contained, max. rated 600 V (±2%). **Order by Description:** Specify style, size setpoints, scale, rating and legend. For Type 196 Horizon Line: Specify front or behind-panel mounting.

*Calibrated for use with two-way shunt lead resistance of 0.065 ohms. †Order by complete description; prices on request. ‡Manual reset option available; add **$13.92** to the price shown. #Standard scales available, ranging from 1 amp to 10 kA in 34 steps. §**When ordering show complete number;** example: **50-250224 ECNG** for DC ammeter with 0–20 volt scale.

Contact us for availability of additional ratings.

SERIES 195 AND 196 METER RELAYS (CONT'D)

DOUBLE SET POINT DC METER RELAYS

DC MICROAMMETERS—ZERO-LEFT (±2%)

Scale µA	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK® Net Each, Lots of 1-9			196 HORIZON LINE® Net Each, Lots of 1-9		
			2½-inch GE No. 195230§	3½-inch GE No. 195330§	4½-inch GE No. 195430§	2½-inch Not Available	3½-inch GE No. 196330§	4½-inch GE No. 196430§
50	1600	CYCY	$169.65	$164.43	$167.91	....	$164.43	$167.91
100	1525	DRDR	164.43	160.08	163.56	....	160.08	163.56

DC MILLIAMMETERS—ZERO-LEFT (±2%)

Scale mA	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195230§	3½-inch GE No. 195330§	4½-inch GE No. 195430§	2½-inch Not Available	3½-inch GE No. 196330§	4½-inch GE No. 196430§
1	64.0	FAFA	$160.95	$156.60	$159.21	....	$156.60	$159.21
10	1.8	GZGZ	160.95	156.60	159.21	....	156.60	159.21
100	0.5	†	†	†	†	....	†	†
500	0.1	†	†	†	†	....	†	†

DC AMMETERS—ZERO-LEFT (SELF-CONTAINED, MAXIMUM RATED, 50 AMPS, ±2%)

Scale Amps	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195230§	3½-inch GE No. 195330§	4½-inch GE No. 195430§	2½-inch Not Available	3½-inch GE No. 196330§	4½-inch GE No. 196430§
1	*	†	$160.95	$156.60	$159.21	....	$156.60	$159.21

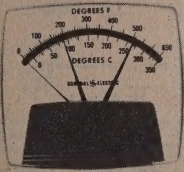
DC MILLIVOLT—ZERO-LEFT (±2%)

Scale mV	Term. Resis., Ohms	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9			196 HORIZON LINE Net Each, Lots of 1-9		
			2½-inch GE No. 195231§	3½-inch GE No. 195331§	4½-inch GE No. 195431§	2½-inch Not Available	3½-inch GE No. 196331§	4½-inch GE No. 196431§
5	....	JDJD	....	$186.18	$189.66	....	$186.18	$189.66
10	....	JEJE	....	181.83	185.31	....	181.83	185.31

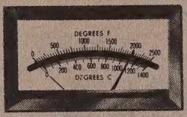
DC AMMETERS—50 mV SHUNT-RATED, ZERO-LEFT (±2%)

50	‡	†	$160.95	$156.60	$159.21	....	$156.60	$159.21

SERIES 195 AND 196 PROTECTORS/CONTROLLERS



195 BIG LOOK®



196 HORIZON LINE®

Available in BIG LOOK or HORIZON LINE styles. Lead length compensation up to 10 ohms. Bimetal type cold-junction compensation. Thermocouple-break projection standard on pyrometer controllers, optional on over-temperature protectors. **Accuracy:** ±2% of full scale at 117 volts input power. **Repeatability:** 0.3% of full scale. **Setpoint Travel:** 100% of full scale travel; double setpointers can be positioned to within two mechanical degrees of each other—approx. 2.2% of full scale. **Minimum Span:** 0–150° F/70° C.

4½-INCH TYPE—SINGLE-HIGH SETPOINT

Scale Range	Max. Lead Resis., Ohms	Cali-brated	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9		196 HORIZON LINE Net Each, Lots of 1-9	
				Protectors GE No. 195450§	Controllers GE No. 195453§	Protectors GE No. 196450§	Controllers GE No. 196453§
0–150° F/70° C	200	J	ABAB	$162.69	$180.96	$162.69	$180.96
0–250° F/125° C	200	J	ADAD	162.69	180.96	162.69	180.96
0–300° F/150° C	200	J	AEAE	162.69	180.96	162.69	180.96
0–650° F/350° C	10	J	AJAJ	145.29	163.56	145.29	163.56
0–800° F/400° C	10	J	ALAL	145.29	163.56	145.29	163.56
0–1000° F/500° C	10	J	ANAN	145.29	163.56	145.29	163.56
0–1600° F/800° C	10	K	ERAR	145.29	163.56	145.29	163.56
0–1800° F/1000° C	10	K	ESAS	145.29	163.56	145.29	163.56
0–2000° F/1100° C	10	K	EUAU	145.29	163.56	145.29	163.56
0–2200° F/1200° C	10	K	EWAW	145.29	163.56	145.29	163.56
0–2500° F/1400° C	10	K	EYAY	145.29	163.56	145.29	163.56
0–3000° F/1650° C	10	K	JKCC	145.29	163.56	145.29	163.56

4½-INCH TYPE—DOUBLE SETPOINT

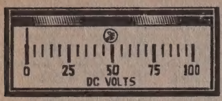
Scale Range	Max. Lead Resis., Ohms	Cali-brated	§ Add Suffix	195 BIG LOOK Net Each, Lots of 1-9		196 HORIZON LINE Net Each, Lots of 1-9	
				Protectors GE No. 195451§	Controllers GE No. 195454§	Protectors GE No. 196451§	Controllers GE No. 196454§
0–150° F/70° C	200	J	ABAB	$192.27	$210.50	$192.27	$210.50
0–250° F/125° C	200	J	ADAD	192.27	210.50	192.27	210.50
0–300° F/150° C	200	J	AEAE	192.27	210.50	192.27	210.50
0–650° F/350° C	10	J	AJAJ	174.87	193.14	174.87	193.14
0–800° F/400° C	10	J	ALAL	174.87	193.14	174.87	193.14
0–1000° F/500° C	10	J	ANAN	174.87	193.14	174.87	193.14
0–1600° F/800° C	10	K	ERAR	174.87	193.14	174.87	193.14
0–1800° F/1000° C	10	K	ESAS	174.87	193.14	174.87	193.14
0–2000° F/1100° C	10	K	EUAU	174.87	193.14	174.87	193.14
0–2200° F/1200° C	10	K	EWAW	174.87	193.14	174.87	193.14
0–2500° F/1400° C	10	K	EYAY	174.87	193.14	174.87	193.14
0–3000° F/1650° C	10	K	JKCC	174.87	193.14	174.87	193.14

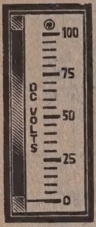
*Manual reset option available; add **$21.75** to the price shown. †Order by complete description; prices on request. ‡Standard scales available, ranging from 1 amp to 10 kA in 34 steps. §**When ordering show complete number;** example: **195230 FAFA** for 2½" BIG LOOK zero-left DC milliammeter (±2%) double set-point meter relay. For Type 196 HORIZON LINE, specify front or behind-panel mounting.

Contact us for availability of additional ratings.

GENERAL ELECTRIC Panel Meters

TYPE 185 SERIES EDGEWISE METERS





Slim, miniature design can be mounted individually or in space-saving clusters. Choice of horizontal or vertical placement. Flush sides assure tight, case-to-case stacking without mechanism bulge. Magnetically shielded to prevent interaction between meters; no need for special calibration. Optional bezel and mounting brackets available for one, two or three-unit stacking. Meet applicable portions of ANSI C-39.1. **Accuracy:** ±2% of full scale, DC meters; ±3% with 60-Hz sine wave at 25° C, AC rectifier-type meters. **Overload:** 20% momentary and sustained, voltmeter; 1000% momentary and 20% sustained, ammeter. **Insulation:** 1800 V rms hi-pot. **Scale:** 1.785″ long, 53° rotation. **Response Time and Damping:** Meet or exceed ANSI requirements. Response time 3 sec. max., μA meters; 2 sec. max., all other DC ratings; 2.5 sec. max., AC ratings. Damping 40% max. overshoot; damping factor, 2.5 minimum. **Size:** 0.92″ w. x 2.258″ lg. x 3.44″ d.. overall. Bezel 1.255″ w. x 3.005″ lg., single; 2.155″ w., double; 3.055″ w., triple-unit mounting.

DC VOLTMETERS (SELF-CONTAINED)

Scale Range	Term. Resis., Ohms	Horizontal Zero-Left No. 50-	Vertical Zero-Bottom No. 50-	Net Ea., 1-9
0–10	1000	185 011 MTMT	185 013 MTMT	$22.62
0–30	ohms/	185 011 NLNL	185 013 NLNL	22.62
0–100	volt	185 011 PKPK	185 013 PKPK	22.62

DC MILLIAMMETERS (SELF-CONTAINED)

Scale Range	Term. Resis., Ohms	Horizontal Zero-Left No. 50-	Vertical Zero-Bottom No. 50-	Net Ea., 1-9
0–1	40	185 111 FAFA	185 113 FAFA	$20.88
0–10	1.0	185 111 GZGZ	185 113 GZGZ	20.88
0–100	0.5	185 111 JRJR	185 113 JRJR	20.88

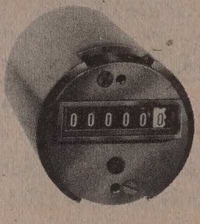
AC VOLTMETERS (SELF-CONTAINED)
RECTIFIER TYPE

Scale Range	Term. Resis., Ohms	Horizontal Zero-Left No. 50-	Vertical Zero-Bottom No. 50-	Net Ea., 1-9
0–100	*	185 051 PKPK	185 053 PKPK	$29.58
0–150	*	185 051 PZPZ	185 053 PZPZ	29.58

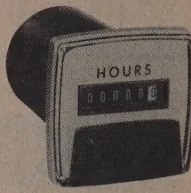
*1000 ohms/volt.

SERIES 240 ELAPSED TIME METERS

Elapsed time meters are available with or without reset button. Features include synchronous motor with gear connected to digital readout counter. Meters display elapsed time in hours and minutes (tenths) by 6 digits. **Accuracy:** Matches frequency control of power system. **Vibration-Shock:** Meets ANSI Specifications C39.1. **Input Range:** 120/240 VAC, 50/60 Hz; 208/480 VAC, 60 Hz. **Insulation Level:** 2000 volts rms hi-pot for one minute. **Burden Data:** 2.5 volt-amps maximum. UL Approved.



BACK-OF-PANEL



2½″ RESET

BACK-OF-PANEL—60 Hz

	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
Motor VAC	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 003 AAAA	$19.92	50-240 001 AAAA	$19.92	50-240 004 AAAA	$27.39	50-240 002 AAAA	$27.39
240	50-240 003 ABAA	20.75	50-240 001 ABAA	20.75	50-240 004 ABAA	28.22	50-240 002 ABAA	28.22

2½-INCH BIG LOOK®—60 Hz

	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
Motor VAC	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 213 AAAB	$25.73	50-240 211 AAAB	$25.73	50-240 214 AAAB	$34.86	50-240 212 AAAB	$34.86
240	50-240 213 ABAB	26.56	50-240 211 ABAB	26.56	50-240 214 ABAB	35.69	50-240 212 ABAB	35.69

3½-INCH BIG LOOK—60 Hz

	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
Motor VAC	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 313 AAAB	$25.73	50-240 311 AAAB	$25.73	50-240 314 AAAB	$34.86	50-240 312 AAAB	$34.86
240	50-240 313 ABAB	26.56	50-240 311 ABAB	26.56	50-240 314 ABAB	35.69	50-240 312 ABAB	35.69

2½-INCH SQUARE CASE—60 Hz

	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
Motor VAC	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 613 AAAD	$29.05	50-240 611 AAAD	$29.05	50-240 614 AAAD	$38.18	50-240 612 AAAD	$38.18
240	50-240 613 ABAD	29.88	50-240 611 ABAD	29.88	50-240 614 ABAD	39.01	50-240 612 ABAD	39.01

3½-INCH SQUARE CASE—60 Hz

	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
Motor VAC	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 713 AAAD	$29.05	50-240 711 AAAD	$29.05	50-240 714 AAAD	$38.18	50-240 712 AAAD	$38.18
240	50-240 713 ABAD	29.88	50-240 711 ABAD	29.88	50-240 714 ABAD	39.01	50-240 712 ABAD	39.01

ELAPSED TIME METERS CONTINUED ON NEXT PAGE

Contact us for availability of additional ratings.

SERIES 240 ELAPSED TIME METERS (CONT'D)

2½-INCH ROUND CASE—60 Hz

Motor VAC	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 633 AAAE	$29.05	50-240 631 AAAE	$29.05	50-240 634 AAAE	$38.18	50-240 632 AAAE	$38.18
240	50-240 633 ABAE	29.88	50-240 631 ABAE	29.88	50-240 634 ABAE	39.01	50-240 632 ABAE	39.01

3½-INCH ROUND CASE—60 Hz

Motor VAC	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 733 AAAE	$29.05	50-240 731 AAAE	$29.05	50-240 734 AAAE	$38.18	50-240 732 AAAE	$38.18
240	50-240 733 ABAE	29.88	50-240 733 ABAE	29.88	50-240 734 ABAE	39.01	50-240 732 ABAE	39.01

2½-INCH CONDUIT-MOUNTED CASE—60 Hz*

Motor VAC	Non-Reset Type				Reset Type			
	In Minutes		In Hours		In Minutes		In Hours	
	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9	GE Number	Net 1-9
120	50-240 253 AAAF	$34.86	50-240 251 AAAF	$34.86	....	....	....	....
240	50-240 253 ABAF	35.69	50-240 251 ABAF	35.69	....	....	....	....

*Conduit-mounted case and type 240 meter are available as a unit; replacement meters for conduit-mounted case not available as a separate item. Motors can be supplied as a renewal part. For 50 Hz service specify model desired and add "except 50 Hz"; add **$2.49** to price shown.

PANEL METER ACCESSORIES

TYPES AK-4 AND AK-5

HOOK-ON-VOLT-AMMETERS

Types AK-4 and AK-5 hook-on indicators indicate AC volts when attached to circuit by leads provided, and AC amps when hook is placed around current-carrying conductor. **Accuracy:** ±3% volts and amps at 60 Hz. Come with carrying case and voltage leads 3½ ft. long.

GE Number	Type	Range	Net Each, 1-9
585X63	AK-4	0–10/30/100/300/800 amps AC 0–150–300–750 VAC	**$97.90**
583X64	AK-5	0–5/20/80/350 amps AC 0–150/300/750 VAC	**78.32**

CURRENT TRANSFORMERS

Polyvinyl-chloride insulated transformers of the one-turn primary type, with 5-amp secondary. Handy with motor load indicators. **Accuracy:** Less than 1.5% 50–60 Hz. **Insulation Level:** 600 V. **Frequency:** 50–400 Hz.

GE Number	Amperes Ratio		Burden		Net Each, 1-9
	Pri.	Sec.	V.A.	P.F.	
8604K94001	50	5	2.0	1.0	**$11.81**
8604K94005	100	5	2.0	1.0	**11.81**
8604K94008	150	5	2.0	1.0	**11.81**
8604K94013	200	5	2.5	0.9	**15.26**
8604K94015	300	5	2.5	0.9	**15.26**
8604K94016	400	5	2.5	0.9	**15.26**
8604K94017	500	5	2.5	0.9	**15.26**
8604K94023	600	5	5.0	0.9	**19.33**
8604K94025	800	5	5.0	0.9	**19.33**

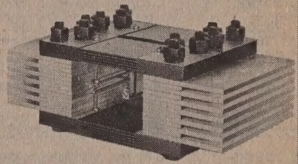
QUANTITY DISCOUNTS ON

GENERAL ELECTRIC

PANEL METERS AND ACCESSORIES

AVAILABLE ON REQUEST

TYPE 140 SHUNTS



Provides DC millivolt signal proportional to DC amps. **Accuracy:** ±¼% calibrated accuracy. **Minimum Rating:** 10 amps, 50 mV or 100 mV. **Maximum Rating:** 10 kA, 50 mV or 100 mV.

WITH BASE

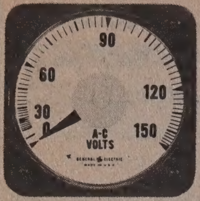
Rated Amps	Rated 50 mV		Rated 100 mV	
	GE No. 50-140-	Net 1-9	GE No. 50-140-	Net 1-9
10	**031 MTAA**	**$12.18**	**034 MTAA**	**$15.66**
15	**031 NDAA**	**12.18**	**034 NDAA**	**15.66**
20	**031 NGAA**	**12.18**	**034 NGAA**	**15.66**
30	**031 NLAA**	**12.18**	**034 NLAA**	**15.66**
40	**031 NPAA**	**12.18**	**034 NPAA**	**15.66**
50	**031 NTAA**	**12.18**	**034 NTAA**	**15.66**
60	**031 NWAA**	**12.18**	**034 NWAA**	**15.66**
75	**031 PBAA**	**12.18**	**034 PBAA**	**15.66**
80	**031 PDAA**	**12.18**	**034 PDAA**	**15.66**
100	**031 PKAA**	**12.18**	**034 PKAA**	**15.66**
150	**031 PZAA**	**12.18**	**034 PZAA**	**15.66**
200	**031 RLAA**	**12.18**	**034 RLAA**	**15.66**
250	**031 RSAA**	**13.05**	**034 RSAA**	**16.53**
300	**031 RXAA**	**13.92**	**034 RXAA**	**17.40**
400	**031 SCAA**	**17.40**	**034 SCAA**	**21.75**
500	**031 SFAA**	**20.01**	**034 SFAA**	**26.10**
600	**031 SJAA**	**23.49**	**034 SJAA**	**29.58**
800	**031 SNAA**	**26.97**	**034 SNAA**	**35.67**
1000	**031 SSAA**	**31.32**	**034 SSAA**	**44.37**

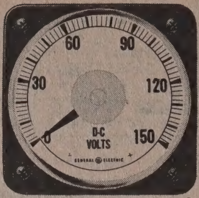
WITHOUT BASE

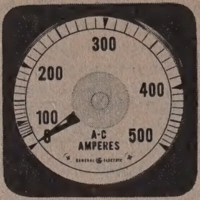
Rated Amps	Rated 50 mV		Rated 100 mV	
	GE No. 50-140-	Net 1-9	GE No. 50-140-	Net 1-9
75	**011 PBAA**	**$ 10.44**	**014 PBAA**	**$ 13.92**
80	**011 PDAA**	**10.44**	**014 PDAA**	**13.92**
100	**011 PKAA**	**10.44**	**014 PKAA**	**13.92**
150	**011 PZAA**	**10.44**	**014 PZAA**	**13.92**
200	**011 RLAA**	**10.44**	**014 RLAA**	**13.92**
250	**011 RSAA**	**12.18**	**014 RSAA**	**15.66**
300	**011 RXAA**	**13.05**	**014 RXAA**	**16.53**
400	**011 SCAA**	**16.53**	**014 SCAA**	**20.88**
500	**011 SFAA**	**19.14**	**014 SFAA**	**24.36**
600	**011 SJAA**	**20.88**	**014 SJAA**	**26.97**
800	**011 SNAA**	**24.36**	**014 SNAA**	**33.06**
1000	**011 SSAA**	**29.58**	**014 SSAA**	**42.63**
1200	**011 SUAA**	**33.93**	**014 SUAA**	**49.59**
1500	**011 TCAA**	**37.41**	**014 TCAA**	**54.81**
2000	**011 TMAA**	**49.59**	**014 TMAA**	**73.95**
2500	**011 TUAA**	**62.64**	**014 TUAA**	**93.09**
3000	**021 UAAA***	**87.00**	**024 UAAA***	**123.54**
4000	**021 UEAA***	**123.54**	**024 UEAA***	**160.95**
5000	**021 UJAA***	**153.99**	**024 UJAA***	**215.76**
6000	**021 UPAA***	**178.35**	**024 UPAA***	**252.30**
8000	**021 UWAA***	**227.94**	**024 UWAA***	**326.25**
10kA	**021 UZAA***	**277.53**	**024 UZAA***	**400.20**

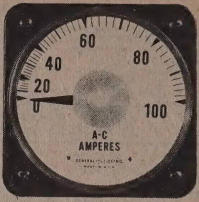
*Silver-plated terminals are supplied as standard.

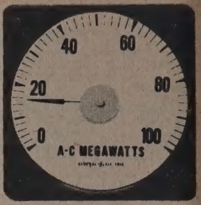
GENERAL ELECTRIC SWITCHBOARD INSTRUMENTS











AC types AB-40, AB-30 and AB-16 ±1% accuracy switchboard instruments intended for general switchboard service on both large and small equipment. Excellent for control stations, test equipment and other installations where space is limited. Cases are dustproof and designed for semiflush mounting. White scales with black markings standard. Black scales with white markings available. AB-30 scales have a maximum of 3 digits as standard; AB-16 and AB-40 have a maximum of 4 digits as standard. High-shock and illuminated instruments; optional features and accessories available on request.

AC VOLTMETERS

Self-contained; 50/60 Hz; iron-vane type. Taut band except AB-30 (pivot and jewel, 60 Hz).

Rating	Scale	AB-30		AB-40		AB-16	
		GE Number	Net Each	GE Number	Net Each	GE Number	Net Each
150 V	0–150	50-105 031 PZPZ	$ 90.00	50-103 021 PZPZ	$114.00	50-121 021 PZPZ	$176.00
250 V	0–250	50-105 031 RSRS	95.00	50-103 021 RSRS	119.00	50-121 021 RSRS	181.00
300 V	0–300	50-105 031 RXRX	99.00	50-103 021 RXRX	124.00	50-121 021 RXRX	186.00
500 V	0–500	50-105 021 SFSF	109.00	50-103 021 SFSF	136.00	50-121 021 SFSF	199.00
600 V	0–600	50-105 021 SJSJ	114.00	50-103 021 SJSJ	141.00	50-121 021 SJSJ	204.00

Transformer-rated, 50/60 Hz; iron-vane type. Taut band except AB-30 (pivot and jewel, 60 Hz).

150 V	*	†	$90.00	†	$114.00	†	$176.00
250 V	0–600 V	50-105 031 RSSJ	95.00	50-103 021 RSSJ	119.00	50-121 021 RSSJ	181.00

Rectifier type, 1.5% accuracy, 20–3000 Hz. Taut band.

15 V	0–15	†	$136.00	†	$149.00	†	$211.00
30 V	0–30	†	136.00	†	149.00	†	211.00
150 V	0–150	†	136.00	†	149.00	†	211.00
150 V	†	†	136.00	†	149.00	†	211.00
300 V	0–300	†	143.00	†	155.00	†	218.00
600 V	0–600	†	159.00	†	174.00	†	236.00
750 V	0–750	†	168.00	†	183.00	†	245.00

Ground-detector type, single-phase, 50/60 Hz. Taut band except AB-30 (pivot and jewel).

150 V	0–150	50-105 031 PZPZ	$ 90.00	50-103 021 PZPZ	$114.00	50-121 021 PZPZ	$176.00
150 V	†	50-105 031 PZ. .†	90.00	50-103 021 PZ. .†	114.00	50-121 021 PZ. .†	176.00
300 V	0–300	50-105 031 RXRX	99.00	50-103 021 RXRX	124.00	50-121 021 RXRX	186.00
600 V	0–600	50-105 021 SJSJ	114.00	50-103 021 SJSJ	141.00	50-121 021 SJSJ	204.00

DC VOLTMETERS

0–30 V	0–30	50-112 011 NLNL	$109.00	50-103 011 NLNL	$121.00	50-121 011 NLNL	$184.00
0–75 V	0–75	50-112 011 PBPB	109.00	50-103 011 PBPB	121.00	50-121 011 PBPB	184.00
0–150 V	0–150	50-112 011 PZPZ	109.00	50-103 011 PZPZ	121.00	50-121 011 PZPZ	184.00
0–300 V	0–300	50-112 011 RXRX	115.00	50-103 011 RXRX	128.00	50-121 011 RXRX	190.00
0–600 V	0–600	50-112 011 SJSJ	133.00	50-103 011 SJSJ	148.00	50-121 011 SJSJ	210.00

Narrow range—zener-diode.

110–130 V	110–130	†	$209.00	†	$230.00	†	$293.00

AC AMMETERS

Self-contained, 40/70 Hz; iron-vane type. Taut band except AB-30 (pivot and jewel).

8 A	0–8	50-105 131 MJMJ	$84.00	50-103 131 MJMJ	$106.00	50-121 131 MJMJ	$169.00
10 A	0–10	50-105 131 MTMT	84.00	50-103 131 MTMT	106.00	50-121 131 MTMT	169.00

Transformer-rated, 40/70 Hz; iron-vane type. Taut band except AB-30 (pivot and jewel).

5	‡	†	$84.00	†	$106.00	†	$169.00

DC AMMETERS—SELF-CONTAINED, TAUT BAND

Self-contained milliammeters, zero-left.

0–1 mA	0–1	50-112 111 FAFA	$108.00	50-103 111 FAFA	$119.00	50-121 111 FAFA	$181.00

Shunt-rated—zero-left for use with 50 mV shunts and 0.063-ohm shunt leads (standard 6-foot leads). Shunts and leads are not included in the price and must be ordered separately.

50	#	†	$104.00	†	$114.00	†	$176.00

AC FREQUENCY METERS

Taut band, zener-diode type, 120 V rating. Impedor included in price.

Scale Hz	Ctr. Freq. Hz	Accuracy Hz	AB-30		AB-40		AB-16	
			GE Number	Net Each	GE Number	Net Each	GE Number	Net Each
55–65	60	±0.15	50-112 372 ANAN	$318.00	50-103 372 ANAN	$331.00	50-121 372 ANAN	$391.00

*Standard scales available ranging from 0–300 volts to 0–150 kV in 11 steps. †Order by description: Specify CT (Current Transformer) and/or PT (Potential Transformer) ratios if used and scale desired (where applicable). ‡Standard scales available ranging from 25 amps to 8000 amps in 30 steps. #Standard ranges available from 0–3000 amps in 19 steps.

GENERAL ELECTRIC SWITCHBOARD INSTRUMENTS

AC SYNCHROSCOPES

Pivot and jewel; self-contained, 120 V rating.

Scale	Normal Freq. Hz	AB-30		AB-40		AB-16	
		GE Number	Net Each	GE Number	Net Each	GE Number	Net Each
Slow-fast	50	50-105 452 ABAA	$293.00	50-106 452 ABAA	$325.00	50-120 452 ABAA	$388.00
Slow-fast	60	50-105 452 AAAA	293.00	50-106 452 AAAA	325.00	50-120 452 AAAA	388.00

TAUT BAND AC WATTMETERS

One element self-contained, single-phase/2-wire, 50/60 Hz, integral transducer.

Rating		Scale Watts	AB-30		AB-40		AB-16	
A	V		GE Number 50-112	Net Each	GE Number 50-103	Net Each	GE Number 50-121	Net Each
5	120	0–500	211 ARBU 1CRB	$201.00	211 ARBU 1CRB	$223.00	211 ARBU 1CRB	$285.00

Transformer-rated, 1-element, single-phase/2-wire, 50/60 Hz, integral transducer.

5	120	*	211 A*	$201.00	211 A*	$223.00	211 A*	$285.00

Transformer-rated, 2-element, 3-phase/3-wire, 50/60 Hz, integral transducer.

5	120	*	221 A*	$269.00	221 A*	$298.00	221 A*	$360.00
5	240	*	221 C*	289.00	221 C*	316.00	221 C*	379.00

Transformer-rated, 2½-element, 3-phase/4-wire, 50/60 Hz, integral transducer.

5	120	*	251 A*	$289.00	251 A*	$316.00	251 A*	$379.00
5	240	*	251 C*	308.00	251 C*	336.00	251 C*	399.00

AC VARMETERS

Transformer-rated, 1-element, single-phase/2-wire, 50/60 Hz, integral transducer and phase-shift impedor, taut band. Transformers rated 2-element, 3-phase/3-wire and 2½-element, 3-phase/4-wire, with integral transducers, also available.

5	120	*	312 A*	$263.00	312 A*	$291.00	312 A*	$354.00

*Order by description: Specify CT (Current Transformer) and/or PT (Potential Transformer) ratios if used, and scale desired.

TAUT BAND AC POWER-FACTOR METERS

Accuracy ±1% of scale length. Single-phase/2-wire, 50/60 Hz self-contained.

Rating		Scale	AB-30		AB-40		AB-16	
A	V		GE Number	Net Each	GE Number	Net Each	GE Number	Net Each
5	120	.5–1–.5	50-112 412 FCAD	$301.00	50-103 412 FCAD	$335.00	50-121 412 FCAD	$398.00

Accuracy ±1% of scale length. Three-phase/3-wire, 50/60 Hz.

5	240	.5–1–.5	50-112 402 FEAD	$263.00	50-103 402 FEAD	$288.00	50-121 402 FEAD	$350.00

Accuracy ±1% of scale length. Three-phase/4-wire, 50/60 Hz.

5	240	.5–1–.5	50-112 402 FEAD	$263.00	50-103 402 FEAD	$288.00	50-121 402 FEAD	$350.00

TYPE 180 INDICATING INSTRUMENTS

AC VOLTMETERS, 60 Hz, IRON VANE TYPE

Scale Volts	Transformer Rating	§ Add Suffix	Net Each	
			Horizontal Scale GE No. 50-180033§	Vertical Scale GE No. 50-180031§
0–150	Self-Contained	PZPZ	$63.00	$63.00
0–300		RXRX	69.00	69.00
0–600		SJSJ	88.00	88.00

AC AMMETERS, 40/70 Hz, IRON VANE TYPE

Scale Amps	Transformer Rating	§ Add Suffix	Net Each	
			Horizontal Scale GE No. 50-180143§	Vertical Scale GE No. 50-180141§
0–1	Self-Contained	LALA	$63.00	$63.00
0–15		NDND	63.00	63.00
0–50		NTNT	63.00	63.00

DC VOLTMETERS

Self-contained core magnet D'Arsonval type; 1000 ohms/volt sensitivity.

Scale Volts	Term. Resis., Ohms	§ Add Suffix	Net Each	
			Horizontal Scale GE No. 50-180013§	Vertical Scale GE No. 50-180011§
0–1	1000	LALA	$56.00	$56.00
0–5	5000	LSLS	56.00	56.00
0–50	5000	NTNT	56.00	56.00

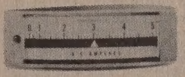
DC AMMETERS

Core magnet D'Arsonval type (self-contained).

Scale μA	Term. Resis., Ohms	§ Add Suffix	Net Each	
			Horizontal Scale GE No. 50-180113§	Vertical Scale GE No. 50-180111§
0–50	2760	CYCY	$75.00	$75.00
0–200	690	EAEA	69.00	69.00
0–1 mA	62.7	FAFA	56.00	56.00

Other Ratings Available On Request.

Write For Prices And Complete Information On Temperature Indicating Instruments Also Available.



TYPE 180 HORIZONTAL

TYPE 180 VERTICAL

TRANSDUCER

AC VOLTS AND AMPS TRANSDUCERS

Output Rating: 3 mADC into 15000 ohms.

GE No. 50-470-	Type	Net Each
101 GCAA	Standard volts 0–150, 50/60 Hz	$130.00
110 GCAA	Standard amps 0–5, 50/60 Hz	130.00

AC WATTS TRANSDUCERS

121AWAA*	Watts, 1-phase/2-wire, 1-element	$190.80
122AWAA	Watts, 3-phase/3-wire, 2-element	304.20
127AWAA	Watts, 3-phase/4-wire, 2½-element	319.50
127AWAA	Vars, 3-phase/3-wire, 2½-element (Y)	319.50
127AWAA†	Vars, 3-phase/4-wire, 2½-element	319.50

*Output Rating: 1 mADC into 2200 ohms; 1 mADC into 4400 ohms for all others. †Input Rating: 5 A, 120 V (L.L.), 60 Hz, 500 C.W.S.; 5 A, 120 V, 60 Hz, 500 C.W.S. for all others.

POWER FACTOR TRANSDUCERS

Input: 120 VAC, 5 amps AC. **Output:** 375–0–375 mVDC. **Power Factor:** .5–1–.5.

GE No. 50-470141 ECFC—Single phase. Net Each. $260.20

GE No. 50-470140 ECFC—Three phase. Net Each. 260.20

FREQUENCY AND TEMPERATURE TRANSDUCERS

GE No. 50-470 135 EGAN Frequency Transducer—Input range, 55 to 65 Hz. Net Each. $268.20

GE No. 50-470150 FFBE Temperature Transducer—Input, 10-ohm copper RTD. Output, 25–0–25 mADC into 25 ohms. Temperature Range, 20–140° C. Power Required, 120 V, 60 Hz. Net Each. $185.40

PHASE-SHIFTING TRANSFORMERS

For measurement of Vars using standard watt transducers.

GE No.	Type	Circuit	Net Each
8600K92001	MC63	3-wire/3-phase	$47.70
8600K92006	MC65	4-wire/3-phase	47.70

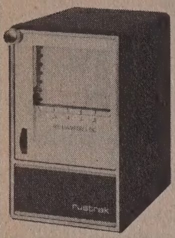
rustrak

THE MINIATURE RECORDER PEOPLE

MINIATURE STRIP CHART RECORDERS

MINIATURE GRAPHIC RECORDERS

AS LOW AS $105.00



Miniature analog recorders print on pressure-sensitive chart paper, have wide applications in industry. Accuracy is ±2% of full scale (±1% available on special order). Standard chart speed is 1″ per hour; easily changed with optional gear boxes (listed on opposite page). 63-foot chart paper roll lasts one month at 1″ per hour. Features include: Internal chart review; time setting thumbwheel; chart access window; tear-off or reroll chart operation easily interchanged. Response time, 1 second for most units. Scale width: Single channel, 2⁵⁄₁₆″; dual channel, 1″. Operate from 115 VAC, 60 Hz. Ready to use; complete with panel mounting hardware, one roll of chart paper and operating manual. Finished in charcoal gray suede coating. Size, 3⅝″ w. x 4⁵⁄₁₆″ d. x 5⅝″ h. Shipping Weight, 5 lbs.

Miniature Graphic Recorders are available in other ranges and models. Write for brochure and prices.

SINGLE CHANNEL DC RANGE RECORDERS

Rustrak Model	Range	Resistance, Ohms	Net Each
288	0–10 μA	5700	$135.00
288	0–50 μA	4700	120.00
288	0–100 μA	4600	115.00
288	0–1 mA	100	110.00
288	0–100 mV	100	105.00

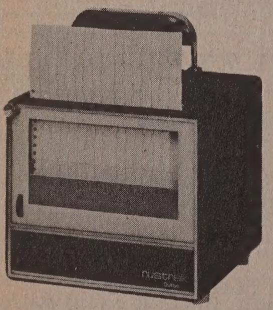
SINGLE RANGE DC VOLTAGE RECORDERS

Rustrak Model	Range	Sensitivity	Net Each
288	0–1 VDC	1000 ohms/V	$110.00
288	0–3 VDC	1000 ohms/V	110.00
288	0–5 VDC	1000 ohms/V	110.00
288	0–10 VDC	1000 ohms/V	110.00
288	0–50 VDC	1000 ohms/V	110.00
288	0–100 VDC	1000 ohms/V	110.00

DUAL CHANNEL DC RANGE RECORDERS

Rustrak Model	Ranges (Dual Channel)	Resistance, Ohms	Net Each
291	0–1 mA and 0–1 mA	100	$150.00
291	0–100 μA and 0–100 μA	4600	165.00
291	0–50 μA and 0–50 μA	5400	175.00

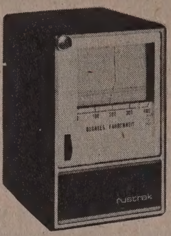
4-, 8- AND 16-CHANNEL EVENT RECORDERS



Record four, eight or sixteen on-off events on the same chart. Actuator response time is 10 milliseconds. Access window slides down for notes. Thumbwheel chart advance operates from front panel for precise time setting or fast paper discharge. Operates at one chart speed (¼, ½, 1, 2, 3, 6, 10, 12, 15, 30 or 60 inches per hour; specify when ordering). Other chart speeds are easily obtainable by using interchangeable gear box listed on opposite page. Standard recorder has 115 VAC, 60 Hz, 2-rpm motor; available with other motor speeds for chart speed up to 3000 inches/hour on special order. Requires 24 VDC at 70 mA per channel; use Model 921-8 power supply, below. Includes one roll of chart paper and operating manual. Finished in charcoal gray suede coating. Size: 4- and 8-channel models, 3⅝″ w. x 4⁵⁄₁₆″ d. x 5⅝″ h.; 16-channel model, 6⅝″ w. x 6″ d. x 5⅝″ h. Shipping Weight, 5 lbs. except 392-16, 8 lbs.

Rustrak Model 292-4 Recorder—4-channel. Net.....**$119.00**
Rustrak Model 292-8 Recorder—8-channel. Net..... **165.00**
Rustrak Model 392-16 Recorder—16-channel. Net... **405.00**
Rustrak Model 921-8 Power Supply—One required for 4 or 8-channel recorders; two needed for 16-channel recorder. Shpg. Wt., 5 lbs. Net Each..............................**$30.00**

MODEL 2122 RECORDING PYROMETER

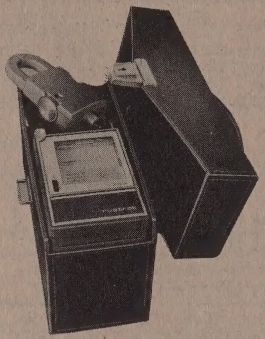


Single channel thermocouple recorder has four switchable ranges: 0–400° F, 0–800° F, 0–1200° F and 0–2400° F; also available in Centigrade equivalents. Cold junction compensation. Supplied with I/C and C/A thermocouples. Operates from 115 VAC, 60 Hz. Size, 3⅝″ w. x 6″ d. x 5⅝″ h. Shipping Weight, 7 lbs.

Rustrak Model 2122 Recording Pyrometer—Specify °F or °C calibration.
Net Each..................**$230.00**

Thermistor and resistance element temperature recorders are also available. Write for descriptive bulletin.

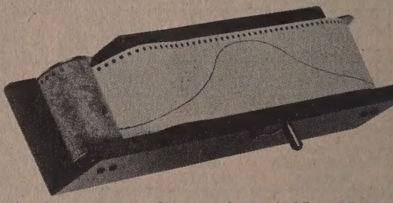
MODEL 230 VOLT/AMP RECORDER



Industrial and commercial AC voltage and current recorder, housed in leatherette case. Three switchable voltage ranges: 0–150, 0–300 and 0–600 volts with ±3% accuracy. Three switchable current ranges: 0–25, 0–100 and 0–300 amps with ±4% accuracy. Thumbwheel chart advance; sliding chart access window. Standard chart speed is 1″ per hour; other speeds available on special order. Uses Q & R type chart paper. Operates from 115 VAC, 60 Hz; draws 3 watts. Furnished with two rolls of chart paper, clamp-on transducer and test leads. Size, 11″ long x 4¼″ wide x 6½″ high. Shipping Weight, 10 lbs.

Rustrak Model 230 Volt/Amp Recorder—Net Each..**$175.00**

MODEL 168 CHART VIEWER



Accepts strip chart recording paper from 1⅞″ to 3″ wide, with ⅝″ I.D. core. Shows 12″ of chart at one time. Maximum roll capacity, 2″ O.D. Size, 14″ long x 3½″ wide x 2⅝″ high.

Rustrak Model 168 Chart Viewer—Net Each.........**$70.00**

OTHER AC RECORDERS

AC VOLTMETER RECORDERS

Rustrak Model	AC Ranges	Net Each
288R	0–150 V	$130.00
293	70–135 V	135.00
293B	70–135, 140–270 and 280–540 V	150.00
293A	70–135 and 140–270 V	140.00
2186	105–125 and 210–250 V	165.00
2186A	105–125, 210–250 and 420–500 V	175.00

AC AMMETER RECORDERS

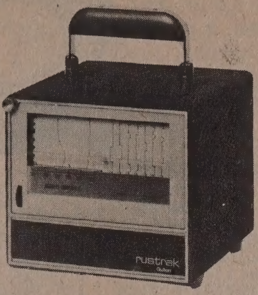
Rustrak Model	AC Ranges	Net Each
2118	0–1 and 0–5 amps	$165.00
2107	0–500 amps with clamp-on transducer	170.00

POTENTIOMETRIC RECORDERS AND ACCESSORIES

rustrak

THE MINIATURE RECORDER PEOPLE

300 SERIES RECORDERS

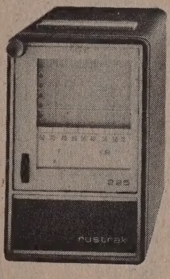


Miniature analog recorder series, available in two- or four-channel models. 5½″ wide chart features 2⁵⁄₁₆″ scale width for two-channel recorders, 1″ per channel for four-channel models. Standard chart speed is 1″ per hour; easily changed with optional gear box, listed below. 63-foot roll of chart paper lasts one month at 1″ per hour speed. Convenient time setting thumbwheel for precise or rapid chart advance. Sliding access window permits making notes on chart. Finished in charcoal gray suede coating. Includes handle, one roll of chart paper and operating manual. Size, 6⅝″ w. x 6″ d. x 5⅝″ h. Shipping Weight, 8 lbs.

Rustrak Model	Channels	Range, Each Channel	Resis. per Channel	Net Each
388	2	0–10 μA	5700 ohms	$345.00
388	2	0–50 μA	4700 ohms	315.00
388	2	0–100 μA	4600 ohms	305.00
388	2	0–1 mA	100 ohms	285.00
388	2	0–100 mV	100 ohms	285.00
391	4	0–1 mA	100 ohms	375.00
391	4	0–100 μA	4600 ohms	405.00
391	4	0–50 μA	5400 ohms	425.00

300 Series Recorders are available in other ranges. Write for descriptive brochure and prices.

MODEL 225 RELATIVE HUMIDITY/ TEMPERATURE RECORDER



Electronically monitors relative humidity from 10% to 90% and temperature from 60° F to 90° F on a single chart. No ink to add; no messy cartridges to change. Chart lasts for two months of continuous monitoring operation. Ideal for use in computer rooms, offices, and similar applications. **Accuracy:** Temperature, ±1° F; humidity, ±4 (for 20–80% relative humidity at 77° F). **Response Time:** Temperature, 1 second (63%); humidity, 30 seconds (63%). **Sampling Rate:** 8 seconds for one cycle. **Paper:** Uses Style P chart paper (listed below). Complete with sensors and wall or panel mounting hardware. Size, 3⅝″ w. x 4⁵⁄₁₆″ d. x 5⅝″ h. Shipping Weight, 5 lbs. **Rustrak Model 225 Humidity/Temperature Recorder**—Net Each.....**$310.00**

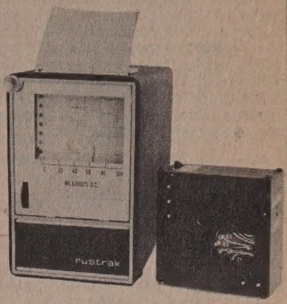
Remote Cables—Permit remote operation of Model 225 recorder up to 100 feet from sensor. 25-foot Cable. Net Each...**$ 9.20** 50-foot Cable. Net...**$13.80** 100-foot Cable. Net... **20.70**

ACCESSORY GEAR BOXES

For quick change of chart speed on Rustrak recorders. When used with 2-rpm motor, gear box number equals chart speed (⅛ to 60 inches per hour). When used with Model 400 recorder, chart speed equals gear box number (⅛ to 60) times four (½ to 240, inches per hour). For other motor speeds, chart speed equals half of motor speed (rpm) times the gear box number.

Rustrak Gear Box—Specify number: ⅛, ¼, ½, 1, 2, 3, 4, 6, 10, 12, 15, 30, 45 or 60. Net Each........................**$6.00**

400 SERIES POTENTIOMETRIC RECORDERS



Continuous impression instrument records on pressure-sensitive paper. Offers basic sensitivity of 100 mV with ±0.5% full-scale accuracy. Features 2⁵⁄₁₆″ scale width; inkless writing; floating input; chart tear-off or reroll operation, easily interchanged. Standard chart speed is 1 inch per hour; changeable from ½″ per hour to 240″ per hour with optional gear boxes, listed at left. Input resistance, 1 megohm minimum. 60 Hz rejection, 100 dB minimum. Finished in charcoal gray suede coating. Order chart paper listed below, with prefix "W" (WA, WB, etc.). Includes one roll of chart paper. Operates from 115 V, 60 Hz only; for DC operation, use S-4126 inverter below. Usable with all Add-A-Function Modules. Size, 3⅝″ w. x 6″ d. x 5⅝″ h. Shipping Weight, 5 lbs.

Rustrak 400 Series Recorder—Net Each............**$285.00**

MODEL 3400 DUAL-CHANNEL POTENTIOMETRIC RECORDER

Same specifications as 400 Series above, but has two channels. Scale width, 2⁵⁄₁₆″ per channel. Usable with Add-A-Function Modules below. Size, 6⅝″ w. x 6″ d. x 5⅝″ h. Shpg. Wt., 10 lbs.

Rustrak Model 3400 Recorder—Net Each..........**$645.00**

ADD-A-FUNCTION MODULES

Small solid-state modules plug into rear of Model 400 and 3400 recorders to change function, increase sensitivity or add ranges. No external power supply needed; no wiring required. Each module is interchangeable with any other in potentiometric series recorders. Supplied with recorder scale to match function.

Rustrak Type	Description or Range	Input Resis. or Freq.	Accuracy	Net Each
P4001	0–10 mV	10k	±0.5%	$160.00
P4004	0–50 mV	1 meg	±0.5%	83.00
P4005	0–10 VDC	50k	±0.5%	22.00
P4005	0–50 VDC	10k	±0.5%	22.00
P4005	0–100 VDC	10k	±0.5%	22.00
P4005	0–150 VDC	10k	±0.5%	22.00
P4005	0–500 VDC	10k	±0.5%	22.00
P4006	0–50 μA	5400 ohms	±0.5%	22.00
P4006	0–100 μA	4600 ohms	±0.5%	22.00
P4006	0–100 μA	1000 ohms	±0.5%	22.00
P4006	0–200 μA	2200 ohms	±0.5%	22.00
P4006	0–500 μA	200 ohms	±0.5%	22.00
P4006	0–1 mA	100 ohms	±0.5%	22.00
P4088R	0–150 VAC	60 Hz	±2%	40.00
P4088R	0–300 VAC	60 Hz	±2%	40.00
P4088R	0–600 VAC	60 Hz	±2%	40.00
P4093	75–135 VAC	60 Hz	±2%	50.00
P4093	150–270 VAC	60 Hz	±2%	50.00
P4093	300–540 VAC	60 Hz	±2%	50.00
P4186	100–130 VAC	60 Hz	±1 V	50.00
P4186	200–260 VAC	60 Hz	±2 V	50.00
P4186	400–520 VAC	60 Hz	±4 V	50.00
P4118	0–1 and 0–5 amps AC	....	±2%	45.00

Write for brochure on complete line.

CHART PAPER IN 63-FOOT ROLLS

STANDARD SINGLE AND DUAL CHANNEL

Rustrak Style	Description	Channels	Net Each
A	50 divisions	Single	$2.50
B	75 divisions	Single	2.50
C	65 divisions	Single	2.50
H	40 divisions	Single	2.50
I	30 divisions	Single	2.50
K	60 divisions	Single	2.50
D	20–20 divisions	Dual	2.50
N	50 divisions and 1 event	Dual	2.50

SPECIAL CHART PAPER

Rustrak Style	Description	Net Each
EE	4 and 8 events	$2.50
P	For Model 225 (Humidity/Temperature)	2.50
Q	For Model 230 (Current)	2.50
R	For Model 230 (Voltage)	2.50

FOR 400 AND 3400 SERIES RECORDERS

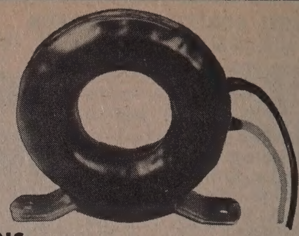
Rustrak Style	For Series	Description	Channels	Net Each
WA	400	50 divisions	Single	$2.50
WB	400	75 divisions	Single	2.50
WC	400	65 divisions	Single	2.50
WH	400	40 divisions	Single	2.50
WI	400	30 divisions	Single	2.50
WK	400	60 divisions	Single	2.50
WA-A	3400	50–50 divisions	Dual	4.10
WA-G	3400	50 divisions, 8 events	Dual	4.10

FOR 300 SERIES RECORDERS

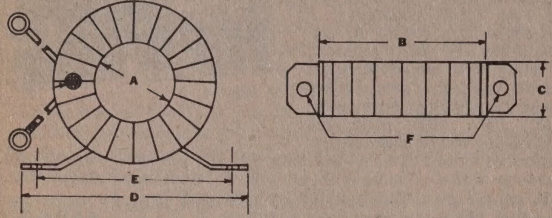
Rustrak Style	Description	Net Each
A-A	50-50 divisions	$4.10
A-E	50 divisions and 8 events	4.10
D-D	20-20/20-20 divisions (4 channels)	4.10
16E	16 channels, events	4.10

Midwest Current Transformers

Ring type current transformers measure currents accurately for switchboard and portable AC ammeters, etc.; transformer slips over primary conductor to be measured. The transformer core is made of coil oriented steel with carefully taped and insulated windings. Standard lead wires are 24″ long and are taped and tied in place. The entire unit is dipped in fungus-resistant "Dolflex" insulating compound to insure maximum protection against moisture, acids, bases, oils, and abrasive particles. Insulation will withstand 4,500 volts before breakdown. Available current ratios 20/5 amps to 3000/5 amps, 25–400 Hz; other ratios available on special order. All transformers supplied with mounting brackets for permanent installation.



TRANSFORMER DIMENSIONS



Midwest Model	Dimensions, Inches						Approx. Wt., Lbs.
	A	B	C	D	E	F	
2CT	1¼	3¾	2⅞	5¼	4	9/32	3¾
3CT	1¼	3¾	1¼	4	3⅞	¼	1¼
4CT14–4CT16	1¼	3½	1¼	4	3⅞	¼	1¼
4CT175–4CT110	1¾	4	1¼	4	3⅞	¼	1½
6CT4–6CT8	1¼	4	2¾	5¼	4	9/32	4
6CT35–6CT13	1¼	3¾	1⅝	4½	3⅞	9/32	2
6CT14–6CT16	2¼	4⅞	1½	7	5¾	9/32	3
6CT175–6CT110	2¾	5	1½	7	5¾	9/32	2¼
6CT112–6CT1116	3¾	6½	1⅝	7¾	6½	9/32	3½
6CT120–6CT130	3½	6½	1¾	7½	6½	¼	3¾
8CT35–8CT14	2	5	1¾	7	5¾	9/32	4½
8CT15–8CT110	2⅛	4¾	2	7	5¾	9/32	5
9CT35–9CT110	2	5	2½	7	5¾	9/32	7

CURRENT TRANSFORMERS

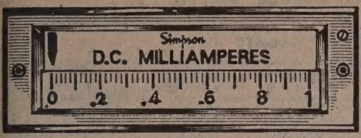
Midwest Model	Current Ratio	Capacity, VA	Primary Turns	Accuracy	List Price
2CT210	10/5	2	2	6.00%	$17.60
2CT115	15/5	2	1	6.00%	17.60
2CT120	20/5	2	1	6.00%	17.60
2CT125	25/5	2	1	6.00%	17.60
2CT130	30/5	2	1	6.00%	17.60
2CT135	35/5	2	1	6.00%	17.60
2CT140	40/5	2	1	6.00%	17.60
3CT205	5/5	2	20	3.00%	11.00
3CT101	10/5	2	10	3.00%	11.00
3CT1015	15/5	2	10	2.00%	11.00
3CT62	20/5	2	6	2.50%	11.00
3CT625	25/5	2	6	2.00%	11.00
3CT63	30/5	2	6	1.60%	11.00
3CT64	40/5	2	6	1.25%	11.00
3CT34	40/5	2	3	2.50%	11.00
3CT15	50/5	2	1	6.00%	11.00
3CT35	50/5	2	3	2.00%	11.00
3CT16	60/5	2	1	5.00%	11.00
3CT36	60/5	2	3	1.60%	11.00
3CT175	75/5	2	1	3.80%	11.00
3CT375	75/5	2	3	1.30%	11.00
3CT18	80/5	2	1	3.80%	11.00
3CT38	80/5	2	3	1.25%	11.00
3CT11	100/5	2	1	3.00%	11.00
3CT21	100/5	2	2	1.50%	11.00
3CT115	150/5	2	1	2.00%	11.00
3CT215	150/5	2	2	1.00%	11.00
3CT12	200/5	2	1	1.50%	11.00
3CT125	250/5	2	1	1.20%	11.00
3CT13	300/5	2	1	1.00%	11.00
4CT135	350/5	2	1	1.00%	13.10
4CT14	400/5	2	1	0.75%	13.10
4CT15	500/5	2	1	0.60%	13.10
4CT16	600/5	2	1	0.50%	13.10
4CT17	700/5	2	1	0.50%	16.30
4CT175	750/5	2	1	0.40%	16.30
4CT18	800/5	2	1	0.38%	16.30
4CT110	1000/5	2	1	0.30%	16.30
6CT205	5/5	5	20	3.00%	15.70
6CT1015	15/5	5	10	2.00%	15.70
6CT62	20/5	5	6	2.50%	15.70
6CT25	25/5	5	1	6.00%	15.70
6CT625	25/5	5	6	2.00%	15.70
6CT63	30/5	5	6	1.60%	15.70
6CT635	35/5	5	6	1.60%	15.70
6CT4	40/5	5	1	6.00%	15.70
6CT34	40/5	5	3	1.25%	15.70
6CT64	40/5	5	6	2.50%	15.70
6CT5	50/5	5	1	6.00%	15.70
6CT35	50/5	5	3	2.00%	15.70
6CT6	60/5	5	1	6.00%	15.70
6CT36	60/5	5	3	1.60%	15.70
6CT7	70/5	5	1	6.00%	15.70
6CT75	75/5	5	1	3.75%	15.70
6CT375	75/5	5	3	1.30%	15.70
6CT8	80/5	5	1	6.00%	15.70
6CT38	80/5	5	3	1.25%	15.70
6CT11	100/5	5	1	3.00%	15.70
6CT1125	125/5	5	1	3.00%	15.70
6CT115	150/5	5	1	2.00%	15.70
6CT12	200/5	5	1	1.50%	15.70
6CT125	250/5	5	1	1.20%	15.70
6CT13	300/5	5	1	1.00%	15.70
6CT135	350/5	5	1	2.50%	17.90
6CT14	400/5	5	1	0.75%	17.90
6CT15	500/5	5	1	0.60%	17.90
6CT16	600/5	5	1	0.50%	17.90
6CT17	700/5	5	1	0.40%	21.10
6CT175	750/5	5	1	0.40%	$21.10
6CT18	800/5	5	1	0.38%	21.10
6CT19	900/5	5	1	0.35%	21.10
6CT110	1000/5	5	1	0.30%	21.10
6CT112	1200/5	5	1	0.25%	27.30
6CT1115	1500/5	5	1	0.15%	27.30
6CT1116	1600/5	5	1	0.15%	31.50
6CT180	1800/5	5	1	0.15%	31.50
6CT120	2000/5	5	1	0.10%	31.50
6CT1250	2500/5	5	1	0.10%	35.80
6CT130	3000/5	5	1	0.10%	35.80
8CT101	10/5	10	10	6.00%	22.80
8CT1015	15/5	10	10	6.00%	22.80
8CT62	20/5	10	6	3.00%	22.80
8CT625	25/5	10	6	3.00%	22.80
8CT63	30/5	10	6	1.60%	22.80
8CT34	40/5	10	3	1.25%	22.80
8CT35	50/5	10	3	2.00%	22.80
8CT36	60/5	10	3	1.60%	22.80
8CT75	75/5	10	1	3.75%	22.80
8CT375	75/5	10	3	1.30%	22.80
8CT38	80/5	10	3	1.25%	22.80
8CT11	100/5	10	1	3.00%	22.80
8CT21	100/5	10	2	1.50%	22.80
8CT1125	125/5	10	1	2.00%	22.80
8CT115	150/5	10	1	2.00%	22.80
8CT215	150/5	10	2	1.00%	22.80
8CT12	200/5	10	1	1.50%	22.80
8CT13	300/5	10	1	1.00%	22.80
8CT14	400/5	10	1	0.75%	27.10
8CT15	500/5	10	1	0.60%	27.10
8CT16	600/5	10	1	0.50%	27.10
8CT175	750/5	10	1	0.40%	31.20
8CT18	800/5	10	1	0.38%	31.20
8CT110	1000/5	10	1	0.30%	31.20
8CT112	1200/5	10	1	0.25%	36.40
8CT1115	1500/5	10	1	0.15%	36.40
8CT1116	1600/5	10	1	0.15%	41.70
8CT120	2000/5	10	1	0.15%	41.70
8CT1250	2500/5	10	1	0.10%	46.90
8CT130	3000/5	10	1	0.10%	46.90
9CT62	20/5	15	6	6.00%	27.00
9CT4	40/5	15	1	3.00%	27.00
9CT34	40/5	15	3	3.00%	27.00
9CT35	50/5	15	3	2.00%	27.00
9CT375	75/5	15	3	1.30%	27.00
9CT11	100/5	15	1	3.00%	27.00
9CT1125	125/5	15	1	2.75%	27.00
9CT115	150/5	15	1	2.00%	27.00
9CT12	200/5	15	1	1.50%	27.00
9CT125	250/5	15	1	1.20%	27.00
9CT13	300/5	15	1	1.00%	27.00
9CT135	350/5	15	1	1.00%	27.00
9CT14	400/5	15	1	0.75%	31.20
9CT15	500/5	15	1	0.60%	31.20
9CT16	600/5	15	1	0.50%	31.20
9CT17	700/5	15	1	0.50%	35.00
9CT175	750/5	15	1	0.40%	35.00
9CT18	800/5	15	1	0.38%	35.00
9CT19	900/5	15	1	0.30%	35.00
9CT110	1000/5	15	1	0.30%	35.00
9CT112	1200/5	15	1	0.25%	41.70
9CT1115	1500/5	15	1	0.15%	41.70
9CT1116	1600/5	15	1	0.15%	48.00
9CT120	2000/5	15	1	0.15%	48.00
9CT1250	2500/5	15	1	0.10%	54.10
9CT130	3000/5	15	1	0.10%	54.10

All Transformers Supplied With Mounting Brackets

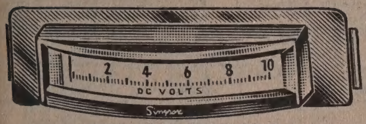
MIDWEST CURRENT TRANSFORMERS CAN BE USED WITH ANY 5A METER

Simpson Panel Meters

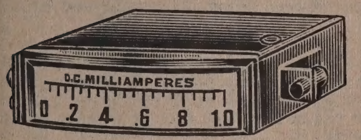
INSTRUMENTS THAT STAY ACCURATE



3623, 3643



1521, 1522, 1541, 1542



1622, 1642, 1921, 1941

CURRENT TRANSFORMERS

Inverted one-turn primary type. For use with AC ammeters. Secondary, 5 amps.

Model	Primary Amps	Net Each, Lots of 1-9	10-24	25-49
1293	50	$29.85	$26.87	$25.37
1306	75	21.90	19.71	18.62
1297	100	18.15	16.34	15.43
1298	150	16.20	14.58	13.77
1299	200	16.20	14.58	13.77
1313	250	16.20	14.58	13.77
1300	300	18.15	16.34	15.43
1305	400	20.25	18.23	17.21
1301	500	21.90	19.71	18.62
2303	600	21.90	19.71	18.62
2459	750	25.95	23.36	22.06
2304	1000	27.90	25.11	23.72

PORTABLE SHUNTS

For DC panel ammeters requiring external shunt. Drop, 50 mV. Accuracy, ±1%. Phenolic base; with 5-ft. leads.

Model	Amps	Net Each, Lots of 1-9	10-24	25-49
6700	1	$12.30	$11.07	$10.46
6703	5	12.30	11.07	10.46
6704	10	12.30	11.07	10.46
6705	15	12.30	11.07	10.46
6707	25	12.30	11.07	10.46
6708	30	12.30	11.07	10.46
6709	50	12.30	11.07	10.46
6711	75	12.30	11.07	10.46
6713	100	12.30	11.07	10.46
6714	150	12.30	11.07	10.46
6715	200	12.30	11.07	10.46

SWITCHBOARD SHUNTS

For DC switchboard ammeters. Drop, 50 mV. Accuracy, ±1%. With 5-ft. leads.

6500	100	$ 12.30	$ 11.07	$ 10.46
6503	150	13.35	12.02	11.35
6504	200	13.35	12.02	11.35
6505	250	13.35	12.02	11.35
6506	300	13.35	12.02	11.35
6507	400	16.20	14.58	13.77
6508	500	19.20	17.28	16.32
6509	600	22.65	20.39	19.25
6510	750	28.95	26.06	24.61
6511	800	30.60	27.54	26.01
6512	1000	37.20	33.48	31.62
6513	1200	44.40	39.96	37.74
6514	1500	55.20	49.68	46.92
6515	2000	61.35	55.22	52.15
6516	2500	77.55	69.80	65.92
6517	3000	91.95	82.76	78.16
6518	3500	128.40	115.56	109.14
6519	4000	153.90	138.51	130.82
6520	4500	168.75	151.88	143.44
6521	5000	189.75	170.78	161.29
6522	6000	209.25	189.33	177.86
6523	7000	251.10	225.99	213.44

EDGEWISE PANEL METERS MODELS 3623 AND 3643

Molded polycarbonate case with top and bottom formed steel covers; two-piece offset scale for parallax-free readings; self-contained mounting lock eliminates need for external hardware; from bezel zero adjust. **Accuracy:** 2% of full scale with standard pivot and jewel suspension; 1% of full scale with taut band suspension available on special order. **Scale Length:** 2.6". **Size:** 3.60" w. x 1.23" h. Specify vertical or horizontal mounting type.

3623 DC PANEL METERS

Model	Scale	Net Each, Lots of 1-9	10-24	25-49
16862	0–25 μA	$42.00	$37.80	$35.70
16863	0–50 μA	39.45	35.51	33.53
16864	0–100 μA	37.20	33.48	31.62
16865	0–200 μA	35.10	31.59	29.84
16866	0–500 μA	34.05	30.65	28.94
16867	25–0–25 μA	39.90	35.91	33.92
16868	0–1 mA	33.15	29.84	28.18
16869	4–20 mA	36.60	32.94	31.11
16870	0–50 mV	34.20	30.78	29.07
16873	0–25 V	35.25	31.73	29.96
16874	0–50 V	35.25	31.73	29.96
16880	0–10 V	35.25	31.73	29.96
16881	0–15 V	35.25	31.73	29.96

3643 AC PANEL METERS

16871	0–5 A*	$46.80	$42.12	$39.78
16879	100–130 V†	85.80	77.22	72.93

*Rectifier type. †Segmental.

STACKING EDGEWISE PANEL METERS—MODELS 1622, 1642, 1921 AND 1941

Stacks horizontally or vertically. Features self-shielding core magnet meter movement to eliminate protruding barrel. Scale extends nearly to full width and height of meter. Steel housing, plastic window, dust-proof construction. Insulated terminals. **Accuracy:** ±2% FS. **Dielectric:** 1,500 V rms. **Terminals:** 1622 and 1642 have 6-32 studs; 1942 and 1941, solder type. **Size:** 1622 and 1642: 2 5/16" w. x 9/16" h.; mtg. ctrs. 2 11/16"; cutout .562" x 2.312"; scale 1.85" lg. 1921 and 1941: 1.81" w. x 2.51" d. x .50" h.; mtg. ctrs. 2.28; cutout .525" x 1.718"; scale 1.370" lg.

DC VOLTMETERS—5,000 OHMS/V

Range Volts	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–10, 0–15	$24.15	$25.65
0–25, 0–50, 0–150	24.15	25.65
0–500	—	25.80

DC MILLIVOLTMETERS

Range mV	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–50	$25.20	$26.70

DC MILLIAMMETERS

Range mA	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–1, 0–5, 0–10	$23.70	$25.35
0–25, 0–50	24.90	26.40
0–100, 0–500	24.90	26.40

DC MICROAMMETERS

Range μA	Net Each, Lots of 1-9* 1921—1½"	1622—2½"
0–25	$31.05	$32.40
0–50	30.75	31.95
0–100	27.45	29.10
0–200	25.20	26.70
0–500	24.60	25.95

RECTIFIER TYPE AC VOLTMETERS—5,000 OHMS/V

Range Volts	Net Each, Lots of 1-9* 1941—1½"	1642—2½"
0–150	$30.15	$31.50

EDGEWISE PANEL INSTRUMENTS—MODELS 1521, 1522, 1541 AND 1542

For mounting wherever space is a problem. Supplied with mounting hardware, including bezel with two speed nuts for quick, easy mounting. **Types:** DC and AC rectifier. **Accuracy:** DC, ±2% of full scale; AC, ±3% of full scale at 25° and 60 Hz sine wave. **Meter Movement:** Self-shielded. **Case:** Dustproof, molded acrylic. **Marking:** Black numbers, white background. **Terminals:** Stud type, ammeters; solder, all others. **Size:** 1521 and 1541: 1¾" w. x 2" d. x 1.13" h., overall; mtg. ctrs. 2"; cutout 1.94" x .53", scale 1⅜" lg. 1522 and 1542: 2½" w. x 3½" d. x 1.22" h. overall; mtg. ctrs., 2 15/16"; cutout 2.56" x .68"; scale 1⅞" lg.

VOLUME LEVEL INDICATORS

Range VU	Net Each, Lots of 1-9* 1541—1½"	1542—2½"
A or B Scale	—	$36.45

DC MILLIVOLTMETERS

Range mV	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–50	$21.30	$23.55

DC VOLTMETERS

Ranges Available: 0–10, 0–15, 0–25, 0–50, 0–150 and 0–500. All 1,000 ohms/volt, except 0–500 V, 2,000 ohms/V.

Range Volts	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–10 to 0–150	$20.25	$22.35
0–500	20.55	22.65

DC MICROAMMETERS

Range μA	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–25	$30.60	$32.85
0–50	26.85	28.80
0–100	23.70	25.95
0–200	21.30	23.55
0–500	20.85	22.80

DC MILLIAMMETERS

Range mA	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–1, 0–5	$19.95	$21.90
0–10	19.95	21.90
0–25, 0–50, 0–100	20.85	22.95
0–500	20.85	22.95

DC AMMETERS

Range Amps	Net Each, Lots of 1-9* 1521—1½"	1522—2½"
0–5, 0–25	—	$23.55

RECTIFIER TYPE AC VOLTMETER

Resistance: 1,000 ohms per volt.

Range Volts	Net Each, Lots of 1-9* 1541—1½"	1542—2½"
0-150	$26.40	$28.35
0-300	—	28.35

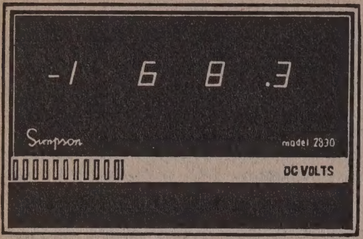
★QUANTITY DISCOUNTS

Lots of	Discount	Multiplier
1–9	None	....
10–24	–10%	.90
25-49	–15%	.85

Simpson Panel & Portable Meters

INSTRUMENTS THAT STAY ACCURATE

MODEL 2830 DIGITAL PANEL METER



Reliable 3½ digit digital panel meter for DC voltage and current measurements. Solid state circuitry with IC's for fast and accurate measurements. Features include automatic polarity and out of range indication. High input impedance and fast response time. Zero span and balance adjustable from front panel. Non-blinking type meter has bi-polar display and LED readout (.33″ high). AC line operated and built-in power supply. Programmed cyclical burn-in. **Accuracy:** 0.1%. **Response Time:** Up to 1000 counts, less than 600 millisec. **Power Required:** 117/243 VAC ±10%, 50-400 Hz, 6 watts. **Size:** 4.34″ w. x 2.813″ d. x 2.70″ h.; panel cutout, 2.813″ x 4.375″.

DC VOLTAGE MEASUREMENTS

Range	Maximum Indication	Input Impedance	Maximum Input V	Simpson Number	Net Each
200 mV	199.9 mV	100 megohms*	300 V	22960	$157.50
2 V	1.999 V	1000 megohms*	300 V	22961	157.50
20 V	19.99 V	10 megohms	300 V	22962	157.50
200 V	199.9 V	10 megohms	300 V	22963	157.50

DC CURRENT MEASUREMENTS

Range	Maximum Indication	Voltage Drop†	Max. Input Current	Simpson Number	Net Each
20 μA	19.99 μA	100 mV	5 mA	22965	$157.50
200 μA	1999.9 μA	100 mV	14 mA	22966	157.50
2 mA	1.999 mA	100 mV	50 mA	22967	157.50
20 mA	19.99 mA	100 mV	140 mA	22968	157.50
200 mA	199.9 mA	100 mV	1 A	22969	157.50

*Greater than. †Based on numerical indication of 1000. Bias current, 2 nA max. at reference conditions. Input isolation, 250 V rms between power line ground and circuit ground.

Options Available: Readout assembly can be remotely mounted. A/D conversion board available separately and with BCD output. Parallel BCD output; DTL/TTL compatible (1-2-4-8 positive logic). Logic Level: Logic "0" = 0 to +0.5 V. Logic "1" = +2 V to +5.25 V. Power supply board is separate; unit can be furnished with or without power supply, or for different input power requirements.

MODEL 2100 4½″ PORTABLE INSTRUMENT WITH BUILT-IN CENTURY SERIES METERS

Best suited for electric measurements in schools, labs and industry. Features large, easy to read scale, knife-edge pointer; non-fogging glass lens. Self-shielded DC and AC rectifier movements. Four color-coded, multi-range binding posts, one common and 3 for range selection. Rear hole permits mounting fuse holder; nylon plug covers hole when not in use. **Accuracy:** DC instruments, ±2% full-scale; AC instruments, ±3% full-scale. **Size:** 5.15″ w. x 5.55″ d. x 5.70″ h.

Simpson Model 2100 Portable Instrument—Comes in white case with black and white panel. Built-in Century meters with following ranges are stock items.

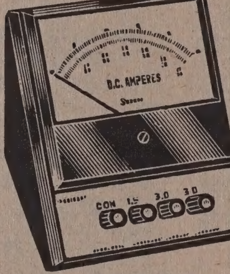
Wide-Vue meters, other ranges available on special order.

DC METERS

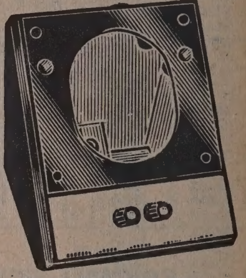
Model	Ranges	Net Each
17950	0–1.5–3–30 Amps	$36.60
17951	0–1–10–100 mA	36.60
17952	0–25–50–500 mA	36.60
17953	0–10–50–250 μA	70.35
17954	0–1.5–3–30 V	36.60
17955	0–10–25–100 V	37.50
17960	0–1K–100K ohms	40.95

AC METERS

17956	0–3–15–150 V	$52.35
17957	0–30–150–300 V	52.35
17958	0–150–300–600 V	48.45



Model 2100



Model 2100 Case Kit

Simpson Model 2100, Catalog No. 17949 Case Kit—Case assembly for mounting a 4½″ meter to meet specific needs. Includes case, panel assembly, legend overlay, two binding posts, nylon plug and hardware. Net Each.......................................**$7.95**

BOLD-VUE PANEL METERS

2
.4
.6
.8
0
1
D.C.
MILLIAMPERES

Bold looking panel meters for 3-hole mounting. Made for easy reading, with bold numbers and wide tapered red lance pointer. DC meters have self-shielded annular movements; AC meters have magnetically damped iron vane movements. **Accuracy:** ±2% of full-scale. **Scale Length:** 2½″ meters, 2.207″; 3½″ meters, 3.047″. **Size:** 2½″ meters have 2¾″ x 2¹¹⁄₁₆″ flange; body, 2.17″ dia. x 1.19″ deep. 3½″ meters have 3½″ x 3½″ flange; body, 2.75″ dia. x 1.19″ deep.

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT

Range Volts	Approx. Resis., Ohms	Model 1222—2½″ Net Each, Lots of 1-9	Model 1222—2½″ 10-24	Model 1222—2½″ 25-49	Model 1223—3½″ Net Each, Lots of 1-9	Model 1223—3½″ 10-24	Model 1223—3½″ 25-49
0–5	1000 ohms/ volt	$22.35	$20.12	$19.00	$23.10	$20.79	$19.64
0–10		22.35	20.12	19.00	23.10	20.79	19.64
0–15		22.35	20.12	19.00	23.10	20.79	19.64
0–25		22.35	20.12	19.00	23.10	20.79	19.64
0–30		22.35	20.12	19.00	23.10	20.79	19.64
0–50		22.35	20.12	19.00	23.10	20.79	19.64
0–100		22.35	20.12	19.00	23.10	20.79	19.64
0–150		22.35	20.12	19.00	23.10	20.79	19.64

DC AMMETERS—SELF-SHIELDED METER MOVEMENT

Range Volts	Approx. Resis., Ohms	Model 1222—2½″ Net Each, Lots of 1-9	Model 1222—2½″ 10-24	Model 1222—2½″ 25-49	Model 1223—3½″ Net Each, Lots of 1-9	Model 1223—3½″ 10-24	Model 1223—3½″ 25-49
0–1	.050	$21.30	$19.17	$18.11	$20.25	$18.23	$17.21
0–5	.010	21.30	19.17	18.11	20.25	18.23	17.21
0–10	.005	21.30	19.17	18.11	20.25	18.23	17.21

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

Range Volts	Approx. Resis., Ohms	Model 1222—2½″ Net Each, Lots of 1-9	Model 1222—2½″ 10-24	Model 1222—2½″ 25-49	Model 1223—3½″ Net Each, Lots of 1-9	Model 1223—3½″ 10-24	Model 1223—3½″ 25-49
0–1 mA	43.0	$21.00	$18.90	$17.85	$21.60	$19.44	$18.36
0–50	2.0	21.30	19.17	18.11	21.60	19.44	18.36
0–100	1.0	21.30	19.17	18.11	22.35	20.12	19.00
0–500	0.2	21.30	19.17	18.11	22.35	20.12	19.00

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT

0–50 μA	1800	$27.00	$24.30	$22.95	$27.45	$24.71	$23.33
0–100	1800	24.15	21.74	20.53	25.20	22.68	21.42
0–200	1100	21.90	19.71	18.62	23.10	20.79	19.64
25–0–25	1800	—	—	—	27.75	24.98	23.59
50–0–50	1800	24.60	22.14	20.91	25.20	22.68	21.42
100–0–100	1100	22.35	20.12	19.00	23.25	20.93	19.76

AC AMMETERS—IRON VANE TYPE MOVEMENT

Range	Approx. Resis., Ohms	Model 1252—2½″ Net Each, Lots of 1-9	Model 1252—2½″ 10-24	Model 1252—2½″ 25-49	Model 1253—3½″ Net Each, Lots of 1-9	Model 1253—3½″ 10-24	Model 1253—3½″ 25-49
0–5 Amps	.008	$17.40	$15.66	$14.79	$18.30	$16.47	$15.56
0–10	.004	17.40	15.66	14.79	18.30	16.47	15.56
0–15	.0025	17.40	15.66	14.79	18.30	16.47	15.56
0–25	.002	18.15	16.34	15.43	18.90	17.01	16.07
0–50	.001	19.95	17.96	16.96	18.90	17.01	16.07

AC VOLTMETERS—IRON VANE TYPE MOVEMENT

0–150 V	25,000	$21.15	$19.04	$17.98	$22.80	$20.52	$19.38
0–300	50,000	21.15	19.04	17.98	22.80	20.52	19.38

Additional Digital Panel Meters on Pages 428, 432 and 490

Simpson Century Panel Meters

INSTRUMENTS THAT STAY ACCURATE

D.C. MICROAMPERES
10
20
30
40
50
Simpson

Century Series panel meters offer attractive design and easy reading. DC meters have self-shielded movements, with calibration unaffected by stray magnetic fields or magnetic mounting. AC meters have iron vane type movement. AC milliammeters and ammeters are calibrated for use on 25 through 800 Hz; AC voltmeters, 25–125 Hz. Calibration for frequencies up to 800 Hz available on request. **Flange Size:** 1½″ meters, 1.75″ sq.; 2½″ meters, 2.38″ sq.; 3½″ meters, 3.00″ sq.; 4½″ meters, 4.66″ x 4.20″. **Depth Behind Panel:** 1.34″ except 1½″ meters, .90″; wattmeters, 1.75″.

SPECIFICATIONS

Size	Model	Accuracy, Full Scale	Scale Lgth.	Mtg. Hole	4 Mtg. Studs on
1½″	2121	±2%	1.50″	1.51″ dia.	1.32″ centers #4-40
	2141	±3%			
2½″	2122, T	±2%	2.30″	2.16″ dia.	1.88″ centers #4-40
	2142	±3%			
	2152	±2%			
3½″	2123, T	±2%	3.14″	2.69″ dia.	2.24″ centers #4-40
	2143	±3%			
	2153, 2133	±2%			
	2173	±3%		2.75″	
4½″	2124, T	±2%	3.93″	2.69″ dia.	4″ x 3.57″ centers #6-32
	2144	±3%			
	2154, 2134	±2%			
	2174	±3%		2.75″	

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT (1000 OHMS/VOLT EXCEPT AS NOTED)

MODEL 2121—1½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$20.85	$18.77	$17.72
0–8	—	—	—
0–10	20.85	18.77	17.72
0–15	20.85	18.77	17.72
0–25	20.85	18.77	17.72
0–30	20.85	18.77	17.72
0–50	20.85	18.77	17.72
0–100	20.85	18.77	17.72
0–150	20.85	18.77	17.72
0–200	—	—	—
0–250	—	—	—
0–300	—	—	—
0–300*	20.85	18.77	17.72
0–500*†	25.95	23.36	22.06

MODEL 2122—2½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$22.35	$20.12	$19.00
0–8	—	—	—
0–10	22.35	20.12	19.00
0–15	22.35	20.12	19.00
0–25	22.35	20.12	19.00
0–30	22.35	20.12	19.00
0–50	22.35	20.12	19.00
0–100	22.35	20.12	19.00
0–150	22.35	20.12	19.00
0–200	—	—	—
0–250	—	—	—
0–300	22.35	20.12	19.00
0–300*	—	—	—
0–500*	23.10	20.79	19.64
0–750*†	28.05	25.25	23.84
0–1000*†	28.95	26.06	24.61

MODEL 2123—3½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$23.10	$20.79	$19.64
0–8	—	—	—
0–10	23.10	20.79	19.64
0–15	23.10	20.79	19.64
0–25	23.10	20.79	19.64
0–30	23.10	20.79	19.64
0–50	23.10	20.79	19.64
0–100	23.10	20.79	19.64
0–150	23.10	20.79	19.64
0–200	23.10	20.79	19.64
0–250	23.10	20.79	19.64
0–300	23.10	20.79	19.64
0–300*	—	—	—
0–500*	24.15	21.74	20.54
0–750*	24.15	21.74	20.54
0–1000*†	29.85	26.87	25.37

MODEL 2124—4½″

Range	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	$25.20	$22.68	$21.42
0–8	25.20	22.68	21.42
0–10	25.20	22.68	21.42
0–15	25.20	22.68	21.42
0–25	25.20	22.68	21.42
0–30	25.20	22.68	21.42
0–50	25.20	22.68	21.42
0–100	25.20	22.68	21.42
0–150	25.20	22.68	21.42
0–200	25.20	22.68	21.42
0–250	—	—	—
0–300	25.20	22.68	21.42
0–300*	—	—	—
0–500*	26.10	23.49	22.19
0–750*	26.10	23.49	22.19
0–1000*†	31.95	28.76	27.16

*2000 ohms/volt. †External multiplier furnished; all others self-contained.

DC AMMETERS—SELF-SHIELDED METER MOVEMENT

Self-contained types are: 1½″ through 10 amps; 2½″, 3½″ and 4½″ through 50 amps. All other ranges require external shunts.

MODEL 2121—1½″

0–1 Amps	$20.85	$18.77	$17.72
0–1.5	—	—	—
0–2	20.85	18.77	17.72
0–3	20.85	18.77	17.72
0–5	20.85	18.77	17.72
0–10	20.85	18.77	17.72
0–15	20.85	18.77	17.72
0–25	20.85	18.77	17.72
0–30	—	—	—
0–50	20.85	18.77	17.72
0–100	—	—	—
0–150	—	—	—
0–200	—	—	—
0–300	—	—	—
0–500	—	—	—
15–0–15	—	—	—
30–0–30	—	—	—

MODEL 2122—2½″

0–1 Amps	$21.30	$19.17	$18.11
0–1.5	21.30	19.17	18.11
0–2	21.30	19.17	18.11
0–3	21.30	19.17	18.11
0–5	21.30	19.17	18.11
0–10	21.30	19.17	18.11
0–15	21.30	19.17	18.11
0–25	21.30	19.17	18.11
0–30	21.30	19.17	18.11
0–50	21.30	19.17	18.11
0–100	21.30	19.17	18.11
0–150	—	—	—
0–200	21.30	19.17	18.11
0–300	—	—	—
0–500	—	—	—
15–0–15	—	—	—
30–0–30	—	—	—

MODEL 2123—3½″

0–1 Amps	$22.35	$20.12	$19.00
0–1.5	22.35	20.12	19.00
0–2	22.35	20.12	19.00
0–3	22.35	20.12	19.00
0–5	22.35	20.12	19.00
0–10	22.35	20.12	19.00
0–15	22.35	20.12	19.00
0–25	22.35	20.12	19.00
0–30	22.35	20.12	19.00
0–50	22.35	20.12	19.00
0–100	22.35	20.12	19.00
0–150	22.35	20.12	19.00
0–200	22.35	20.12	19.00
0–300	22.35	20.12	19.00
0–500	22.35	20.12	19.00
15–0–15	23.55	21.20	20.02
30–0–30	23.55	21.20	20.02

MODEL 2124—4½″

0–1 Amps	$24.15	$21.74	$20.53
0–1.5	—	—	—
0–2	24.15	21.74	20.53
0–3	24.15	21.74	20.53
0–5	24.15	21.74	20.53
0–10	24.15	21.74	20.53
0–15	24.15	21.74	20.53
0–25	24.15	21.74	20.53
0–30	24.15	21.74	20.53
0–50	24.15	21.74	20.53
0–100	24.15	21.74	20.53
0–150	24.15	21.74	20.53
0–200	24.15	21.74	20.53
0–300	24.15	21.74	20.53
0–500	24.15	21.74	20.53
15–0–15	—	—	—
30–0–30	—	—	—

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 2121—1½″

0–1 mA	$19.95	$17.96	$16.96
0–3	—	—	—
0–5	19.95	17.96	16.96
0–10	19.95	17.96	16.96
0–15	19.95	17.96	16.96
0–20	—	—	—
0–25	20.85	18.77	17.72
0–50	20.85	18.77	17.72
0–100	20.85	18.77	17.72
0–150	20.85	18.77	17.72
0–200	20.85	18.77	17.72
0–250	20.85	18.77	17.72
0–300	20.85	18.77	17.72
0–500	20.85	18.77	17.72
0–750	—	—	—
0–1000	—	—	—

MODEL 2122—2½″

0–1 mA	$21.00	$18.90	$17.85
0–3	21.00	18.90	17.85
0–5	21.00	18.90	17.85
0–10	21.00	18.90	17.85
0–15	21.00	18.90	17.85
0–20	—	—	—
0–25	21.30	19.17	18.11
0–50	21.30	19.17	18.11
0–100	21.30	19.17	18.11
0–150	21.30	19.17	18.11
0–200	21.30	19.17	18.11
0–250	21.30	19.17	18.11
0–300	21.30	19.17	18.11
0–500	21.30	19.17	18.11
0–750	—	—	—
0–1000	21.30	19.17	18.11

MODEL 2123—3½″

0–1 mA	$21.60	$19.44	$18.36
0–3	21.60	19.44	18.36
0–5	21.60	19.44	18.36
0–10	21.60	19.44	18.36
0–15	—	—	—
0–20	21.60	19.44	18.36
0–25	22.35	20.12	19.00
0–50	22.35	20.12	19.00
0–100	22.35	20.12	19.00
0–150	22.35	20.12	19.00
0–200	22.35	20.12	19.00
0–250	22.35	20.12	19.00
0–300	22.35	20.12	19.00
0–500	22.35	20.12	19.00
0–750	22.35	20.12	19.00
0–1000	—	—	—

MODEL 2124—4½″

0–1 mA	$23.10	$20.79	$19.64
0–3	23.10	20.79	19.64
0–5	23.10	20.79	19.64
0–10	23.10	20.79	19.64
0–15	—	—	—
0–20	—	—	—
0–25	24.15	21.74	20.53
0–50	24.15	21.74	20.53
0–100	24.15	21.74	20.53
0–150	24.15	21.74	20.53
0–200	24.15	21.74	20.53
0–250	24.15	21.74	20.53
0–300	24.15	21.74	20.53
0–500	24.15	21.74	20.53
0–750	24.15	21.74	20.53
0–1000	24.15	21.74	20.53

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 2121—1½″

0–50 µA	$26.10	$23.49	$22.19
0–100	23.25	20.93	19.76
0–200	21.15	19.04	17.98
0–500	20.85	18.77	17.72
25–0–25	26.25	23.63	22.31
50–0–50	23.55	21.20	20.02
100–0–100	21.30	19.17	18.11
500–0–500	20.25	18.23	17.21

MODEL 2122—2½″

0–50 µA	$27.00	$24.30	$22.95
0–100	24.15	21.74	20.53
0–200	21.90	19.71	18.62
0–500	21.60	19.44	18.36
25–0–25	—	—	—
50–0–50	24.60	22.14	20.91
100–0–100	22.35	20.12	19.00
500–0–500	21.15	19.04	17.98

MODEL 2123—3½″

0–50 µA	$27.45	$24.71	$23.33
0–100	25.20	22.68	21.42
0–200	23.10	20.79	19.64
0–500	23.10	20.79	19.64
25–0–25	27.75	24.98	23.59
50–0–50	25.20	22.68	21.42
100–0–100	23.25	20.93	19.76
500–0–500	21.90	19.71	18.62

MODEL 2124—4½″

0–50 µA	$29.70	$26.73	$25.24
0–100	28.05	25.25	23.65
0–200	25.20	22.68	21.12
0–500	24.60	22.14	20.91
25–0–25	29.85	26.87	25.38
50–0–50	28.20	25.38	24.07
100–0–100	25.65	23.09	21.76
500–0–500	23.25	20.93	19.77

DC MICROAMMETERS—SELF-SHIELDED TAUT BAND METER MOVEMENT

MODEL 2122T—2½″

Range µA	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5	5750	—	—	—
0–10	4900	$43.05	$38.75	$36.59
0–15	1960	39.15	35.24	33.28
0–25	1960	37.20	33.48	31.62
0–50	960	29.25	26.33	24.86
0–100	500	26.55	23.90	22.57
0–200	234	24.90	22.41	21.17

MODEL 2123T—3½″

Range µA	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5	5750	$51.15	$46.04	$43.48
0–10	4900	45.00	40.50	38.25
0–15	1960	40.20	36.18	34.17
0–25	1960	39.00	35.10	33.15
0–50	960	29.85	26.87	25.38
0–100	500	27.45	24.71	23.33
0–200	234	—	—	—

MODEL 2124T—4½″

Range µA	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5	5750	$54.30	$48.87	$46.16
0–10	4900	48.60	43.74	41.31
0–15	1960	43.80	39.42	37.23
0–25	1960	42.30	38.07	35.96
0–50	960	32.10	28.89	27.29
0–100	500	30.30	27.27	25.76
0–200	234	28.65	25.79	24.35

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY. CONTINUED ON NEXT PAGE

Simpson Century Panel Meters

INSTRUMENTS THAT STAY ACCURATE

DC MILLIVOLTMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 2122—2½″

Range mV	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$21.30	$19.17	$18.11
50–0–50	20	—	—	—

MODEL 2123—3½″

Range mV	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$22.35	$20.12	$19.00
50–0–50	20	22.35	20.12	19.00

MODEL 2124—4½″

Range mV	Approx. Ohms	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$24.15	$21.74	$20.53
50–0–50	20	24.15	21.74	20.53

RECTIFIER TYPE AC VOLTMETERS—SELF-SHIELDED METER MOVEMENT (2000 OHMS/VOLT)

MODEL 2141—1½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$28.65	$25.79	$24.36
0–10	28.65	25.79	24.36
0–15	—	—	—
0–50	—	—	—
0–150	28.65	25.79	24.36
0–300	28.65	25.79	24.36

MODEL 2142—2½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$26.55	$23.90	$22.57
0–10	—	—	—
0–15	—	—	—
0–50	—	—	—
0–150	26.55	23.90	22.57
0–300	—	—	—

MODEL 2143—3½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$30.30	$27.27	$25.76
0–10	30.30	27.27	25.76
0–15	30.30	27.27	25.76
0–50	30.30	27.27	25.76
0–150	30.30	27.27	25.76
0–300	—	—	—

MODEL 2144—4½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$33.60	$30.24	$28.56
0–10	33.60	30.24	28.56
0–15	33.60	30.24	28.56
0–50	33.60	30.24	28.56
0–150	33.60	30.24	28.56
0–300	33.60	30.24	28.56

AC VOLTMETERS—IRON VANE TYPE MOVEMENT (SELF-CONTAINED EXCEPT 0—500 V)

MODEL 2152—2½″

Range	Imped., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	33	—	—	—
0–10	133	$20.25	$18.23	$17.21
0–15	300	20.25	18.23	17.21
0–25	833	20.25	18.23	17.21
0–50	3,333	20.25	18.23	17.21
0–100	16,666	—	—	—
0–150	25,000	21.15	19.04	17.98
0–250	41,166	21.15	19.04	17.98
0–300	50,000	21.15	19.04	17.98
0–500	83,333	—	—	—

MODEL 2153—3½″

Range	Imped., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	33	$21.15	$19.04	$17.98
0–10	133	21.15	19.04	17.98
0–15	300	21.15	19.04	17.98
0–25	833	21.15	19.04	17.98
0–50	3,333	21.15	19.04	17.98
0–100	16,666	21.90	19.71	18.62
0–150	25,000	22.80	20.52	19.38
0–250	41,166	22.80	20.52	19.38
0–300	50,000	22.80	20.52	19.38
0–500	83,333	28.80	25.92	24.48

MODEL 2154—4½″

Range	Imped., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–5 Volts	33	—	—	—
0–10	133	$23.70	$21.33	$20.15
0–15	300	23.70	21.33	20.15
0–25	833	23.70	21.33	20.15
0–50	3,333	23.70	21.33	20.15
0–100	16,666	23.70	21.33	20.15
0–150	25,000	24.15	21.74	20.53
0–250	41,166	24.15	21.74	20.53
0–300	50,000	24.15	21.74	20.53
0–500	83,333	30.75	27.68	26.14

AC AMMETERS—IRON VANE TYPE MOVEMENT

The following meters are self-contained: 2½″ through 50 amps, 3½″ and 4½″ through 75 amps. Higher range AC ammeters are 5-amp type to be used with external current transformer (listed on another page).

MODEL 2152—2½″

0–1 Amps	.213	$19.20	$17.28	$16.32
0–1.5	.105	19.20	17.28	16.32
0–2	.065	—	—	—
0–3	.028	19.20	17.28	16.32
0–5	.008	19.20	17.28	16.32
0–10	.004	19.20	17.28	16.32
0–15	.0025	19.20	17.28	16.32
0–25	.002	19.95	17.96	16.96
0–30	.0015	19.95	17.96	16.96
0–50	.001	19.95	17.96	16.96
0–75	.008	—	—	—
0–100	.008	18.90	17.01	16.07
0–150	.008	—	—	—
0–200	.008	—	—	—
0–300	.008	—	—	—

MODEL 2153—3½″

0–1 Amps	.213	$20.25	$18.23	$17.21
0–1.5	.105	—	—	—
0–2	.065	20.25	18.23	17.21
0–3	.028	20.25	18.23	17.21
0–5	.008	20.25	18.23	17.21
0–10	.004	20.25	18.23	17.21
0–15	.0025	20.25	18.23	17.21
0–25	.002	21.00	18.90	17.85
0–30	.0015	21.00	18.90	17.85
0–50	.001	21.00	18.90	17.85
0–75	.008	20.25	18.23	17.21
0–100	.008	20.25	18.23	17.21
0–150	.008	20.25	18.23	17.21
0–200	.008	20.25	18.23	17.21
0–300	.008	20.25	18.23	17.21

MODEL 2154—4½″

0–1 Amps	.215	$21.45	$19.31	$18.23
0–1.5	.105	—	—	—
0–2	.065	21.45	19.31	18.23
0–3	.028	21.45	19.31	18.23
0–5	.008	21.45	19.31	18.23
0–10	.004	21.45	19.31	18.23
0–15	.0025	21.45	19.31	18.23
0–25	.002	22.35	20.12	19.00
0–30	.0015	22.35	20.12	19.00
0–50	.001	22.35	20.12	19.00
0–75	.008	24.15	21.74	20.53
0–100	.008	21.45	19.31	18.23
0–150	.008	21.45	19.31	18.23
0–200	.008	21.45	19.31	18.23
0–300	.008	21.45	19.31	18.23

AC MILLIAMMETERS—IRON VANE TYPE MOVEMENT

Ranges Available: 0–10 (Model 2153 not available), 0–50, 0–100, 0–250, 0–500 mA; specify when ordering.

MODEL 2152—2½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$18.90	$17.01	$16.07

MODEL 2153—3½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$20.25	$18.23	$17.21

MODEL 2154—4½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$21.45	$19.31	$18.23

NEW!—DUAL-RANGE AC PANEL METERS, MODELS 2153 AND 2154, 0-150 AC VOLTS/0-5 AC AMPERES

Single instrument measures both volts and amps. For use in many common applications using an AC voltmeter and ammeter in pairs. Lets you save on panel space and purchasing cost. Can also measure extended AC current ranges through an accessory transformer. Available in 3½″ and 4½″ sizes, in Wide-Vue and Century Models.

Century Dual-Range Meter Model No.	Size	Net Each, Lots of 1-9	10-24	25-49
2153	3½″	$28.95	$26.06	$24.61
2154	4½″	30.90	27.81	26.27

VOLUME LEVEL INDICATORS—SELF-SHIELDED METER MOVEMENT

Range	Model 2141—1½″ Net Each, Lots of 1-9	10-24	25-49	Model 2142—2½″ Net Each, Lots of 1-9	10-24	25-49
General Purpose dB*	—	—	—	$29.70	$26.73	$25.25
A Scale VU†	$31.95	$28.75	$27.16	35.25	31.73	29.96
B Scale VU†	—	—	—	—	—	—

Range	Model 2143—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 2144—4½″ Net Each, Lots of 1-9	10-24	25-49
General Purpose dB*	$31.50	$28.35	$26.78	$32.55	$29.30	$27.67
A Scale VU†	36.00	32.40	30.60	39.15	35.24	33.28
B Scale VU†	36.00	32.40	30.60	39.15	35.24	33.28

*Zero power level, 6 mW, 500-ohm line; 5000-ohm range. †Reference level, 1 mW, 600-ohm line; meet all electrical and ballistic specifications by Bell Labs and ASA as required by broadcasting, communication and sound engineers. Impedance, 3900 ohms at "0" VU.

WATTMETERS—DYNAMOMETER TYPE SINGLE PHASE

Accuracy, ±2% F.S. Maximum volts, 150 except 0–600 and up, 300 V. Calibrated for magnetic or non-magnetic panels; 25–125 Hz.

Range Watts	Max. Amps	Model 2173—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 2174—4½″ Net Each, Lots of 1-9	10-24	25-49
0–75	1.0	$45.00	$40.50	$38.25	$55.80	$50.22	$47.43
0–150	2.0	45.00	40.50	38.25	55.80	50.22	47.43
0–300	4.0	45.00	40.50	38.25	55.80	50.22	47.43
0–750	10.0	45.00	40.50	38.25	55.80	50.22	47.43
0–600	4.0	48.75	43.88	41.44	59.55	53.60	50.62
0–1500	10.0	48.75	43.88	41.44	59.55	53.60	50.62
0–3000	20.0	48.75	43.88	41.44	59.55	53.60	50.62

WATTMETERS—COMPENSATED TYPE (±3% F.S. ACCURACY)

0–10	.175	$71.70	$64.53	$60.95	$74.55	$67.10	$63.37
0–20	.400	71.70	64.53	60.95	74.55	67.10	63.37
0–20*	.175	71.70	64.53	60.95	74.55	67.10	63.37
0–30	.650	71.70	64.53	60.95	74.55	67.10	63.37
0–30*	.300	71.70	64.53	60.95	74.55	67.10	63.37
0–50*	.500	71.70	64.53	60.95	74.55	67.10	63.37

*Maximum volts, 500; all others 300 volts maximum.

RF AMMETERS—SELF-SHIELDED METER MOVEMENT

Range Amps	Approx. Resis., Ohms	Model 2133—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 2134—4½″ Net Each, Lots of 1-9	10-24	25-49
0–1	.343	—	—	—	$29.25	$26.33	$24.86
0–2	.120	$25.65	$23.09	$21.80	29.25	26.33	24.86
0–3	.08	25.65	23.09	21.80	—	—	—
0–5	.045	25.65	23.09	21.80	—	—	—
0–10	.023	25.65	23.09	21.80	29.25	26.33	24.86

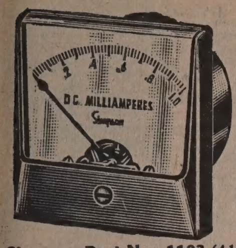
DC GALVANOMETERS—SELF-SHIELDED METER MOVEMENT

Range	Sensitivity µA	Model 2122—2½″ Net Each, Lots of 1-9	10-24	25-49	Model 2123—3½″ Net Each, Lots of 1-9	10-24	25-49
50–0–50	500–0–500	$21.00	$18.90	$17.85	$21.90	$19.71	$18.62
50–0–50	75–0–75	—	—	—	24.60	22.14	20.91

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY. WRITE FOR INFORMATION.

Simpson Wide-Vue Panel Meters

INSTRUMENTS THAT STAY ACCURATE



Modern styling with durable, open face plastic cover for wide-angle readability and protection of meter face. DC meters have self-shielded meter movement (calibration not affected by stray magnetic fields or magnetic mounting). AC meters have iron-vane type movement. AC Milliammeters and Ammeters are calibrated for 25–800 Hz; Voltmeters are calibrated for use on 25–125 Hz; Wattmeters calibrated for either magnetic or non-magnetic panels and frequency range of 25–125 Hz. Other calibrations at frequencies up to 800 Hz, available on request.

Simpson Part Nos. 1123 (4½″) or **1253** (3½″) **Bezels**—For behind-the-panel mounting of "Wide-Vue" Meters. Net Each...**$2.25**

SPECIFICATIONS

Size	Model	Accuracy, Full Scale	Scale Lgth.	Mtg. Hole	4 Mtg. Studs on
1½″	1212, T 1214	±2% ±3%**	1.5″	1.5″ dia.	1.32″ centers #4-40
2½″	1227, T 1247 1257	±2% ±3%** ±2%	2.3″	2.17″ dia.	1.88″ centers #4-40
3½″	1327, T 1337 1347 1357	±2% ±2% ±3%** ±2%	3.14″	2.73″ dia.	2.24″ centers #4-40
4½″	1329, T 1339 1349 1359 1379	±2% ±2% ±3%** ±2% ±2%	3.93″	2.75″ dia.	4″ x 3.56″ centers #6-32

**At 25° C and 60 Hz sine wave.

DC PANEL METERS—MODELS 1212, 1227, 1227T, 1327, 1327T, 1329 AND 1329T

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT (1000 OHMS/VOLT EXCEPT AS NOTED)

MODEL 1212—1½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$20.85	$18.77	$17.72
0-8	—	—	—
0-10	20.85	18.77	17.72
0-15	20.85	18.77	17.72
0-25	20.85	18.77	17.72
0-30	20.85	18.77	17.72
0-50	20.85	18.77	17.72
0-100	20.85	18.77	17.72
0-150	20.85	18.77	17.72
0-200	—	—	—
0-250	—	—	—
0-300	—	—	—
0-300*	20.85	18.77	17.72
0-500*†	25.95	23.36	22.06
0-750*	—	—	—
0-1000*	—	—	—

MODEL 1227—2½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$22.35	$20.12	$19.00
0-8	—	—	—
0-10	22.35	20.12	19.00
0-15	22.35	20.12	19.00
0-25	22.35	20.12	19.00
0-30	22.35	20.12	19.00
0-50	22.35	20.12	19.00
0-100	22.35	20.12	19.00
0-150	22.35	20.12	19.00
0-200	22.35	20.12	19.00
0-250	22.35	20.12	19.00
0-300	22.35	20.12	19.00
0-300*	—	—	—
0-500*	23.10	20.79	19.64
0-750*†	28.05	25.25	23.84
0-1000*†	28.95	26.06	24.61

MODEL 1327—3½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$23.10	$20.79	$19.64
0-8	23.10	20.79	19.64
0-10	23.10	20.79	19.64
0-15	23.10	20.79	19.64
0-25	23.10	20.79	19.64
0-30	23.10	20.79	19.64
0-50	23.10	20.79	19.64
0-100	23.10	20.79	19.64
0-150	23.10	20.79	19.64
0-200	23.10	20.79	19.64
0-250	23.10	20.79	19.64
0-300	23.10	20.79	19.64
0-300*	—	—	—
0-500*	24.15	21.74	20.53
0-750*	24.15	21.74	20.53
0-1000*†	29.85	26.87	25.37

MODEL 1329—4½″

Range	Net Each, Lots of 1-9	10-24	25-49
0-5 Volts	$25.20	$22.68	$21.42
0-8	25.20	22.68	21.42
0-10	25.20	22.68	21.42
0-15	25.20	22.68	21.42
0-25	25.20	22.68	21.42
0-30	25.20	22.68	21.42
0-50	25.20	22.68	21.42
0-100	25.20	22.68	21.42
0-150	25.20	22.68	21.42
0-200	25.20	22.68	21.42
0-250	25.20	22.68	21.42
0-300	25.20	22.68	21.42
0-300*	—	—	—
0-500*	26.10	23.49	22.19
0-750*	26.10	23.49	22.19
0-1000*†	31.95	28.76	27.16

DC AMMETERS—SELF-SHIELDED METER MOVEMENT

Self-contained types are: 1½″ through 10 amps; 2½″, 3½″ and 4½″ through 50 amps. All others require external shunts.

MODEL 1212—1½″

Range	1-9	10-24	25-49
0-1 Amps	$20.85	$18.77	$17.72
0-1.5	—	—	—
0-2	20.85	18.77	17.72
0-3	20.85	18.77	17.72
0-5	20.85	18.77	17.72
0-10	20.85	18.77	17.72
0-15	20.85	18.77	17.72
0-25	20.85	18.77	17.72
0-30	—	—	—
0-50	20.85	18.77	17.72
0-100	—	—	—
0-150	—	—	—
0-200	—	—	—
0-300	—	—	—
0-500	—	—	—
15-0-15	—	—	—
30-0-30	—	—	—
50-0-50	—	—	—

MODEL 1227—2½″

Range	1-9	10-24	25-49
0-1 Amps	$21.30	$19.17	$18.11
0-1.5	21.30	19.17	18.11
0-2	21.30	19.17	18.11
0-3	21.30	19.17	18.11
0-5	21.30	19.17	18.11
0-10	21.30	19.17	18.11
0-15	21.30	19.17	18.11
0-25	21.30	19.17	18.11
0-30	21.30	19.17	18.11
0-50	21.30	19.17	18.11
0-100	21.30	19.17	18.11
0-150	21.30	19.17	18.11
0-200	21.30	19.17	18.11
0-300	21.30	19.17	18.11
0-500	—	—	—
15-0-15	—	—	—
30-0-30	—	—	—
50-0-50	—	—	—

MODEL 1327—3½″

Range	1-9	10-24	25-49
0-1 Amps	$22.35	$20.12	$19.00
0-1.5	22.35	20.12	19.00
0-2	22.35	20.12	19.00
0-3	22.35	20.12	19.00
0-5	22.35	20.12	19.00
0-10	22.35	20.12	19.00
0-15	22.35	20.12	19.00
0-25	22.35	20.12	19.00
0-30	22.35	20.12	19.00
0-50	22.35	20.12	19.00
0-100	22.35	20.12	19.00
0-150	22.35	20.12	19.00
0-200	22.35	20.12	19.00
0-300	22.35	20.12	19.00
0-500	22.35	20.12	19.00
15-0-15	23.55	21.20	20.02
30-0-30	23.55	21.20	20.02
50-0-50	23.55	21.20	20.02

MODEL 1329—4½″

Range	1-9	10-24	25-49
0-1 Amps	$24.15	$21.74	$20.53
0-1.5	24.15	21.74	20.53
0-2	24.15	21.74	20.53
0-3	24.15	21.74	20.53
0-5	24.15	21.74	20.53
0-10	24.15	21.74	20.53
0-15	24.15	21.74	20.53
0-25	24.15	21.74	20.53
0-30	24.15	21.74	20.53
0-50	24.15	21.74	20.53
0-100	24.15	21.74	20.53
0-150	24.15	21.74	20.53
0-200	24.15	21.74	20.53
0-300	24.15	21.74	20.53
0-500	24.15	21.74	20.53
15-0-15	—	—	—
30-0-30	—	—	—
50-0-50	—	—	—

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

Self contained. Voltage drop, 150 mV or less.

MODEL 1212—1½″

Range	1-9	10-24	25-49
0-1 mA	$19.95	$17.96	$16.96
0-3	—	—	—
0-5	19.95	17.96	16.96
0-10	19.95	17.96	16.96
0-15	19.95	17.96	16.96
0-20	—	—	—
0-25	20.85	18.77	17.72
0-50	20.85	18.77	17.72
0-100	20.85	18.77	17.72
0-150	20.85	18.77	17.72
0-200	20.85	18.77	17.72
0-250	20.85	18.77	17.72
0-300	20.85	18.77	17.72
0-500	20.85	18.77	17.72

MODEL 1227—2½″

Range	1-9	10-24	25-49
0-1 mA	$21.00	$18.90	$17.85
0-3	21.00	18.90	17.85
0-5	21.00	18.90	17.85
0-10	21.00	18.90	17.85
0-15	21.00	18.90	17.85
0-20	21.00	18.90	17.85
0-25	21.30	19.17	18.11
0-50	21.30	19.17	18.11
0-100	21.30	19.17	18.11
0-150	21.30	19.17	18.11
0-200	21.30	19.17	18.11
0-250	21.30	19.17	18.11
0-300	21.30	19.17	18.11
0-500	21.30	19.17	18.11
0-750	—	—	—
0-1000	21.30	19.17	18.11

MODEL 1327—3½″

Range	1-9	10-24	25-49
0-1 mA	$21.60	$19.44	$18.36
0-3	21.60	19.44	18.36
0-5	21.60	19.44	18.36
0-10	21.60	19.44	18.36
0-15	21.60	19.44	18.36
0-20	21.60	19.44	18.36
0-25	22.35	20.12	19.00
0-50	22.35	20.12	19.00
0-100	22.35	20.12	19.00
0-150	22.35	20.12	19.00
0-200	22.35	20.12	19.00
0-250	22.35	20.12	19.00
0-300	22.35	20.12	19.00
0-500	22.35	20.12	19.00
0-750	22.35	20.12	19.00
0-1000	22.35	20.12	19.00

MODEL 1329—4½″

Range	1-9	10-24	25-49
0-1 mA	$23.10	$20.79	$19.64
0-3	23.10	20.79	19.64
0-5	23.10	20.79	19.64
0-10	23.10	20.79	19.64
0-15	23.10	20.79	19.64
0-20	23.10	20.79	19.64
0-25	24.15	21.74	20.53
0-50	24.15	21.74	20.53
0-100	24.15	21.74	20.53
0-150	24.15	21.74	20.53
0-200	24.15	21.74	20.53
0-250	24.15	21.74	20.53
0-300	24.15	21.74	20.53
0-500	24.15	21.74	20.53
0-750	24.15	21.74	20.53
0-1000	24.15	21.74	20.53

DC MICROAMMETERS—SELF-SHIELDED TAUT BAND METER MOVEMENT

MODEL 1212T—1½″

Range	1-9	10-24	25-49
0-5 μA	—	—	—
0-10	—	—	—
0-15	$39.15	$35.24	$33.28
0-25	36.45	32.81	30.98
0-50	28.65	25.79	24.35
0-100	25.65	23.09	21.80
0-200	23.70	21.33	20.15

MODEL 1227T—2½″

Range	1-9	10-24	25-49
0-5 μA	—	—	—
0-10	$43.05	$38.75	$36.59
0-15	39.15	35.24	33.28
0-25	37.20	33.48	31.62
0-50	29.25	26.33	24.87
0-100	26.55	23.90	22.57
0-200	24.90	22.41	21.17

MODEL 1327T—3½″

Range	1-9	10-24	25-49
0-5 μA‡	$51.15	$46.04	$43.48
0-10	45.00	40.50	38.25
0-15	40.20	36.18	34.17
0-25	39.00	35.10	33.15
0-50	29.85	26.87	25.37
0-100	27.45	24.71	23.33
0-200	25.95	23.36	22.06

MODEL 1329T—4½″

Range	1-9	10-24	25-49
0-5 μA‡	$54.30	$48.87	$46.16
0-10	48.60	43.74	41.31
0-15	43.80	39.42	37.23
0-25	42.30	38.07	35.96
0-50	32.10	28.89	27.29
0-100	30.30	27.27	25.76
0-200	28.65	25.79	24.35

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 1212—1½″

Range	1-9	10-24	25-49
0-50 μA	$26.10	$23.49	$22.19
0-100	23.25	20.93	19.76
0-200	21.25	19.13	18.07
0-500	20.25	18.23	17.21
25-0-25	26.25	23.63	22.31
50-0-50	23.25	20.93	19.76
100-0-100	21.30	19.17	18.11
500-0-500	20.25	18.23	17.22

MODEL 1227—1½″

Range	1-9	10-24	25-49
0-50 μA	$27.00	$24.30	$22.95
0-100	24.15	21.74	20.53
0-200	21.25	19.13	18.07
0-500	21.00	18.90	17.85
25-0-25	—	—	—
50-0-50	24.60	22.14	20.91
100-0-100	22.35	20.12	19.00
500-0-500	21.15	19.04	17.98

MODEL 1327—3½″

Range	1-9	10-24	25-49
0-50 μA	$27.45	$24.71	$23.33
0-100	25.20	22.68	21.42
0-200	23.10	20.79	19.64
0-500	22.80	20.52	19.38
25-0-25	27.75	24.98	23.59
50-0-50	25.20	22.68	21.42
100-0-100	23.25	20.93	19.76
500-0-500	21.90	19.71	18.62

MODEL 1329—4½″

Range	1-9	10-24	25-49
0-50 μA	$29.70	$26.73	$25.25
0-100	28.05	25.25	23.84
0-200	25.20	22.68	21.42
0-500	24.60	22.14	20.91
25-0-25	29.85	26.87	25.37
50-0-50	28.20	25.38	23.97
100-0-100	25.65	23.09	21.80
500-0-500	23.25	20.93	19.76

*2000 ohms/volt. †External multiplier furnished; all others self-contained. ‡High flux annular.

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY. CONTINUED, NEXT PAGE

Simpson Wide-Vue Panel Meters

INSTRUMENTS THAT STAY ACCURATE

DC MILLIVOLTMETERS—SELF-SHIELDED METER MOVEMENT

MODEL 1212—1½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$20.85	$18.77	$17.72
50–0–50	—	—	—

MODEL 1227—2½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$21.30	$19.17	$18.11
50–0–50	—	—	—

MODEL 1327—3½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$22.35	$20.12	$19.00
50–0–50	22.35	20.12	19.00

MODEL 1329—4½″

Range mV	Net Each, Lots of 1-9	10-24	25-49
0–50	$24.15	$21.74	$20.53
50–0–50	24.15	21.74	20.53

DC GALVANOMETERS—SELF-SHIELDED METER MOVEMENT

		Model 1212—1½″			Model 1227—2½″		
		Net Each, Lots of			Net Each, Lots of		
Range	Sensitivity µA	1-9	10-24	25-49	1-9	10-24	25-49
50–0–50	500–0–500	$20.25	$18.23	$17.21	$21.00	$18.90	$17.85
50–0–50	75–0–75	21.30	19.17	18.11	22.80	20.52	19.38

		Model 1327—3½″			Model 1329—4½″		
		Net Each, Lots of			Net Each, Lots of		
Range	Sensitivity µA	1-9	10-24	25-49	1-9	10-24	25-49
50–0–50	500–0–500	$21.00	$18.90	$17.85	$23.25	$20.93	$19.76
50–0–50	75–0–75	24.60	22.14	20.91	27.00	24.30	22.95

AC PANEL METERS—MODELS 1257, 1357, AND 1359

AC VOLTMETERS—IRON VANE TYPE MOVEMENT (SELF-CONTAINED EXCEPT 0-500 V)

MODEL 1257—2½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	—	—	—
0–10 or 0–15	$20.25	$18.23	$17.21
0–25 or 0–50	20.25	18.23	17.21
0–100	20.85	18.77	17.72
0–150	21.15	19.04	17.98
0–250 or 0–300	21.15	19.04	17.98
0–500	27.00	24.30	22.95

MODEL 1357—3½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$21.15	$19.04	$17.98
0–10 or 0–15	21.15	19.04	17.98
0–25 or 0–50	21.15	19.04	17.98
0–100	21.90	19.71	18.62
0–150	22.80	20.52	19.38
0–250 or 0–300	22.80	20.52	19.38
0–500	28.80	25.92	24.48

MODEL 1359—4½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$23.70	$21.33	$20.15
0–10 or 0–15	23.70	21.33	20.15
0–25 or 0–50	23.70	21.33	20.15
0–100	23.70	21.33	20.15
0–150	24.15	21.74	20.53
0–250 or 0–300	24.15	21.74	20.53
0–500	30.75	27.68	26.14

AC AMMETERS—IRON VANE TYPE MOVEMENT

The following meters are self contained: 2½″ through 50 amps, 3½″ and 4½″ through 75 amps. Higher range AC ammeters are 5-amp meters to be used with external current transformer.

MODEL 1257—2½″

Range Amps	Approx. Resis., Ohms	Net Each. Lots of 1-9	10-24	25-49
0–1	.213	$19.20	$17.28	$16.32
0–1.5	.105	19.20	17.28	16.32
0–2	.065	—	—	—
0–3	.028	19.20	17.28	16.32
0–5	.008	19.20	17.28	16.32
0–10	.004	19.20	17.28	16.32
0–15	.0025	19.20	17.28	16.32
0–25	.002	19.20	17.28	16.32
0–30	.0015	19.20	17.28	16.32
0–50	.001	—	—	—
0–75	.008	19.20	17.28	16.32
0–100	.008	19.20	17.28	16.32
0–150	.008	19.20	17.28	16.32
0–200	.008	19.20	17.28	16.32
0–300	.008	19.20	17.28	16.35

MODEL 1357—3½″

Range Amps	Approx. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–1	.213	$20.25	$18.23	$17.21
0–1.5	.105	20.25	18.23	17.21
0–2	.065	20.25	18.23	17.21
0–3	.028	20.25	18.23	17.21
0–5	.008	20.25	18.23	17.21
0–10	.004	20.25	18.23	17.21
0–15	.0025	20.25	18.23	17.21
0–25	.002	21.00	18.90	17.85
0–30	.0015	21.00	18.90	17.85
0–50	.001	21.00	18.90	17.85
0–75	.008	22.80	20.52	19.38
0–100	.008	20.25	18.23	17.21
0–150	.008	20.25	18.23	17.21
0–200	.008	20.25	18.23	17.21
0–300	.008	20.25	18.23	17.21

MODEL 1359—4½″

Range Amps	Approx. Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49
0–1	.213	$21.45	$19.31	$18.23
0–1.5	.105	21.45	19.31	18.23
0–2	.065	21.45	19.31	18.23
0–3	.028	21.45	19.31	18.23
0–5	.008	21.45	19.31	18.23
0–10	.004	21.45	19.31	18.23
0–15	.0025	21.45	19.31	18.23
0–25	.002	22.35	20.12	19.00
0–30	.0015	22.35	20.12	19.00
0–50	.001	22.35	20.12	19.00
0–75	.008	24.15	21.74	20.53
0–100	.008	21.45	19.31	18.23
0–150	.008	21.45	19.31	18.23
0–200	.008	21.45	19.31	18.23
0–300	.008	21.45	19.31	18.23

AC MILLIAMMETERS—IRON VANE TYPE MOVEMENT—Ranges: 0–10, 0–50, 0–100, 0–250, 0–500 mA; specify.

MODEL 1257—2½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$19.20	$17.28	$16.32

MODEL 1357—3½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$20.25	$18.23	$17.21

MODEL 1359—4½″

Range, mA (Specify)	Net Each, Lots of 1-9	10-24	25-49
Any range	$21.45	$19.31	$18.23

NEW!—DUAL-RANGE AC PANEL METERS, MODELS 1357 AND 1359, 0-150 AC VOLTS/0-5 AC AMPERES

Single instrument measures both volts and amps. For use in many common applications using an AC voltmeter and ammeter in pairs. Lets you save on panel space and purchasing cost. Can also measure extended AC current ranges through an accessory transformer. Available in 3½″ and 4½″ sizes, in Century Models and Wide-Vue.

Wide-Vue Dual-Range Meter Model No.	Size	Net Each, Lots of 1-9	10-24	25-49
1357	3½″	$28.95	$26.06	$24.61
1359	4½″	30.90	27.81	26.27

RECTIFIER TYPE AC VOLTMETERS—SELF-SHIELDED METER MOVEMENT—2,000 OHMS/VOLT RESISTANCE

MODEL 1214—1½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$28.65	$25.79	$24.35
0–10	28.65	25.79	24.35
0–15	—	—	—
0–50	—	—	—
0–150	28.65	25.79	24.35
0–300	28.65	25.79	24.35

MODEL 1247—2½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$26.55	$23.90	$22.57
0–10	26.55	23.90	22.57
0–15	—	—	—
0–50	—	—	—
0–150	26.55	23.90	22.57
0–300	26.55	23.90	22.57

MODEL 1347—3½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$30.30	$27.27	$25.76
0–10	30.30	27.27	25.76
0–15	30.30	27.27	25.76
0–50	30.30	27.27	25.76
0–150	30.30	27.27	25.76
0–300	30.30	27.27	25.76

MODEL 1349—4½″

Range Volts	Net Each, Lots of 1-9	10-24	25-49
0–5	$33.60	$30.24	$28.56
0–10	33.60	30.24	28.56
0–15	33.60	30.24	28.56
0–50	33.60	30.24	28.56
0–150	33.60	30.24	28.56
0–300	33.60	30.24	28.56

VOLUME LEVEL INDICATORS—SELF-SHIELDED METER MOVEMENT

	Model 1214—1½″			Model 1247—2½″		
	Net Each, Lots of			Net Each, Lots of		
Range	1-9	10-24	25-49	1-9	10-24	25-49
General Purpose dB*	—	—	—	$29.70	$26.73	$25.25
A Scale VU†	$31.95	$28.76	$27.16	35.25	31.73	29.96
B Scale VU†	—	—	—	—	—	—

	Model 1347—3½″			Model 1349—4½″		
	Net Each, Lots of			Net Each, Lots of		
Range	1-9	10-24	25-49	1-9	10-24	25-49
General Purpose dB*	$31.50	$28.35	$27.68	$32.55	$29.30	$27.67
A Scale VU†	36.00	32.40	30.60	39.15	35.24	33.28
B Scale VU†	36.00	32.40	30.60	39.15	35.24	33.28

*Reference level, 1 mW 600-ohm line. †Reference level, 1 mW 600-ohm line; meet all electrical and ballistic specifications by Bell Labs and ASA as required by broadcasting, communication and sound engineers. Impedance 3900 ohms at "0" VU deflection.

RF AMMETERS—SELF-SHIELDED METER MOVEMENT

		Model 1337—3½″			Model 1339—4½″		
		Net Each, Lots of			Net Each, Lots of		
Range	Approx. Resis., Ohms	1-9	10-24	25-49	1-9	10-24	25-49
0–1	.343	$25.65	$23.09	$21.80	$29.25	$26.33	$24.86
0–1.5	.200	25.65	23.09	21.80	29.25	26.33	24.86
0–2	.120	25.65	23.09	21.80	29.25	26.33	24.86
0–2.5	.10	25.65	23.09	21.80	29.25	26.33	24.86
0–3	.08	25.65	23.09	21.80	29.25	26.33	24.86
0–5	.045	25.65	23.09	21.80	29.25	26.33	24.86
0–8	.031	25.65	23.09	21.80	29.25	26.33	24.86
0–10	.023	25.65	23.09	21.80	29.25	26.33	24.86

RF MILLIAMMETERS

Range	Approx. Resis., Ohms	Model 1337 1-9	10-24	25-49	Model 1339 1-9	10-24	25-49
0–500	.63	$30.15	$27.14	$25.63	$34.05	$30.65	$28.94

WATTMETERS—MODEL 1379—4½″

DYNAMOMETER TYPE SINGLE PHASE

Range Watts	Range Volts	Max. Amps	Net Each, Lots of 1-9	10-24	25-49
0–75	150	1.0	$55.80	$50.22	$47.43
0–150	150	2.0	55.80	50.22	47.43
0–300	150	4.0	55.80	50.22	47.43
0–750	150	10.0	55.80	50.22	47.43
0–600	300	4.0	59.55	53.60	50.62
0–1500	300	10.0	59.55	53.60	50.62
0–3000	300	20.0	59.55	53.60	50.62
COMPENSATED TYPE					
0–10	300	.175	$74.55	$67.10	$63.37
0–20	300	.400	74.55	67.10	63.37
0–30	300	.650	74.55	67.10	63.37

RANGES LISTED WITHOUT PRICES (—) ARE AVAILABLE ON SPECIAL ORDER ONLY.

Simpson Panel Meters

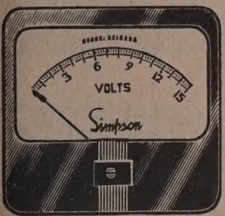
INSTRUMENTS THAT STAY ACCURATE

MILLIAMPERES
Simpson

A

VOLTS
Simpson

B



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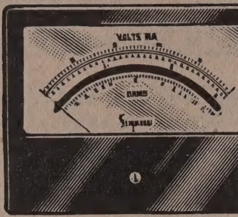


D

DC meters: All have self-shielded movement. Calibration not affected by strong magnetic fields or magnetic mounting.

AC meters: All have iron vane type movement. AC Milliammeters and Ammeters, except 0–10 amps, are calibrated for use on 25–800 Hz; 0–10 AC Ammeters and all AC Voltmeters calibrated for use on 25–125 Hz. Wattmeters have dynamometer movement for magnetic or non-magnetic panels; calibrated for 25–125 Hz. AC Voltmeters available for other frequencies; specify and request prices. **Note**—Special dials are available for substitution; write for availability and prices before ordering.

RECTANGULAR AND ROUND PANEL METERS

ACCURACY AND SCALE LENGTH

DC meters for AC iron vane type meters, ±2% full scale except mirrored 1150-1, ±1% full scale; dB and rectifier types, ±3% full scale at 25° C, 60 Hz sine wave; VU meters per ASA specs.

Size	Models	Scale	Size	Models	Scale
2½"	125, 125T, 127, 127T, 135, 137, 145, 147	1.8"	3½"	55, 57, 75, 77	2.3"
			4½"	29, 29T, 39, 49, 142	3.8"
2½"	155, 157, 175, 177	1.6"	4½"	59, 79	3.5"
3½"	25, 25T, 27, 27T, 35, 37, 45, 47	2.5"	6"	1150, 1150-1	4.6"

CALIBRATION AND DIMENSIONS

Model	Fig.	Size, Inches
127, 127T, 137, 147, 157	A	2.37 sq.; body, 2.17 dia. x 1.45 d.
177	A	2.37 sq.; body, 2.17 dia. x 2.02 d.
125, 125T, 135, 145, 155	B	Flange, 2.69 dia.; body, 2.17 dia. x 1.39 d.
175	B	Flange, 2.69 dia.; body, 2.17 dia. x 1.98 d.
27, 27T, 37, 47	A	3 w. x 3.12 h.; body, 2.75 dia. x 1.36 d.
57	A	3 w. x 3.12 h.; body, 2.75 dia. x 1.45 d.
77	A	3 w. x 3.12 h.; body, 2.75 dia. x 2.11 d.
25, 25T, 35, 45	B	Flange, 3.5 dia.; body, 2.75 dia. x 1.31 d.
55	B	Flange, 3.5 dia.; body, 2.75 dia. x 1.31 d.
75	B	Flange, 3.5 dia.; body, 2.75 dia. x 2.06 d.
29, 29T, 39, 49	C	4.66 w. x 4.2 h.; body, 2.75 dia. x 1 d.
59	C	4.66 w. x 4.2 h.; body, 2.75 dia. x 1.09 d.
79	C	4.66 w. x 4.2 h.; body, 2.75 dia. x 1.68 d.
142	C	4.25 w. x 3.94 h.; body, 3.25 dia. x 1 d.
1150	D	5.75 w. x 4.63 h.; body, 3 dia. x 1 d.

DC VOLTMETERS—SELF-SHIELDED METER MOVEMENT, 1,000 OHMS/VOLT

MODELS 125, 127—2½"

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–1.5, –3V	$22.35	$20.12	$19.00
0–5, –8	22.35	20.12	19.00
0–10, –15	22.35	20.12	19.00
0–25, –30	22.35	20.12	19.00
0–50, –100	22.35	20.12	19.00
0–150	22.35	20.12	19.00
0–200	22.35	20.12	19.00
0–250	22.35	20.12	19.00
0–300†	22.35	20.12	19.00
0–500*†	23.10	20.79	19.64
0–750*	—	—	—
0–1000*	—	—	—
0–1500*	—	—	—
0–2000*†	28.80	25.92	24.48
0–2500*	—	—	—
0–3000*	—	—	—
0–4000*	—	—	—
0–5000*	—	—	—

MODELS 25, 27—3½"

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–1.5†, –3V	$23.10	$20.79	$19.64
0–5, –8†	23.10	20.79	19.64
0–10, –15	23.10	20.79	19.64
0–25, –30	23.10	20.79	19.64
0–50, –100	23.10	20.79	19.64
0–150	23.10	20.79	19.64
0–200	23.10	20.79	19.64
0–250	23.10	20.79	19.64
0–300	23.10	20.79	19.64
0–500*	24.15	21.74	20.53
0–750*	24.15	21.74	20.53
0–1000*	29.85	26.87	25.37
0–1500*	29.85	26.87	25.37
0–2000*	30.90	27.81	26.27
0–2500*†	31.35	28.22	26.65
0–3000*	31.80	28.62	27.03
0–4000*	—	—	—
0–5000*	32.55	29.30	27.67

MODEL 29—4½"

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–1.5, –3V	$25.20	$22.68	$21.42
0–5, –8	25.20	22.68	21.42
0–10, –15	25.20	22.68	21.42
0–25,–30	25.20	22.68	21.42
0–50,–100	25.20	22.68	21.42
0–150	25.20	22.68	21.42
0–200	25.20	22.68	21.42
0–250	25.20	22.68	21.42
0–300	25.20	22.68	21.42
0–500*	26.10	23.49	22.19
0–750*	26.10	23.49	22.19
0–1000*	31.95	28.76	27.16
0–1500*	32.25	29.03	27.41
0–2000*	32.85	29.57	27.92
0–2500*	33.45	30.11	28.43
0–3000*	33.75	30.38	28.69
0–4000*	34.05	30.65	28.94
0–5000*	35.70	32.13	30.35

MODEL 1150—6" (2%)

All ranges self-shielded movement. Other ranges available on special order.

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–10 V	$30.90	$27.81	$26.27
0–25	30.90	27.81	26.27
0–50	30.90	27.81	26.27
0–100	30.90	27.81	26.27
0–150	30.90	27.81	26.27
0–300	30.90	27.81	26.27
0–500*	31.95	28.76	27.16

Note: External multipliers (Model 183) are furnished on 2½" DC meters 750 V or higher; and on 3½" and 4½" DC meters 1,000 V or higher. All others are self-contained.

DC MILLIAMMETERS—SELF-SHIELDED METER MOVEMENT

MODELS 125, 127—2½"

0–1 mA	$21.00	$18.90	$17.85
0–1.5	21.00	18.90	17.85
0–3†, –5	21.00	18.90	17.85
0–10	21.00	18.90	17.85
0–15	21.00	18.90	17.85
0–20	—	—	—
0–25	21.30	19.17	18.11
0–50	21.30	19.17	18.11
0–75‡	21.30	19.17	18.11
0–100	21.30	19.17	18.11
0–150	21.30	19.17	18.11
0–200	21.30	19.17	18.11
0–250	21.30	19.17	18.11
0–300	21.30	19.17	18.11
0–500	21.30	19.17	18.11
0–750	—	—	—
0–1000†	21.30	19,17	18.11

MODELS 25, 27—3½"

0–1 mA	$21.60	$19.44	$18.36
0–1.5	21.60	19.44	18.36
0–3, –5	21.60	19.44	18.36
0–10	21.60	19.44	18.36
0–15	21.60	19.44	18.36
0–20	21.60	19.44	18.36
0–25	22.35	20.12	19.00
0–50	22.35	20.12	19.00
0–75†	22.35	20.12	19.00
0–100	22.35	20.12	19.00
0–150	22.35	20.12	19.00
0–200	22.35	20.12	19.00
0–250	22.35	20.12	19.00
0–300	22.35	20.12	19.00
0–500	22.35	20.12	19.00
0–750†	22.35	20.12	19.00
0–1000	22.35	20.12	19.00

MODEL 29—4½"

0–1 mA	$23.10	$20.79	$19.64
0–1.5	23.10	20.79	19.64
0–3, –5	23.10	20.79	19.64
0–10	23.10	20.79	19.64
0–15	23.10	20.79	19.64
0–20	23.10	20.79	19.64
0–25	24.15	21.74	20.53
0–50	24.15	21.74	20.53
0–75	24.15	21.74	20.53
0–100	24.15	21.74	20.53
0–150	24.15	21.74	20.53
0–200	24.15	21.74	20.53
0–250	24.15	21.74	20.53
0–300	24.15	21.74	20.53
0–500	24.15	21.74	20.53
0–750	24.15	21.74	20.53
0–1000	24.15	21.74	20.53

MODEL 1150—6" (2%)

All meters use self-shielded movement. Other ranges available on special order.

0–1 mA	$30.90	$27.81	$26.27
0–10	30.90	27.81	26.27
0–50	30.90	27.81	26.27
0–100	30.90	27.81	26.27
0–500	30.90	27.81	26.27

MIRRORED-SCALE MODEL 1150-1—6" (1%)

0–1 mA	$39.15	$35.24	$33.28
0–100	39.15	35.24	33.28
0–500	39.15	35.24	33.28

DC MICROAMMETERS—SELF-SHIELDED METER MOVEMENT MODELS 25, 27, 29, 125, 127, 1150, 1150-1

MODELS 125, 127—2½"

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–50 μA	$27.00	$24.30	$22.95
0–100	24.15	21.74	20.53
0–200	21.90	19.71	18.62
0–500	21.60	19.44	18.36
25–0–25	28.05	25.25	23.84
50–0–50	24.60	22.14	20.91
100–0–100	22.35	20.12	19.00
500–0–500†	21.15	19.04	17.98

MODELS 25, 27—3½"

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–50 μA	$27.30	$24.57	$23.21
0–100	25.20	22.68	21.42
0–200	23.10	20.79	19.64
0–500	22.80	20.52	19.38
25–0–25	27.75	24.98	23.59
50–0–50	25.20	22.68	21.42
100–0–100	23.25	20.93	19.76
500–0–500	21.00	18.90	17.85

MODEL 29—4½"

Range	Net Each, Lots of		
	1-9	10-24	25-49
0–50 μA	$29.70	$26.73	$25.25
0–100	28.05	25.25	23.84
0–200	25.20	22.68	21.42
0–500	24.60	22.14	20.91
25–0–25	29.85	26.87	25.37
50–0–50	28.20	25.38	23.97
100–0–100	25.65	23.09	21.80
500–0–500	23.25	20.93	19.76

MODEL 1150—6" (2%)

0–15 μA	$48.75	$43.88	$41.44
0–25	43.65	39.29	37.10
0–50	39.75	35.78	33.79
0–100	38.25	34.43	32.51
0–200	33.45	30.11	28.43
0–500	32.55	29.30	27.67

MIRRORED-SCALE MODEL 1150-1—6" (1%)

0–50	$48.00	$43.20	$40.80
0–100	46.05	41.45	39.14
0–200	41.40	37.26	35.19
0–500	40.35	36.32	34.30

*2000 ohms/volt. †Models 27 or 127 only. ‡Models 25 or 125 only.

DC MICROAMMETERS—SELF-SHIELDED TAUT BAND METER MOVEMENT MODELS 25T, 27T, 29T, 125T, 127T AND 728T

MODELS 125T, 127T—2½"

0–5 μA	—	—	—
0–10	$43.05	$38.75	$36.59
0–15	39.15	35.24	33.28
0–25	37.20	33.48	31.62
0–50	29.25	26.33	24.86
0–100	26.55	23.90	22.57

MODELS 25T, 27T—3½"

0–5 μA	$51.15	$46.04	$43.48
0–10	45.00	40.50	38.25
0–15	40.20	36.18	34.17
0–25	39.00	35.10	33.15
0–50	29.85	26.87	25.37
0–100	27.45	24.71	23.33

MODEL 29T—4½"

0–5 μA	$54.45	$49.01	$46.28
0–10	48.60	43.74	41.31
0–15	43.80	39.42	37.23
0–25	42.30	38.07	35.96
0–50	32.10	28.89	27.29
0–100	30.30	27.27	25.76

MODEL 728T—8" WIDE-VUE

See previous pages for "Wide-Vue" styling. Accuracy, ±2% F.S. Scale, 6.9" lg. Bezel, 8" w. x 6.5" h. Body, 3" dia. x 1.23" d.

0-25 μA	$48.75	$43.88	$41.44
0-50 μA	42.90	38.61	36.47
0-100 μA	41.55	37.40	35.32
0-1 mA	39.15	35.24	33.28

RANGES LISTED WITHOUT PRICES (—) ON SPECIAL ORDER ONLY. CONTINUED, NEXT PAGE

Simpson Panel Meters

INSTRUMENTS THAT STAY ACCURATE

RECTANGULAR AND ROUND PANEL METERS (CONT'D)

DC AMMETERS—MODELS 25, 27, 29, 125, 127, 1150

Ranges Available: 0–1, 0–1.5, 0–2, 0–3, 0–5, 0–10, 0–15, 0–25, 0–30, 0–50, 0–75, 0–100, 0–150, 0–200, 0–250, 0–300, 0–500, 0–750, 0–1000, 15–0–15, 30–0–30 and 50–0–50. Model 27 not available in 0–250, 15–0–15 ranges; Model 125 not available in 0–2, 0–250, 0–750, 0–1000 or 15–0–15 ranges; Model 127 not available in 0–250, 0–300, 0–500, 0–750, 0–1000 and 15–0–15 ranges; Model 1150 not available in 0–1.5, 0–2 or 0–3 ranges. Ranges 0–75 through 0–1000 require external shunts; all others are self-contained.

Range Amps	Models 125, 127—2½″ Net Each, Lots of			Models 25, 27—3½″ Net Each, Lots of		
	1-9	10-24	25-49	1-9	10-24	25-49
0–1 to 0–50	$21.30	$19.17	$18.11	$22.35	$20.12	$19.00
0–75 to 0–1000	21.30	19.17	18.11	22.35	20.12	19.00
15–0–15, 30 0–30 or 50–0–50	21.60	19.44	18.36	23.55	21.20	20.02

Range Amps	Model 29—4½″ Net Each, Lots of			Model 1150—6″ 2% Net Each, Lots of		
	1-9	10-24	25-49	1-9	10-24	25-49
0–1 to 0–50	$24.15	$21.74	$20.53	$32.25	$29.03	$27.42
0–75 to 0–1000	24.15	21.74	20.53	—	—	—
15–0–15, 30–0–30 or 50–0–50	24.75	22.28	21.04	—	—	—

DC MILLIVOLTMETERS—MODELS 25, 27, 29, 125, 127, 1150

MODELS 125, 127—2½″

Range mV	*	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$21.30	$19.17	$18.11

†Model 25 not available.

MODELS 25, 27—3½″

Range mV	*	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$22.35	$20.12	$19.00
0–100†	20	22.35	20.12	19.00

MODEL 29—4½″

Range mV	*	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$24.15	$21.74	$20.53
0–100	20	24.15	21.74	20.53

MODEL 1150—6″ (2%)

Range mV	*	Net Each, Lots of 1-9	10-24	25-49
0–50	10	$32.25	$29.03	$27.41

*Resistance, ohms.

AC VOLTMETERS—MODELS 55, 57, 59, 155, 157

MODELS 155, 157—2½″

Range Volts	Imped., Ohms‡	Net Each, Lots of 1-9	10-24	25-49
0–1.5	3	—	—	—
0–3	12	—	—	—
0–5§	33	$20.25	$18.23	$17.21
0–10	133	20.25	18.23	17.21
0–15	300	20.25	18.23	17.21
0–25	833	20.25	18.23	17.21
0–50	3,333	20.25	18.23	17.21
0–100§	16,666	20.85	18.77	17.22
0–150	25,000	21.15	19.04	17.98
0–250	41,166	21.15	19.04	17.98
0–300	50,000	21.15	19.04	17.98
0–500*	83,333	27.00	24.30	22.95
0–750*	125,000	—	—	—
0–1000*	166,666	—	—	—

MODELS 55, 57—3½″

Range Volts	Imped., Ohms‡	Net Each, Lots of 1-9	10-24	25-49
0–1.5	3	—	—	—
0–3§	12	$21.15	$19.04	$17.98
0–5	33	21.15	19.04	17.98
0–10	133	21.15	19.04	17.98
0–15	300	21.15	19.04	17.98
0–25	833	21.15	19.04	17.98
0–50	3,333	21.15	19.04	17.98
0–100	16,666	21.90	19.71	18.62
0–150	25,000	22.80	20.52	19.38
0–250	41,166	22.80	20.52	19.38
0–300	50,000	22.80	20.52	19.38
0–500*	83,333	28.80	25.92	24.48
0–750*	125,000	28.80	25.92	24.48
0–1000*	166,666	33.45	30.11	28.43

MODEL 59—4½″

Range Volts	Imped., Ohms‡	Net Each, Lots of 1-9	10-24	25-49
0–1.5	3	$23.70	$21.33	$20.15
0–3	12	23.70	21.33	20.15
0–5	33	23.70	21.33	20.15
0–10	133	23.70	21.33	20.15
0–15	300	23.70	21.33	20.15
0–25	833	23.70	21.33	20.15
0–50	3,333	23.70	21.33	20.15
0–100	16,666	23.70	21.33	20.15
0–150	25,000	24.15	21.74	20.53
0–250	41,166	24.15	21.74	20.53
0–300	50,000	24.15	21.74	20.53
0–500*	83,333	30.75	27.68	26.14
0–750*	125,000	33.45	30.11	28.43
0–1000*	166,666	34.50	31.05	29.33

*Model 183 external multiplier supplied; all others, self-contained. ‡Approx., at 60 Hz. §Model 55 or 155 not available.

AC AMMETERS—MODELS 55, 57, 59, 155, 157

MODELS 155, 157—2½″

Range Amps	Imped., Ohms‡	Net Each, Lots of 1-9	10-24	25-49
0–1*	.213	$19.20	$17.28	$16.32
0–1.5*	.105	—	—	—
0–2*	.065	19.20	17.28	16.32
0–3*	.028	19.20	17.28	16.32
0–5*	.008	19.20	17.28	16.32
0–10*	.004	19.20	17.28	16.32
0–15*	.0025	19.20	17.28	16.32
0–25*	.002	19.95	17.96	16.95
0–30*	.0015	19.95	17.96	16.95
0–50*	.001	19.95	17.96	16.95
0–75*	.0005	—	—	—
0–75	.008	19.20	17.28	16.32
0–100	.008	19.20	17.28	16.32
0–150	.008	19.20	17.28	16.32
0–200	.008	—	—	—
0–250	.008	19.20	17.28	16.32
0–300†	.008	19.20	17.28	16.32
0–500	.008	19.20	17.28	16.32

MODELS 55, 57—3½″

Range Amps	Imped., Ohms‡	Net Each, Lots of 1-9	10-24	25-49
0–1*	.213	$20.25	$18.23	$17.21
0–1.5*	.105	20.25	18.23	17.21
0–2*	.065	20.25	18.23	17.21
0–3*	.028	20.25	18.23	17.21
0–5*	.008	20.25	18.23	17.21
0–10*	.004	20.25	18.23	17.21
0–15*	.0025	20.25	18.23	17.21
0–25*	.002	21.00	18.90	17.85
0–30*	.0015	21.00	18.90	17.85
0–50*	.001	21.00	18.90	17.85
0–75*	.0005	22.80	20.52	19.38
0–75	.008	—	—	—
0–100	.008	20.25	18.23	17.21
0–150	.008	20.25	18.23	17.21
0–200	.008	20.25	18.23	17.21
0–250	.008	20.25	18.23	17.21
0–300	.008	20.25	18.23	17.21
0–500	.008	20.25	18.23	17.21

MODEL 59—4½″

Range Amps	Imped., Ohms‡	Net Each, Lots of 1-9	10-24	25-49
0–1*	.213	$21.45	$19.31	$18.23
0–1.5*	.105	21.45	19.31	18.23
0–2*	.065	21.45	19.31	18.23
0–3*	.028	21.45	19.31	18.23
0–5*	.008	21.45	19.31	18.23
0–10*	.004	21.45	19.31	18.23
0–15*	.0025	21.45	19.31	18.23
0–25*	.002	22.35	20.12	19.00
0–30*	.0015	22.35	20.12	19.00
0–50*	.001	22.35	20.12	19.00
0–75*	.0005	24.15	21.74	20.53
0–75	.008	—	—	—
0–100	.008	21.45	19.31	18.23
0–150	.008	21.45	19.31	18.23
0–200	.008	21.45	19.31	18.23
0–250	.008	21.45	19.31	18.23
0–300	.008	21.45	19.31	18.23
0–500	.008	21.45	19.31	18.23

*Self-contained Models 155, 157, 55 and 59. Higher range AC meters (5 amp) require external current transformers, ordered separately. All ranges of Model 57 and 0–75 range of Model 157 are self-contained. †Model 155 available on special order.‡Approx., at 60 Hz.

AC MILLIAMMETERS—MODELS 55, 57, 59, 155, 157

Ranges Available: 0–10 (Model 55 not avail.), 0–15 (Models 59, 155, 157 not avail.), 0–25 (Models 55, 155, 157 not avail.), 0–50, 0–100, 0–250 and 0–500.

MODELS 155, 157—2½″

Range mA	Net Each, Lots of 1-9	10-24	25-49
Any range	$19.20	$17.28	$16.32

MODELS 55, 57—3½″

Range mA	Net Each, Lots of 1-9	10-24	25-49
Any range	$20.25	$18.23	$17.21

MODEL 59—4½″

Range mA	Net Each, Lots of 1-9	10-24	25-49
Any range	$21.45	$19.31	$18.23

RF MILLIAMMETERS—MODELS 35, 37, 39

MODELS 35, 37—3½″

Range mA	*	Net Each, Lots of 1-9	10-24	25-49
0–115†	5.5	$46.05	$41.45	$39.14
0–150	4.5	30.15	27.14	25.64
0–250	3.5	30.15	27.14	25.64
0–500	.63	30.15	27.14	25.64

*Approx. imped. (ohms) at 60 Hz. †0–100 linear scale.

MODEL 39—4½″

Range mA	*	Net Each, Lots of 1-9	10-24	25-49
0–115†	5.5	$48.30	$43.47	$41.04
0–150	4.5	34.05	30.65	28.94
0–250	3.5	34.05	30.65	28.94
0–500	.63	34.05	30.65	28.94

*Approx. imped. (ohms) at 60 Hz. †0–100 linear scale.

COMPENSATED WATTMETERS—SINGLE PHASE

MODEL 77—3½″

Range Watts	Max. A	Net Each, Lots of 1-9	10-24	25-49
0–10	.175	$71.70	$64.53	$60.95
0–20	.400	71.70	64.53	60.95
0–20	.175‡	71.70	64.53	60.95
0–30	.650	71.70	64.53	60.95
0–30	.300‡	71.70	64.53	60.95
0–50	.500‡	71.70	64.53	60.95

‡Max. 500 volts. Others 300 V.

MODEL 79—4½″

Range Watts	Max. A	Net Each, Lots of 1-9	10-24	25-49
0–10	.175	$74.55	$67.10	$63.37
0–20	.400	74.55	67.10	63.37
0–20	.175‡	74.55	67.10	63.37
0–30	.650	74.55	67.10	63.37
0–30	.300‡	74.55	67.10	63.37
0–50	.500‡	74.55	67.10	63.37

‡Max. 500 volts. Others 300 V.

RANGES WITHOUT PRICES (—) AVAILABLE ON SPECIAL ORDER. CONTINUED, NEXT PAGE

Simpson Panel Meters, Accessories

INSTRUMENTS THAT STAY ACCURATE

RECTANGULAR AND ROUND PANEL METERS (CONTINUED)

WATTMETERS—DYNAMOMETER TYPE—SINGLE PHASE—MODELS 75, 77, 79, 175, 177

MODELS 175, 177—2½″

Range Watts	Maximum Volts	Maximum Amps	Net Each, Lots of 1-9	10-24	25-49
0–75†	150	1.0	$42.75	$38.48	$36.34
0–150	150	2.0	42.75	38.48	36.34
0–300†	150	4.0	42.75	38.48	36.34
0–750	150	10.0	42.75	38.48	36.34
0–600	300	4.0	46.80	42.12	39.78
0–1500	300	10.0	46.80	42.12	39.78
0–3000†	300	20.0	46.80	42.12	39.78

†Model 75 or 175 not available.

MODELS 75, 77—3½″

Range Watts	Maximum Volts	Maximum Amps	Net Each, Lots of 1-9	10-24	25-49
0–75	150	1.0	$45.00	$40.50	$38.25
0–150	150	2.0	45.00	40.50	38.25
0–300	150	4.0	45.00	40.50	38.25
0–750	150	10.0	45.00	40.50	38.25
0–600	300	4.0	48.75	43.88	41.44
0–1500†	300	10.0	48.75	43.88	41.44
0–3000	300	20.0	48.75	43.88	41.44

MODEL 79—4½″

Range Watts	Maximum Volts	Maximum Amps	Net Each, Lots of 1-9	10-24	25-49
0–75	150	1.0	$55.80	$50.22	$47.43
0–150	150	2.0	55.80	50.22	47.43
0–300	150	4.0	55.80	50.22	47.43
0–750	150	10.0	55.80	50.22	47.43
0–600	300	4.0	59.55	53.60	50.62
0–1500	300	10.0	59.55	53.60	50.62
0–3000	300	20.0	59.55	53.60	50.62

VOLUME LEVEL INDICATORS—MODELS 45, 47, 49, 142, 145, 147

Decibel meters—Zero power level, 6 mW 500 ohm line; −10 to +6 dB 5000 ohms. **VU meters**—Reference level, 1 mW 600 ohm line. Impedance is 3900 ohms at zero VU deflection.

MODELS 145, 147—2½″

Range	Net Each, Lots of 1-9	10-24	25-49
General Purpose dB	$30.15	$27.14	$25.64

MODELS 45, 47—3½″

Range	Net Each, Lots of 1-9	10-24	25-49
Gen'l Purpose dB‡	$30.30	$27.27	$25.76
A Scale VU*	36.00	32.40	30.60
B Scale VU*‡	36.00	32.40	30.60
A Scale VU†	—	—	—
B Scale VU†	—	—	—

*Not illuminated. †Illuminated; available on special order. ‡Model 45 not available.

MODELS 49, 142—4½″

Range	Net Each, Lots of 1-9	10-24	25-49
General Purpose dB	$32.70	$29.43	$27.80
A Scale VU*‡	39.15	35.24	33.28
B Scale VU*‡	39.15	35.24	33.28
A Scale VU†‡	42.75	38.48	36.34
B Scale VU†‡	42.75	38.48	36.34

*Not illuminated. †Illuminated. ‡Model 142; Model 49 not available.

RF AMMETERS—INTERNAL THERMOCOUPLE TYPE

MODELS 135, 137—2½″

Range Amps	Approx. Imp. Ohms†	Net Each, Lots of 1-9	10-24	25-49
0–1	.343	$23.25	$20.93	$19.76
0–1.5	.200	23.25	20.93	19.76
0–2‡	.120	23.25	20.93	19.76
0–2.5§	.10	23.25	20.93	19.76
0–3	.08	23.25	20.93	19.76
0–5	.045	23.25	20.93	19.76
0–8‡	.031	23.25	20.93	19.76
0–10‡	.023	23.25	20.93	19.76

MODELS 35, 37—3½″

Range Amps	Approx. Imp. Ohms†	Net Each, Lots of 1-9	10-24	25-49
0–1	.343	$25.65	$23.09	$21.80
0–1.5‡	.200	25.65	23.09	21.80
0–2‡	.120	25.65	23.09	21.80
0–2.5‡	.10	25.65	23.09	21.80
0–3	.08	25.65	23.09	21.80
0–5	.045	25.65	23.09	21.80
0–8‡	.031	25.65	23.09	21.80
0–10	.023	25.65	23.09	21.80

MODEL 39—4½″

Range Amps	Approx. Imp. Ohms†	Net Each, Lots of 1-9	10-24	25-49
0–1	.343	$29.25	$26.33	$24.86
0–1.5	.200	29.25	26.33	24.86
0–2	.120	29.25	26.33	24.86
0–2.5	.10	29.25	26.33	24.86
0–3	.08	29.25	26.33	24.86
0–5	.045	29.25	26.33	24.86
0–8	.031	29.25	26.33	24.86
0–10	.023	29.25	26.33	24.86

†At 60 Hz. ‡Model 35 or 135 not available. §Model 137 not available.

AC VOLTMETERS—RECTIFIER TYPE—MODELS 45, 47, 49

2000 OHMS PER VOLT

Range Volts	Models 45 and 47—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 49—4½″ Net Each, Lots of 1-9	10-24	25-49
0–1*	$30.30	$27.27	$25.76	$33.60	$30.24	$28.56
0–3*	30.30	27.27	25.76	33.60	30.24	28.56
0–5	30.30	27.27	25.76	33.60	30.24	28.56
0–10	30.30	27.27	25.76	33.60	30.24	28.56
0–15	30.30	27.27	25.76	33.60	30.24	28.56
0–50*	30.30	27.27	25.76	33.60	30.24	28.56
0–100*	30.30	27.27	25.76	33.60	30.24	28.56
0–150	30.30	27.27	25.76	33.60	30.24	28.56
0–300	30.30	27.27	25.76	33.60	30.24	28.56

AC MILLIAMMETER—RECTIFIER TYPE

Range	Models 45, 47—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 49—4½″ Net Each, Lots of 1-9	10-24	25-49
0–1 mA	$29.25	$26.33	$24.86	$31.95	$28.76	$27.16
0–2 mA*	29.25	26.33	24.86	31.95	28.76	27.16
0–5 mA	29.25	26.33	24.86	31.95	28.76	27.16
AC MICROAMMETERS—RECTIFIER TYPE						
0–100 µA	$33.60	$30.24	$28.56	$35.85	$32.27	$30.47
0–200 µA	—	—	—	32.55	29.30	27.67
0–300 µA*	29.25	26.33	24.86	31.95	28.76	27.16
0–500 µA*	28.95	26.06	24.61	31.35	28.22	26.65

*Model 45 not available.

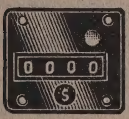
DC GALVANOMETERS—MODELS 25, 27, 29, 125, 127

SCALE: 50–0–50

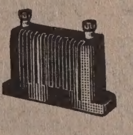
Sensitivity µA	Res. Ohms	Models 125, 127—2½″ Net Each, Lots of 1-9	10-24	25-49
500–0–500	43	$21.00	$18.90	$17.85
75–0–75	1800	22.80	20.52	19.38

Sensitivity µA	Res. Ohms	Models 25, 27—3½″ Net Each, Lots of 1-9	10-24	25-49
500–0–500	43	$21.90	$19.71	$18.62
75–0–75	1800	24.60	22.14	20.91

Sensitivity µA	Res. Ohms	Model 29—4½″ Net Each, Lots of 1-9	10-24	25-49
500–0–500	43	$23.25	$20.93	$19.76
75–0–75	1800	27.00	24.30	22.95



Counter



Multiplier

ELECTRO-MECHANICAL COUNTERS

Provide accurate counting up to 600 counts per minute. Features include: Rugged, rigid structure; instant numerical switching, only complete figures visible; readable from wide angles; resets with front panel pushbutton control; counts dependably on 50 milliseconds pulses. Built to operate reliably under actual field conditions of vibration, humidity and extreme temperatures. **Max. Indication:** 9,999. **Numerals:** White on black, .15″ w. x .2″ h. **Power Required:** 4.2 watts nominal, ±15% of rated voltage. **Size:** Panel 2.14″ w. x 0.4″ d. x 1.84″ h.; 1.88″ deep behind panel. **Construction:** Bezel of rugged thermosetting materials, black matte finish; heavy steel frame with a formed aluminum cover.

Model	Volts	Catalog Number	Net Each, Lots of 1-9	10-24	25-49	50-99	100-249
103	117 VAC	12643	$17.70	$15.93	$15.05	$13.28	$12.39
104	6 VDC	12641	17.70	15.93	15.05	13.28	12.39
104	12 VDC	12642	17.70	15.93	15.05	13.28	12.39

MODEL 183 MULTIPLIERS

FOR AC VOLTMETERS

166 ohms/volt. Meter drop, 150 volts.

Model	Range, Volts	Resis., Ohms	Net Each, Lots of 1-9	10-24	25-49
8562	0–500	58333	$ 9.75	$ 8.78	$ 8.29
8563	0–600	75000	11.10	9.99	9.44
8564	0–750	100000	12.15	10.94	10.33
8565	0–1000	141666	14.55	13.10	12.37

FOR DC VOLTMETERS

2000 ohms/volt. Meter sensitivity, 500 µA.

Model	Range, Volts	Resis., Megs	Net Each, Lots of 1-9	10-24	25-49
8552	0–500	1	$ 8.10	$7.29	$6.89
8553	0–750	1.5	8.55	7.70	7.27
8554	0–1000	2	8.55	7.70	7.27
8555	0–1250	2.5	8.55	7.70	7.27
8556	0–1500	3	9.00	8.10	7.65
8557	0–2000	4	9.00	8.10	7.65
8558	0–2500	5	9.15	8.24	7.78
8559	0–3000	6	9.15	8.24	7.78
8560	0–4000	8	9.90	8.91	8.42
8561	0–5000	10	10.95	9.86	9.31

Simpson Special Panel Meters

INSTRUMENTS THAT STAY ACCURATE

"RUGGED SEAL" PANEL METERS

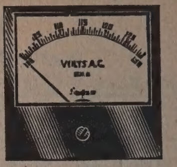
Metal-cased panel instruments ideal for use in field test equipment or where rigorous environments are encountered. Completely sealed, commercially ruggedized, metal cased and shielded against steel panel mounting. External magnet movement.
Standard Metal-Cased Meters: AC meters are rectifier type with ±3% of full scale accuracy at 25° C and 60 Hz sine wave. AC ammeters maintain accuracy over 55–125 Hz range; other AC meters over 25–2500 Hz range. DC meters have ±2% of full scale accuracy.
Segmental Metal-Cased Meters: Measure very small changes in input with segmental voltmeters and frequency meters. Significant portion is expanded to occupy the full scale length.

Expanded-Scale Type Meter	Freq. Range, Hz	Sensitivity Ohms/Volt	Waveform Influence		Max. Input Volt. V rms (10 sec)
			Squarewave	Triangular	
AC Voltmeters‡	55–550	50, 65, 80*	2.5, 2, 1%*	1.2, .6, .3%*	150
DC Voltmeters	....	100	....	....	40†
Frequency Meters	....	3 VA max.	.1% max.	.1% max.	140

*For 100–130, 105–125 and 110–120 V ranges respectively. †Volts max. input. ‡Rms sensing.

METER SIZES

Size	Fig.	Model	Size, Inches
2½"	B	3282	2.695 dia. flange; body 2.21 dia. x 2.0 d.
	B	3222	2.695 dia. flange; body 2.21 dia. x 1.60 d.
3½"	B	3223	3.51 dia. flange; body 2.80 dia. x 1.66 d.
	B	3283	3.51 dia. flange; body 2.80 dia. x 3.16 d.
	A	3323, 3343	3.25 sq.; body 2.69 dia. x 1.23 d.
	A	3383	3.25 sq.; body 2.72 dia. x 3.56 d.
4½"	B	3224	4.60 dia. flange; body 3.76 dia. x 1.51 d.
	B	3284	4.60 dia. flange; body 3.76 dia. x 3.83 d.
	A	3324, 3344	4.68 x 4.15; body 2.69 dia. x 1.21 d.
	A	3384	4.68 x 4.15; body 2.72 dia. x 3.56 d.
4" x 6"	C	3326, 3346	5.84 x 4.62; body 2.69 dia. x 1.19 d.
	C	3386	5.84 x 4.62; body 2.72 dia. x 3.56 d.



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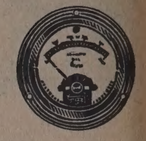

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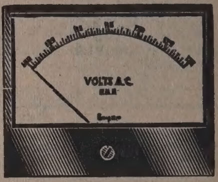


C

DC MODELS 3323, 3324 AND 3326
DC VOLTMETERS

Ranges Available: 0–1.5, 0–10, 0–15, 0–25, 0–50, 0–100, 0–500.

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
Any Value, Above	1000 per Volt	3323	3½"	$25.50	$22.95	$21.68
		3324	4½"	27.75	24.98	23.59
		3326	4" x 6"	30.30	27.27	25.76

DC MILLIVOLTMETERS

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–50 mV	10	3323	3½"	$25.65	$23.09	$21.80
		3324	4½"	28.20	25.38	23.97
		3326	4" x 6"	30.90	27.81	26.27

DC MILLIAMMETERS

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–1 mA	80	3323	3½"	$24.45	$22.01	$20.78
		3324	4½"	26.55	23.90	22.57
		3326	4" x 6"	29.70	26.73	25.25
0–100mA	.5	3323	3½"	26.25	23.63	22.31
		3324	4½"	28.05	25.25	23.84
		3326	4" x 6"	31.05	27.95	26.39

DC MICROAMMETERS

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–50 μA	3000	3323	3½"	$32.85	$29.57	$27.92
		3324	4½"	35.25	31.73	29.96
		3326	4" x 6"	38.40	34.56	32.64
0–100 μA	1300	3323	3½"	29.85	26.87	25.37
		3324	4½"	32.10	28.89	27.29
		3326	4" x 6"	35.55	32.00	30.22

DC AMMETERS

Range, Amps	Internal Shunt	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–5 or 0–10	75 mV max.	3323	3½"	$25.95	$23.36	$22.06
		3324	4½"	28.05	25.25	23.84
		3326	4" x 6"	31.05	27.95	26.39

EXPANDED-SCALE SEGMENTAL FREQUENCY METERS

Accuracy: ±0.25%, checked at center scale frequency at 25° C and 115 volts sine wave after 30-minute warmup; after 1-minute warmup, 1.0%; at end scale, maximum error is 0.5%.

Range, Hz	Center, Hz	Model	Size	Net Each, Lots of 1-9	10-24	25-49
380–420	400	3283	3½" rd.	$223.95	$201.56	$190.36
		3284	4½" rd.	234.30	200.83	199.16
		3383	3½" sq.	218.40	196.56	185.64
		3384	4½" sq.	224.70	202.23	191.00
		3386	4" x 6"	231.15	208.04	196.48

AC MODELS 3343, 3344 AND 3346
AC VOLTMETERS—RECTIFIER TYPE

Range, Volts	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–150 or 0–300	1000 per Volt	3343	3½"	$30.60	$27.54	$26.01
		3344	4½"	32.40	29.16	27.54
		3346	4" x 6"	35.55	32.00	30.22

AC AMMETERS—RECTIFIER TYPE

Range, Amps	Internal Trans.Burden	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–1 or 0–5	0.5 VA max.	3343	3½"	$38.25	$34.43	$32.51
		3344	4½"	39.75	35.78	33.79
		3346	4" x 6"	43.05	38.75	36.59

AC MILLIAMMETERS—RECTIFIER TYPE

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–1 mA	600	3343	3½"	$30.30	$27.27	$25.76
		3344	4½"	32.10	28.89	27.29
		3346	4" x 6"	38.25	34.43	32.51

AC MICROAMMETERS—RECTIFIER TYPE

Range	Approx. Resis., Ohms	Model	Size	Net Each, Lots of 1-9	10-24	25-49
0–100 μA	4000	3343	3½"	$32.10	$28.89	$27.29
		3344	4½"	33.45	30.11	28.43
		3346	4" x 6"	36.30	32.67	30.86

EXPANDED-SCALE SEGMENTAL AC VOLTMETERS

Center Scale: 115 volts, all models.

Range, Volts	Accuracy*	Model	Size	Net Each, Lots of 1-9	10-24	25-49
100–130 105–125 or 110–120	±1.0% ±0.5% ±0.3%	3282	2½" rd.	$102.90	$92.61	$87.47
		3283	3½" rd.	94.80	85.32	80.58
		3284	4½" rd.	105.30	94.77	89.51
		3383	3½" sq.	86.85	78.17	73.82
		3384	4½" sq.	95.70	86.13	81.35
		3386	4" x 6"	102.30	92.07	86.96

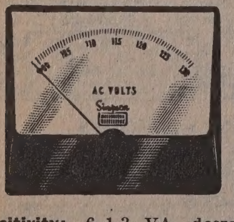
EXPANDED SCALE SEGMENTAL DC VOLTMETERS

Center Scale: 27 volts.

Range	Accuracy	Model	Size	1-9	10-24	25-49
24–30	±0.5%	3222	2½" rd.	$88.20	$79.38	$74.97
		3223	3½" rd.	80.55	72.50	68.47
		3224	4½" rd.	90.45	81.41	76.88
		3323	3½" sq.	72.45	65.21	61.58
		3324	4½" sq.	81.30	73.17	69.11
		3326	4" x 6"	87.45	78.71	74.33

* Accuracy is in percent of center scale value.

SEGMENTAL VOLTMETERS



Models 1347, 1349

Self-shielding movement. Has four mounting studs. Possible to measure small changes in input conditions. **Frequency Range:** Single, 20–2000 Hz; Multi, 50–1000 Hz. **Sensitivity:** .6–1.3 VA, decreases as input voltage increases. **Range:** Single 100–130 VAC; Multi, 100–130; 200–260; 400–520 VAC. **Input Voltage (max.):** Single, 150 V rms (10 sec); Multi, 150, 300, 600 V rms (10 sec) per range respectively. **Waveform Influence:** Squarewave, 11%; Triangular, 5%. **Size:** Model 1349, 4.68" x 4.0" flange, body 2.75" dia. x 1.08" d.; Model 1347, 3.25" sq. flange, body 2.73" dia. x 1.08" d.; Model 49, 4.66" x 4.2" flange, body 2.75" dia. x 1" d. Model 2143, 3" sq. flange, body 2.69" dia. x 1.34" d.; Model 2144, 4.66" x 4.2" flange, body 2.69" dia. x 1.34" d. Bakelite* case.

WIDE-VUE TYPES

Model	Size	Net Each, Lots of 1-9	10-24	25-49
1347	3½"	$66.15	$59.54	$56.23
1349	4½"	66.60	59.94	56.61
1349*	4½"	82.35	74.12	70.00
2143†	3½"	66.15	59.54	56.23
2144†	4½"	66.60	59.54	56.61
2144*†	4½"	82.35	74.12	70.00

RECTANGULAR TYPE

Model	Size	1-9	10-24	25-49
49	4½"	$66.60	$59.94	$56.61

*Multi-range type; with external potential transformer. †Century design. *Registered Bakelite Corp. TM.

MOUNTING BEZEL AND ILLUMINATION KIT

FOR "WIDE-VUE" PANEL METERS

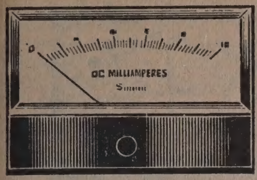
Mounting bezels add modern streamlined appearance to Wide-Vue panel meters (listed on another Simpson page). Groove and flange construction of diecast metal with satin black finish. For behind-panel mounting on panels ⅛" to 3/16" thick. With brackets, screws and template. Illumination kit is for 3½" and 4½" models.

Meter Size	For "Wide-Vue" Models	Net Each, Lots of 1-9	10-24	25-49
3½"	1327, 1337, 1347, 1357	$2.55	$2.30	$2.17
4½"	1329, 1339, 1349, 1359 and 1379	2.55	2.30	2.17
......	Illum. Kit	2.40	2.16	2.04

Simpson Special Panel Meters

INSTRUMENTS THAT STAY ACCURATE

DESIGNER SERIES PANEL METERS



Molded black phenolic-cased panel meters for compact equipment designs. Clean, professional styling. All have self-shielded spring backed jewel movement with ±2% accuracy and utilize maximum scale length for full readability. **Size:** Models 523, 543 and 553: 3.95″ w. x 1.81″ d. (behind panel) x 2.67″ h.; mtg. ctrs., 2.936″. Models 524, 544 and 554: 4½″ w. x 1.81″ d. (behind panel) x 2.9″ h.; mtg. ctrs., 3½″. All models supplied with necessary mounting and terminal hardware. Knife-edge pointer.

DC VOLTMETERS

Range	Model 523—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 524—4½″ Net Each, Lots of 1-9	10-24	25-49
0–5 V	$23.10	$20.79	$19.64	$25.20	$22.68	$21.42
0–10	23.10	20.79	19.64	25.20	22.68	21.42
0–15	23.10	20.79	19.64	25.20	22.68	21.42
0–30	23.10	20.79	19.64	25.20	22.68	21.42
0–50	23.10	20.79	19.64	25.20	22.68	21.42
0–100	23.10	20.79	19.64	25.20	22.68	21.42
0–150	23.10	20.79	19.64	25.20	22.68	21.42

DC MILLIVOLTMETERS

0–50 mV	$21.90	$19.71	$18.61	$24.15	$21.74	$20.53

DC AMMETERS

0–1 A	$22.35	$20.12	$19.00	$24.15	$21.74	$20.53
0–3	22.35	20.12	19.00	24.15	21.74	20.53
0–5	22.35	20.12	19.00	24.15	21.74	20.53
0–10	22.35	20.12	19.00	24.15	21.74	20.53
0–15	22.35	20.12	19.00	24.15	21.74	20.53
0–25	22.35	20.12	19.00	24.15	21.74	20.53
0–50	22.35	20.12	19.00	24.15	21.74	20.53

DC MILLIAMMETERS

Range	Model 523—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 524—4½″ Net Each, Lots of 1-9	10-24	25-49
0–1 mA	$21.60	$19.44	$18.36	$23.10	$20.79	$19.64
0–5	21.60	19.44	18.36	23.10	20.79	19.64
0–10	21.60	19.44	18.36	23.10	20.79	19.64
0–50	22.35	20.12	19.00	24.15	21.74	20.53
0–100	22.35	20.12	19.00	24.15	21.74	20.53
0–200	22.35	20.12	19.00	24.15	21.74	20.53
0–300	22.35	20.12	19.00	24.15	21.74	20.53
0–500	22.35	20.12	19.00	24.15	21.74	20.53

DC MICROAMMETERS

0–15 μA*	$39.90	$35.91	$33.92	$43.80	$39.42	$37.23
0–25	34.05	30.65	28.94	37.50	33.75	31.88
0–50	27.45	24.71	23.34	29.70	26.73	25.24
0–100	25.20	22.68	21.42	28.05	25.25	23.60
0–200	23.10	20.79	19.64	25.20	22.68	21.42
0–500	22.80	20.52	19.38	24.60	22.14	20.91
25–0–25	27.75	24.98	23.60	29.85	26.87	25.38
50–0–50	25.20	22.68	21.42	28.20	25.38	23.97
100–0–100	23.25	20.93	19.77	25.65	23.91	22.63
500–0–500	21.90	19.71	18.71	23.25	20.93	19.77

*Taut band.

AC VOLTMETERS

Range	Model 553—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 554—4½″ Net Each, Lots of 1-9	10-24	25-49
0–150 V	$22.80	$20.52	$19.38	$24.15	$21.74	$20.53
0–250	22.80	20.52	19.38	24.15	21.74	20.53
0–300	22.80	20.52	19.38	24.15	21.74	20.53

AC AMMETERS

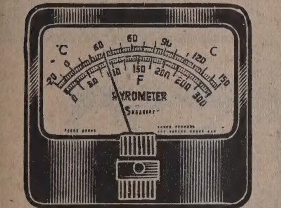
0–1 A	$20.25	$18.23	$17.21	$23.55	$21.20	$20.02
0–5	20.25	18.23	17.21	23.55	21.20	20.02
0–10	20.25	18.23	17.21	23.55	21.20	20.02
0–15	20.25	18.23	17.21	23.55	21.20	20.02
0–25	20.25	18.23	17.21	24.15	21.74	20.53
0–50	20.25	18.23	17.21	24.15	21.74	20.53
0–100	20.25	18.23	17.21	23.55	21.20	20.02
0–150	20.25	18.23	17.21	23.55	21.20	20.02

VOLUME LEVEL INDICATOR

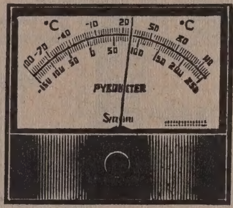
Range, VU	Model 543—3½″ Net Each, Lots of 1-9	10-24	25-49	Model 544—4½″ Net Each, Lots of 1-9	10-24	25-49
"A" Scale	$36.00	$32.40	$30.60	$39.15	$35.24	$33.28
"A" Scale*	39.60	35.64	33.66	42.75	38.48	36.34
"B" Scale*	39.60	35.64	33.66	42.75	38.48	36.34

*Illuminated.

PYROMETERS AND THERMOCOUPLES



Model 29



Model 3324

PYROMETERS

Fully compensated for ambient temperature changes and include copper circuit compensation. Calibrated for use with Simpson iron constantan thermocouples which are available as accessory items. Pyrometers with 0° F to +300° F range are calibrated for 5-ohm thermocouple resistance; all others for 10 ohms. Each pyrometer is supplied with an external, adjustable series resistor to permit use of lower resistance thermocouples in the field. Accuracy: 2%. Size: Model 29, 4.66″ w. x 1.70″ d. (behind panel) x 4.20″ h.; mtg. ctrs., 4″ x 3.56″. Model 3324, 4.68″ w. x 1.89″ d. (behind panel) x 4.15″ h.; mtg. centers, 4″ x 3.56″.

STANDARD BAKELITE® MODEL 29

Model No.	Temperature Range °F	°C	Res., Ohms*	Net Each, Lots of 1-9	10-24	25-49
21200	−150 to +250	−100 to +120	10	$40.20	$36.18	$34.17
21202	0–300	−20 to +150	5	40.20	36.18	34.17
21204	0–500	−20 to +260	10	40.20	36.18	34.17
21206	0–750	−20 to +400	10	40.20	36.18	34.17
21208	0–1000	−20 to +540	10	40.20	36.18	34.17
21209	0–1500	−20 to +820	10	37.35	33.62	31.75
21210	0–2000	−20 to +1200	10	37.35	33.62	31.75
21211	0–2500	−20 to +1380	10	37.35	33.62	31.75

RUGGED SEAL MODEL 3324

21201	−150 to +250	−100 to +120	10	$54.75	$49.28	$46.54
21203	0–300	−20 to +150	5	54.75	49.28	46.54
21205	0–500	−20 to +260	10	54.75	49.28	46.54
21207	0–750	−20 to +400	10	54.75	49.28	46.54
21212	0–1000	−20 to +540	10	54.75	49.28	46.54
21213	0–1500	−20 to +820	10	51.90	46.71	44.12
21214	0–2000	−20 to +1200	10	51.90	46.71	44.12
21215	0–2500	−20 to +1380	10	51.90	46.71	44.12

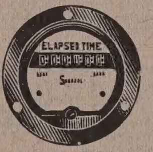
*Max., external. ®Bakelite Corp. trademark.

IRON CONSTANTAN THERMOCOUPLES

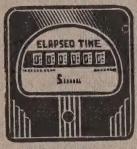
Stainless steel overbraid for extra-rugged service, or glass cloth for general purpose or permanent mtg. in protected sheaths. Pyrometers for 0–300° F take 5-ohm; all others, 10-ohm.

Model No.	Res., Ohms	Overbraid	Length Inches	Ga.	Net Each, Lots of 1-9	10-24	25-49
21221	5	Stainless steel	162	20	$17.40	$15.66	$14.79
21222	10	Glass cloth	137	24	6.30	5.67	5.36
21223	10	Glass cloth	34	30	5.25	4.73	4.46
21224	10	Stainless steel	325	20	31.65	28.49	26.90

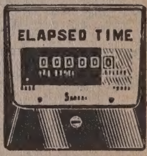
ELAPSED TIME METERS



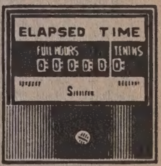
55ET



57ET



1357ET



2153ET

New model 108ET supplied with separate round and square interchangeable metal bezels; operating temp., −55° to +85° C; convex glass window solder-sealed to case; 5-digit readout. Model 1357ET matches Wide-Vue meters. Model 2153ET matches Century Series panel meters. Models 55ET and 57ET are similar to standard 3½″ meters. Uses self-starting synchronous clock motors. **Size:** Model 108ET, 2.675″ dia. round flange (sim. to 55ET), 2.75″ sq. flange (sim. to 57ET), body 2.14″ dia. x 2.368″ deep, three mtg. studs; Model 1357ET, 3.25″ sq. flange, body 2.75″ dia. x 2.37″ deep, four mtg. studs; Model 2153ET, 3″ sq. flange, body 2.69″ dia. x 1.34″ deep, four mtg. studs; Model 55ET, 3½″ dia. flange, body 2.75″ dia. x 2.55″ deep, three mtg. holes; Model 57ET, 3.00″ w. x 3.12″ h. flange, body 2.75″ dia. x 2.60″ deep, four mtg. studs.

Model	Oper. Volts	Size	Max. Hour Indication	Net Each, Lots of 1-9	10-24	25-49
108ET	120 VAC	2½″	9999.9	$37.50	$33.75	$31.88
108ET	240 VAC	2½″	9999.9	38.10	34.29	32.39
1357ET	120 VAC	3½″	99999.9	28.05	25.25	23.84
1357ET	240 VAC	3½″	99999.9	28.35	25.52	24.10
2153ET	120 VAC	3½″	99999.9	20.25	18.23	17.21
2153ET	240 VAC	3½″	99999.9	28.35	25.52	24.10
55ET	120 VAC	3½″	99999.9	28.05	25.25	23.84
55ET	240 VAC	3½″	99999.9	28.35	25.52	24.10
57ET	120 VAC	3½″	99999.9	28.05	25.25	23.84
57ET	240 VAC	3½″	99999.9	28.35	25.52	24.10

Simpson Meter Relays, Accessories

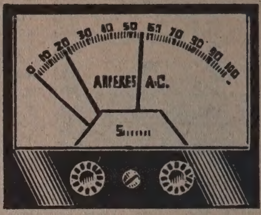
INSTRUMENTS THAT STAY ACCURATE

RUGGED SEAL CONTACTLESS METER RELAYS

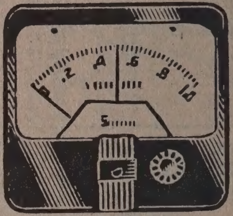
Set points are 100% (single), 90% (dual) adjustable on scale by front panel knobs thru a gear drive; indication, by separate lance pointers, within 1% of actual switching. Sensing is done through an infinite life lamp and photoconductors. Solid state switching circuit and DPDT slave relay provided internally for each control point; both slaves open in case of power failure. Slaves will switch to 10 amps per set of contacts at 115 VAC. **Power Required:** 115 VAC, 50–500 Hz. DC required for sensing and switching is provided by external power module furnished with dual control models; self-contained, single control models. **Size:** (Single Control Models) 3½″ units, 3.25″ sq. x 2.20″ d. behind panel; 4½″ models, 4.68″ w. x 4.15″ h. x 2.20″ d. behind panel; 4″ x 6″ models, 5.84″ w. x 4.62″ h. x 2.20″ d. behind panel.

	3½″ Single Control* Net Each, Lots 1-9*		4½″ Single Control* Net Each, Lots 1-9*		4″ x 6″ Single Cont.* Net Each, Lots 1-9*	
Range	**3323XA Pivot & Jewel**	**3323TXA Taut Band**	**3324XA Pivot & Jewel**	**3324TXA Taut Band**	**3326XA Pivot & Jewel**	**3326TXA Taut Band**
0–10 μADC	…	$141.45	…	$144.90	…	$148.50
0–25 μADC	…	131.10	…	…	…	138.00
0–50 μADC	…	122.40	…	125.85	…	129.45
0–100 μADC	…	118.80	…	122.25	…	125.70
0–200 μADC	…	…	$122.25	…	…	…
0–500 μADC	…	…	122.25	…	…	…
0–1 mADC	$117.60†	…	121.05†	…	$124.50†	…
0–50 mVDC	117.90†	…	121.35†	…	124.80†	…
0–5 AAC	…	…	133.50†§	…	…	…
0–10 VAC	…	…	130.65§	…	…	…

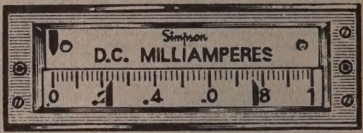
*For dual control, add **$31.65** to price shown except: †add **$31.80.** §Model 3344XA.
Larger quantity prices on request.



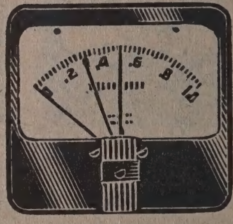
3326TXA Contactless Type



29XA Contactless Type



3623XA, 3643XA



29XA Contact Type

RUGGED SEAL TEMPERATURE CONTROL METER RELAYS

Contactless type, as above; thermocouples not supplied. 4½″ meter.

		Model 3324XA 4½″ Net Each, Lots 1-9*				Model 3324XA 4½″ Net Each, Lots 1-9*	
Range	**Approx. Resis., Ohms**	**Single Control**	**Dual Control**	**Range**	**Approx. Resis., Ohms**	**Single Control**	**Dual Control**
−75° to +225° F	5	$132.30	$172.20	0° to +1000° F	10	$129.30	$169.20
0° to +300° F	5	132.30	172.20	0° to +1500° F	10*	129.30	169.20
0° to +500° F	10	129.30	169.20	0° to +2000° F	10	129.30	169.20
0° to +750° F	10	129.30	169.20	0° to +2500° F	10	129.30	169.20

*Requires C/A type thermocouple; all others require I/C type thermocouple (listed on another page). ***Larger quantity prices on request.***

MODELS 29XA AND 49XA

CONTACTLESS METER RELAYS

Feature contactless control point sensing for high control accuracy, smaller "dead band", absolute freedom from interference with indicating meter. Solid state high gain amplifier for maximum reliability. Self-shielding annular movement. DPDT relay contacts for each control point, rated 10 amps at 115 VAC. **Accuracy:** ±2% of full scale. **Control Point Adjustment:** 0–100% of arc. Double control types have low limit of 0–95% of arc, high limit 95–100% of arc. **Control Point Switching:** Within 1% of indication. **Control Point Differential:** Within 0.5% of full scale. **Differential:** Difference between "on" and "off", within 0.5% of full scale. **Size:** 4.66″ x 4.21″; body, 2.72″ dia. x 4.25″ deep.

		Net Each, Lots 1-9*	
Range	**Model**	**Single Control**	**Dual Control**
0–10 μA DC	29TXA*	$126.75	$158.40
0–25 μA DC	29TXA*	116.25	147.90
0–50 μA DC	29TXA*	111.15	142.80
0–100 μA DC	29TXA*	107.55	139.35
0–200 μA DC	29XA	103.95	135.75
0–500 μA DC	29XA	103.95	135.75
0–1 mA DC	29XA	102.75	134.55
0–50 mV DC	29XA	103.05	134.85
0–5 Amps AC	49XA	115.20	147.00
0–10 V AC	49XA	112.35	144.00

*Taut band types. ***Larger quantity prices on request.***

MODELS 3623XA, 3643XA CONTACTLESS METER RELAYS

Single and double set point models with mode indication lamps; each set point has SPDT relay rated 5 A resistive, 115 VAC, 50–500 Hz per pole; removable set point knobs to prevent tampering; relays are field-replaceable. **Power Ratings:** 4 VA max. single set point, 6 VA max. double set point; life, 1,000,000 operations. **Set Points:** Single, 0–100% of full scale; double, 0–98% low and 2–100% high, can be set within 2° of each other; control switching within 1.0% of set points; dead band less than 0.5% of full scale. Also available as temperature controller or as photocell output meter relay.

3623XA DC METER RELAYS

		Net Each, Lots of		
Model	**Scale**	**1-9**	**10-24**	**25-49**
16839	0–50 μA	$128.10	$115.29	$108.89
16840*	0–50 μA	160.65	144.59	136.55
16841	0–100 μA	121.80	109.62	103.53
16842*	0–100 μA	154.35	138.92	131.20
16847	0–1 mA	115.50	103.95	98.18
16848*	0–1 mA	148.05	133.25	125.84
16849	0–50 mV	118.65	106.79	100.85
16850*	0–50 mV	151.20	136.08	128.52

3643XA AC METER RELAYS

16851	0–5 A	$124.95	$112.46	$106.21
16852*	0–5 A	157.50	141.75	133.88
16853	0–10 V	121.80	109.62	103.53
16854*	0–10 V	154.30	138.87	131.16
16855	0–150 V	121.80	109.62	103.53
16856*	0–150 V	154.35	138.92	131.20

*Double set point meters; all others have single set points.

29XA CONTACT METER RELAYS

D'Arsonval movement. **Contacts:** Externally adjustable over 95° of 100° scale arc, within 5° of each other. Non-locking; for use in circuits with external locking provisions or in non-locking uses. Will close within 2% and break within 10% of full scale value. Gold alloy. For use at 15 VDC 10 mA max. on resistive or diode protected inductive loads. **Accuracy:** ±2% of full scale. **Insulation Breakdown:** 300 VAC from relay contacts to meter circuit; 3 kV AC, relay terminals to mounting panel (all at 60 Hz). **Size:** 4.66″ x 4.21″; body, 2.77″ dia. x 0.99″ deep.

		Net Each, Lots of		
Range	**Model No.**	**1-9**	**10-24**	**25-49**
0–50 μA	7032	$65.10	$58.59	$55.34
0–100 μA	7034	62.25	56.03	52.91
0–200 μA	7036	58.35	52.52	49.60
0–500 μA	7038	57.60	51.84	48.96
0–1 mA	7040	56.10	50.49	47.69
0–50 mV	7050	56.25	50.63	47.81

MODEL 186 CURRENT TRANSFORMERS FOR CONTACTLESS METER RELAYS

Convert 0–10 volt Model 3344XA, above, to AC current control unit. Frequency Range, 30 Hz to 5 kHz. Accuracy, ±2%.

			Net Each, Lots of						Net Each, Lots of		
Model	**Range**	**VA**	**1-9**	**10-24**	**25-49**	**Model**	**Range**	**VA**	**1-9**	**10-24**	**25-49**
01294	0–50 mA	0.40	$16.95	$15.26	$14.41	01312	0–5 amp	0.75	$14.10	$12.69	$11.99
01295	0–100 mA	0.50	15.60	14.04	13.26	01314	0–10 amp	1.45	14.10	12.69	11.99
01296	0–200 mA	0.37	15.60	14.04	13.26	01315	0–15 amp	1.05	14.10	12.69	11.99
01303	0–300 mA	0.48	15.60	14.04	13.26	01316	0–20 amp	1.04	14.10	12.69	11.99
01304	0–500 mA	0.53	15.60	14.04	13.26	01317	0–25 amp	1.50	14.10	12.69	11.99
01307	0–750 mA	0.37	15.60	14.04	13.26	01318	0–30 amp	1.10	14.10	12.69	11.99
01308	0–1 amp	0.42	14.10	12.69	11.99	01319	0–40 amp	1.09	14.10	12.69	11.99
01309	0–2 amp	0.54	14.10	12.69	11.99	01321	0–50 amp	1.90	14.10	12.69	11.99
01311	0–3 amp	0.66	14.10	12.69	11.99						

Additional Controllers on Pages 431, 442 and 443

Simpson METER RELAYS AND PANEL METERS

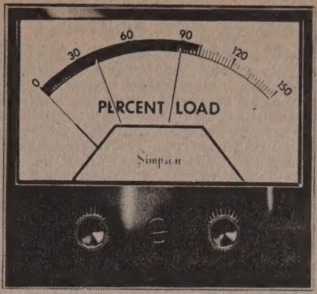
INSTRUMENTS THAT STAY ACCURATE

4½" MOTOR-LOAD METER RELAYS

Motor-load meter relays for monitoring motor current for overload and/or no-load conditions; hence meter is protected from costly burn-outs or other damages. Scale on 0–150% ranges are green (0–100%) and red (100–150%); scales on other ranges show motor load in AC amps.

		Single Control-Point‡		Double Control-Point	
Scale	Rating	Model	Net Each	Model	Net Each
0–150%*	10 VAC	21298	$132.75	21299	$164.40
0–150%†	5 amp AC	21296	135.45	21297	167.40
0–1 amp*	10 VAC	21301	136.20	21300	166.80
0–3 amp*	10 VAC	21303	136.20	21302	166.80
0–10 amp*	10 VAC	21305	136.20	21304	166.80
0–25 amp*	10 VAC	21307	136.20	21306	166.80
0–40 amp*	10 VAC	21309	136.20	21308	166.80
0–50 amp†	5 amp AC	21311	138.00	21310	169.80
0–100 amp†	5 amp AC	21313	138.00	21312	169.80
0–150 amp†	5 amp AC	21315	138.00	21314	169.80
0–200 amp†	5 amp AC	21317	138.00	21316	169.80
0–250 amp†	5 amp AC	21319	138.00	21318	169.80
0–300 amp†	5 amp AC	21321	138.00	21320	169.80
0–400 amp†	5 amp AC	21323	138.00	21322	169.80
0–500 amp†	5 amp AC	21325	138.00	21324	169.80

*Use with Model 186 current transformer. †Use with donut type current transformer. ‡High-limit.



SPECIFICATIONS

Calibration Accuracy: ±2% of full scale.

Control Points Adjustment: 0–100% of arc for single; 0–95% of arc for double low-limit; 5–100% of arc for double high-limit; all controls adjustable to within 4° of each other.

Switching: Within 1% of indication.

Differential: "On", "Off" difference is within 0.5% of full scale.

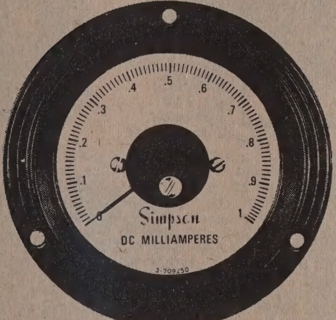
Contacts/Output Relay: DPDT relay contacts for each control point; each set of contacts rated at 10 amps, 115 VAC.

Movement: Self-shielding annular.

Power: 115 VAC, 50–500 Hz.

Case: Sealed metal case, glass window.

250° LONG-SCALE METERS



Designed for applications that require high-accuracy readings, 250° panel meters provide more than double the scale length of the standard 90° or 100° movements. They are self-shielded, permanent magnet, moving coil instruments with non-magnetic pivots and spring-backed jewels. Cases are sealed per MIL-M-10304. External front access zero adjust. Red, knife edge type pointer. **Accuracy:** DC, 2% of full scale; AC, 3% of full scale. **Scale Length:** 4.77" for 3½" meters; 6.54" for 4½" meters.

DC MICROAMMETERS

		3½" Model 2523		4½" Model 2524	
Range	Resis., Ohms	Model	Net Each	Model	Net Each
0–50 μA	8000	17970	$54.00	17980	$57.15
0–100	4200	17971	52.05	17981	55.20
0–500	340	17972	47.10	17982	50.25

DC MILLIAMMETERS

0–1 mA	135	17973	$44.10	17983	$47.25
0–10	10	17974	44.10	17984	47.25
0–500	0.2	17975	46.20	17985	49.35
1–0–1	....	17996	44.10	17997	47.25

DC AMMETER

0–10 V	.005	17976	$46.20	17986	$49.35

DC MILLIVOLTMETERS

0–50 mA	10	17977	$46.35	17987	$49.50

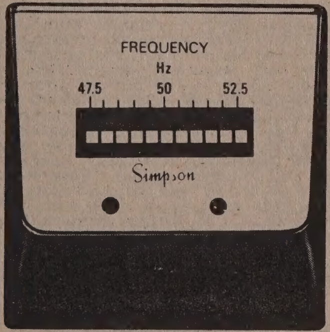
AC VOLTMETERS—RECTIFIER TYPE

		3½" Model 2543		4½" Model 2544	
Range	Resis., Ohms/Volt	Model	Net Each	Model	Net Each
0–10 V	2000	17990	$58.05	17995	$61.20
0–150	2000	17978	58.05	17988	61.20
0–300	2000	17979	58.05	17989	61.20

AC AMMETERS

The 0–10 VAC rectifier type voltmeters above may be used with current transformer Model 186 to provide 17 common AC ammeter ranges from 0–50 mA to 0–50 amps. Prices on request.

RESONANT REED-TYPE FREQUENCY METERS



Frequency meters use tuned steel reeds for indicating AC frequency. Vibrating (resonant) reed is both the measuring and indicating element. Accuracy is virtually unaffected by wide changes in signal magnitude, phase or waveform and is basically dependent on only one component, the reed, whose calibration is inherently stable. With one moving part, construction is simple and sturdy. **Frequency:** 50, 60 or 400 Hz nominal. **Number of Reeds:** 11 (general purpose); 21 (high resolution). **Accuracy:** ±0.3% of mid-scale. **Temperature Coefficient:** −0.017% per °C max. **Operating Voltage:** 100 to 150 VAC. **Power Consumption:** 2 watts max. **Power Required:** 2 VA.

3½" CENTURY MODEL 2163

Model	Hz Rating	No. of Reeds	Hz Between Reeds	Net Each
03493	45–50–55	11	1	$44.10
03490	47.5–50–52.5	11	.5	46.20
03496	55–60–65	11	1	44.10
03491	57.5–60–62.5	11	.5	46.20
03492	380–400–420	11	4	48.30
03494	55–60–65	21	.5	52.50
03495	380–400–420	21	2	55.65

3½" WIDE-VUE MODEL 1367

03506	45–50–55	11	1	$44.10
03507	47.5–50–52.5	11	.5	46.20
03508	55–60–65	11	1	44.10
03509	57.5–60–62.5	11	.5	46.20
03510	380–400–420	11	4	48.30
03511	55–60–65	21	.5	52.50
03512	380–400–420	21	2	55.65

3½" ROUND MODEL 65

03520	45–50–55	11	1	$44.10
03521	47.5–50–52.5	11	.5	46.20
03522	55–60–65	11	1	44.10
03523	57.5–60–62.5	11	.5	46.20
03524	380–400–420	11	4	48.30
03525	55–60–65	21	.5	52.50
03526	380–400–420	21	2	55.65

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE

MODEL 408 PORTABLE ILLUMINATION LEVEL METER

Model 408 illumination level meter for a wide range of measurements of illumination intensity under natural and artificial lighting conditions. By use of an accessory tube, it can also measure luminance of self-luminous or illuminated by ambient light surfaces. It can also serve as exposure meter with an appropriate table. **Ranges:** 0–15/50/150/500 foot candles; 0–1500/5000/15000/50000 foot candles with x 100 slip-on extension filter. **Light Sensitive Element:** 1.8″ dia. selenium photocell corrected to eye response. **Luminance Measurement:** Using slip-on x 2 tube ranges, 0–300/1000/3000/10000 cd/m²; tube aperature, 1.52″ dia.; test area diameter, 1.7 times distance. **Scale:** Longest scale arc, 2.8″; shortest scale arc, 1.92″. **Accuracy:** ±5%. **Size:** 3.2″ w. x 1.6″ d. x 4.6″ h. Weight, .62 lb.

Simpson Model 408 Illumination Meter—With remote senser, filter x 100 range extension, tube for luminance measurement, high impact plastic carrying case and instruction manual. Net Each..**$130.00**

MODEL 410 PORTABLE PHOTO TACHOMETER

Model 410 measures the speed of motors, generators, machines and rotating parts of all kinds up to maximum speed of 50,000 RPM without making contact with the rotating body. Horizontal working position. **Ranges:** 1500–5000–15000–50000 rpm. **Accuracy:** ±2.5% FS. **Operating Temperature:** 0 to 40° C. **Pick-Up Head Sensitivity:** From 0.2″ to 2″ with light marking on dark background or reverse; from 2″ to 12″ with reflective marking on non-reflective background or reverse. **Input Resistance:** Greater than 10,000 ohms. **Movement:** Core magnet movement with pivot spring loaded suspension. **Power Required:** Indicating instrument, one 9 volt battery; pick-up head, two 1.5 volt batteries. **Size:** Indicating instrument, 3.6″ w. x 1.77″ d. x 5.98″ h.; pick-up head, 1.42″ w. x 1.9″ d. x 8.0″ h. Weight, indicating instrument .9 lbs. and pick-up head of .7 lbs.

Simpson Model 410 Photo Tachometer—Complete with batteries and instruction manual. Net Each..................**$190.00**

MODEL 885 SOUND LEVEL METER

- **SETS THE PERFORMANCE STANDARDS FOR MEASURING NOISE AND SOUND LEVELS, INDOORS OR OUT**
- **MEETS O.S.H.A. AND WALSH-HEALY REQUIREMENTS**

Quickly, accurately measures noise (or sound level) anywhere in accordance with O.S.H.A. and Walsh-Healy requirements. Helps check PA installations, small auditoriums, industrial acoustics, outdoor speakers, municipal noise. Simple and easy to operate, this rugged instrument offers all solid state reliability. Has built-in tripod mount and optional safety wrist strap. Output jack permits use with recorders and analyzers. Rugged, calibrated ceramic microphone. Full coverage, 40 to 140 dB with A, B and C weightings. Conforms to ANSI standard S1.4-1971, Type 3. Comes complete with two 9-volt batteries which provide 50 hours operational life. **Sound Level Range:** 40–140 dB in 10 dB increments; 20 μNewtons/m² as 0 dB reference. **Weighting:** 3 selectable networks for A, B or C curves per ANSI S1.4, Type 3. **Accuracy:** Meets requirements of ANSI S1.4, Type 3. **Meter:** 0–100 μA full scale, taut band movement; 2½″ dial has end marks −5 dB to +10 dB. **Response Speed:** Selectable fast or slow modes as required by ANSI S1.4-1971, Type 3. **Output:** 1.2 V rms open circuit for full scale meter indication; source impedance, 620 ohms; connector is Switchcraft 850 min. phone jack. **Harmonic Distortion:** Less than 0.5% (0.1% typical), 32–8,000 Hz (C weighting, meter at full scale). **Calibration:** Adjustable with screwdriver from front panel; requires calibrated sound pressure source coupled to the mike. **Magnetic Field Influence:** 50 or 60 Hz field of 1 Oersted (80 A/meter) will cause approx. 45 dB indication with C weighting when meter is oriented for maximum sensitivity to the field. **Temperature Range:** −10° C to +50° C, operating; −40° C to +60° C, storage with batteries removed. **Temperature Coefficient of Sensitivity:** −0.01 dB/° C at full scale meter indication. **Humidity:** 0 to 90% RH, operating. **Power Required:** Two 9-volt batteries (Burgess 2U6 or equiv.) supplied. **Size:** 3.63″ w. x 2.09″ d. x 5.38″ h. molded high impact, gray plastic case; internally shielded with electronic circuit packaged on flexible PC board. Brass insert on case bottom threaded ¼″-20 for tripod. Weight, 1 lb., nominal.

Simpson Model 885 Sound Level Meter—With batteries and operator's manual. Net Each..........................**$250.00**
Simpson Model 00575 Carrying Case—Net Each..... **9.50**
Simpson Model 00576 Safety Wrist Strap—Net Ea... **3.00**

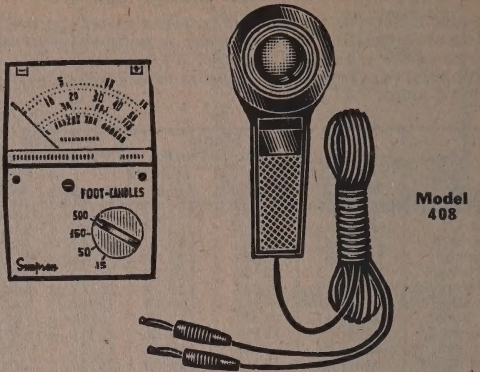
MODEL 889 SOUND LEVEL CALIBRATOR

Sound level calibrator is used to calibrate the ceramic microphone on Model 885 Sound Level Meter. This tester is completely self-contained, features a single fumble-free control and yet provides a precise 1000 Hz sound-pressure level. Built-in LED indicator checks for adequate battery voltage. **Frequency:** 1000 Hz. **Pressure Level:** 114 dB ref. 20 μN/m². **Accuracy:** ±1 dB at 23° C and 760 mm mercury pressure. **Temperature Range:** 0 to +40° C operating. **Humidity:** 95% RH and +30° C. **Power:** 9-volt battery operation. **Size:** 5″ lg. x 2¼″ dia. Weight, 1 lb.

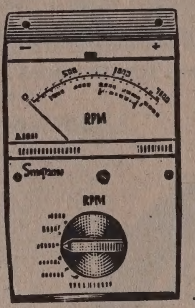
Simpson Model 889 Sound Level Calibrator—Complete with batteries, adjusting screwdriver and operator's manual. Net Each..**$95.00**

SPECIAL COMBINATION PACKAGE

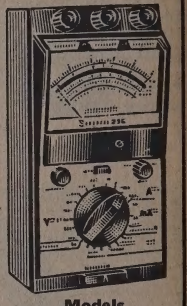
For increased convenience on and off locations for fast and accurate measurements. Includes one Model 885 sound level meter, one Model 889 calibrator, three spare 9 V batteries, one calibrator adjusting screwdriver and one wrist strap. Protective case included.
Simpson No. 12609 Combination Package—Net Each .**$345.00**



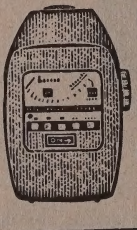
Model 408



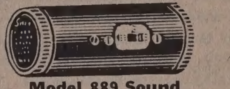
Model 410 Photo Tachometer



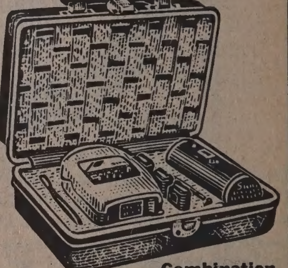
Models 256, 257 Multi-Tester



Model 885 Sound Level Meter



Model 889 Sound Level Calibrator



Combination Package

MODELS 256 AND 257 MULTI-TESTERS

MODEL 256 MULTI-TESTER

Compact tester has built-in capacitance and high megohm ranges. The high votage necessary is supplied from an external source (line voltage for AC). Overload circuit breaker protects all ranges except 100 volts and higher. Sensitivity of 25,000 ohms/volt DC, 2000 ohms/volt AC. **Accuracy:** ±1.0% DC, ±1.5% AC. **DC Volts:** 0–0.1–0.5–2.5–10–25–100–250–500–1000–5000. **AC Volts:** 0–0.5–2.5–10–25–100–250–500–1000–5000. **DC Current:** 0–100 μA; 0–0.5–2.5–10–50 mA; 0–0.25–1–5 amps. **AC Current:** 0–0.5–2.5–10–50 mA; 0–0.25–10–50 amps. **DC Resistance:** Rx1 (30 ohms center scale), Rx1K, Rx10K, Rx1 meg (with external 100–130 V DC supply). **AC Resistance:** Rx1 meg (1 megohm center scale), with external 100–240 VAC supply. **Capacitance:** 100 pF to 20,000 pF; 2000 pF to 5 μF; external AC supply needed. **Decibels:** −34 to −4, −20 to +10, −8 to +22, 0 to +30, +12 to +42, +20 to +50, +26 to +56. **Output Ranges:** 0.1 μF capacitor in series with AC voltage ranges, 10–250 VAC. **Size:** 4 5/16 w. x 3 5/16 d. x 9 5/16″ h.

Simpson Model 256—With test leads, batteries and manual. Net Each...................................... **$150.00**

MODEL 257 MULTI-TESTER

Similar to Model 256, with 100,000 ohms/volt DC sensitivity (20,000 ohms/volt AC). **Accuracy:** ±1.5% DC, ±2.5% AC. **DC Volts:** 0–0.1–0.5–2.5–10–25–100–250–1000–5000. **AC Volts:** 0–10–50–250–1000. **DC Current:** 0–10–50–250 μA; 0–1–5–25–100 mA; 0–1 amp. **DC Resistance:** Rx1 (30 ohms center scale), Rx1K, Rx100K, Rx10 meg (external 100–140 VDC supply needed). **AC Resistance:** Rx1 meg (1 meg center scale); external 100–240 VAC supply needed. **Capacitance:** 2000 pF to 5 μF (external 100–240 VAC supply needed. **Decibels:** −8 to +22, +6 to +36, +20 to +50. **Output Ranges:** 0.1 μF capacitor in series with AC voltage ranges, 10–250 VAC. **Size:** 4 5/16″ w. x 3 5/16″ d. x 9 5/16″ h.

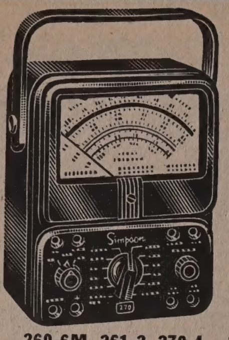
Simpson Model 257—With test leads, batteries and manual. Net Each...................................... **$95.00**

Simpson Test Equipment, Cases

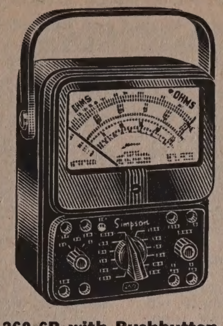
INSTRUMENTS THAT STAY ACCURATE

260® VOM'S WITH TAUT BAND METER MOVEMENT

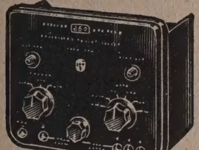
- 260 series 6
- 260-6M with mirror scale
- 260-6P with push-button overload protection
- 261-2 with ±1.5% DC accuracy and mirror scale
- 250 with 50 mV drop for solid-state circuits
- 255 with temperature range
- 270-4 with ±1.25% DC accuracy, temperature compensation, mirror scale



260-6M, 261-2, 270-4 with Mirror Scale



260-6P with Pushbutton Overload Protection



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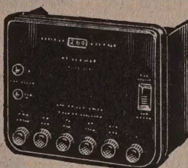
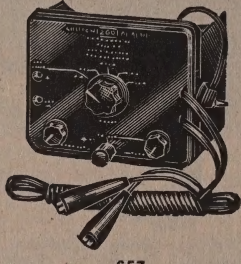


653, 661



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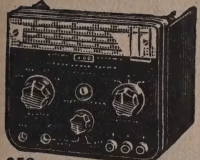

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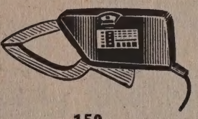


150

Features: Self-shielding annular taut band meter movement; increased linearity and stability; input protected with internal 1-amp fuse; greater repeatability; mirror scale with a knife-edge pointer on three models. **Other Features:** Polarity reversing switch for easier, faster DC measurements; no lead reversing. Easy-to-read scales with black and red spread-out for faster, more positive reading. Less circuit loading; AC voltage range sensitivity of 5,000 ohms/volt. Adjust-A-Vue handle for prop-up convenience. Available in roll-top case. Come complete with leads and manual. **AC Volts (5,000 ohms/V):** 0–2.5–10–50–250–500–1000 volts (0.1 μF capacitor in series through 250 volts). **DC Volts (20,000 ohms/V):** 0–.25–1–2.5–10–50–500–1000 volts. **DC Current:** 0–50 μA (250 mV drop); 0–1–10–100–500 mA; 0–10 A (250 mV drop). **dB Scale (1 mW-600 ohms):** −20 to +10; −8 to +22; +6 to +36; +20 to +50. **Resistance:** 0–2K ohms–200K ohms–20 megs (Rx1–x100–x10K); 12, 1200 and 120K ohms centers, respectively. **Scale Length:** 4.2". **Size:** 5¼" x 7" x 3⅛". Shpg. Wt., 6 lbs.

260-6, 260-6M, 260-6P

Lowest priced models of the series, features good accuracy with full range coverage. Choice of scale: 260-6 comes with standard scale; 260-6M has mirror scale. **Accuracies:** AC volts ±3% F.S., 0–2.5 to 0–1000. DC volts ±2% F.S. through 1000. DC current ±1.5% F.S. through 50 μA; ±2% 0–1 mA to 0–10 A. Resist., ±2.5° of arc, Rx1; ±2.0°, Rx100 and Rx10,000.

Simpson 260-6—With standard scale. Net Each.................. **$72.50***
Simpson 260-6M—With mirror scale. Net Each.................. **75.50***
Simpson 260-6P—Same as 260-6, but features protective overload circuit with reset button that pops out when an overload is present. Net Each.... **$104.50***

MODEL 261-2 HIGH ACCURACY VOM

With mirror scale, knife-edge pointer and special calibration circuit to increase accuracy. Diode overload protection prevents movement burnout even on 200,000% overload. **Accuracies:** AC volts ±3% F.S., 0–2.5 to 0–1000; ±4% F.S., 0–5000. DC volts ±1.5% F.S. through 1000; ±2.5%, 0–5000. DC current ±1.0% F.S., 0–50 μA; ±1.5%, 0–1 mA to 0–10 amps. Resistance ±2.0° of arc, Rx1; ±1.5°, Rx100 and Rx10,000.

Simpson Model 261-2—Net Each.............................. **$79.00***

MODEL 270-4 HIGH ACCURACY VOM

Features self-shielded annular meter movement with taut band; temperature compensated circuitry. Mirror scale with knife-edge pointer. **Accuracies:** AC volts ±2.0% F.S., 0–2.5 to 0–1000. DC volts ±1.25% F.S. through 1000. DC current ±0.75% F.S., 0–50 μA; ±1.25% F.S., 0–1 mA to 0–10 amps. Resistance ±1.5° of arc, Rx1; ±1.0°, Rx100 and Rx10,000.

Simpson Model 270-4—Net Each.............................. **$85.00***
***For Roll-Top Case Version**—Add suffix **RT** (i.e., 260-6P**RT**). Add.... **7.00**

MODEL 250 50-mV DROP VOM

Same as 260-6 except as follows: **AC/DC Volts:** Added ranges of 0–0.050 VDC; 0–500 VAC/DC. **Current:** Same but 50 mV drop on all ranges, plus 250 mV drop on 0–50 μA range only (±1% F.S. accuracy). Diode protected.

Simpson Model 250—With standard scale. Net Each.... **$77.50**

ACCESSORIES FOR ABOVE VOM'S

Model	Description	Net Each	Model	Description	Net Each
0248†	Roll-top case only	$14.00	1818	Leather carrying case	$14.50
0507†	10 kV high-voltage probe	20.00	0805	Ever-Redy vinyl case	17.50
0161†	10 kV high-voltage probe	20.00	0549	Same, but with storage	20.00
0508†	25 kV high-voltage probe	20.00	0574	Snap-on probe case, 0549	6.00
0509†	50 kV high-voltage probe	20.00	0163‡	5' thermocouple lead	7.00
0505	5 kVAC safety probe	5.00	7500†	Banana plugs; allig. clips	3.50
0506	5 kVDC safety probe	5.00	7538†	Banana plugs; test prods	4.00

†Also used with older 260-3 VOM. ‡For Model 255 only.

"ADD-A-TESTERS" 260 ADAPTER SERIES

Converts Simpson 260 VOM family (250, 255, 260, 261, 270-3) into nine different testers with a quality previously found only in individual pieces of test equipment. Just plug in one adapter, and you have added another application; no complicated connections. Take only ½ to ⅓ storage space of individual testers. Each combination of Add-A-Tester and 250, 255, 260, 261, 270-3 is self-contained and self-powered. All adapters provide for normal usage of basic tester without disconnecting adapter. Cannot be used with roll-top cased models.

MODEL 650 TRANSISTOR TESTER

Beta Ranges: 0–10–50–250, (F.S.). **Beta Accuracy:** Adapter, ±3%; with 250, 255 or 260, ±5% (nominal); with 261 or 270, ±4% (nominal). **Ico Range:** 0–100 μA. **Ico Accuracy:** Adapter, ±1%; with 260, ±3% (F.S.); with 261 or 270, ±2% (F.S.).

Simpson Model 650 Adapter—Net Each. . **$47.00**
Simpson Model 7545 Test Lead—Net Ea. . . **2.25**

MODEL 651 DC VTVM

Voltage Ranges: 0–.5/1.0/2.5/5.0/10/25/50/100/250/500. **Accuracy:** ±1%; with 250, 255 or 260, ±3% (F.S.); with 261 or 270, ±2% (F.S.). **Input Impedance:** More than 10 megs, all ranges.

Simpson Model 651 Adapter—Net Each. . **$52.00**
Simpson Model 733 Ground Lead—Net. . . **3.00**

MODEL 652 TEMPERATURE TESTER

Temperature Range: −50° F to +100° F; +100° F to +250° F. **Accuracy:** ±2° (nominal) with 250, 255, 260, 261 or 270. **Sensing Element:** Thermistor. Three lead positions provided.

Simpson Model 652 Adapter—Net Each. . **$51.00**
Centigrade Scale, add.................. **1.95**

MODEL 653 AC AMMETER

Ranges: 0–0.25/1/2.5/12.5/25 amps. **Accuracy:** Adapter, ±2%; with 250, 255, 260, 261 or 270, ±3% F.S. **Frequency Range:** 50–3,000 Hz.

Simpson Model 653 Adapter—Net Each. . **$33.00**

MODEL 654 AUDIO WATTMETER

Load Ranges: 4, 8, 16, 600 ohms. **Wattage:** Continuous—25 watts (8, 600 ohms); 50 watts (4, 16 ohms). Intermittent—50 watts (8, 600 ohms); 100 watts (4, 16 ohms). **Accuracy:** Adapter, ±5%; with 250, 255 or 260, ±10% (nominal); with 261 or 270, ±7% (nominal). **Direct Reading Scale:** From 17 microwatts to 100 watts.

Simpson Model 654 Adapter—Net Each. . **$34.00**

MODEL 655 MICROVOLT ATTENUATOR

Ranges: 2.5 microvolts to 250,000 microvolts, continuously variable in decade steps. **Frequency:** DC to 20 kHz. **Accuracy:** Adapter, ±½ dB; with 250, 255, 260, 261 or 270, ±1 dB.

Simpson Model 655 Adapter—Net Each. **$30.00**

MODEL 656 BATTERY TESTER

Checks all radio and hearing aid batteries up to 90 volts at the manufacturer's recommended load, or any external load. **Accuracy:** Adapter, ±1%; with 250, 255 or 260, ±3% (F.S.); 261 or 270, ±2% (F.S.).

Simpson Model 656 Adapter—Net Each. . **$30.00**

MODEL 657 MILLIOHMMETER

Ideal for accurate measurements of low resistance windings in meters, generators and transformers; ammeter and milliammeter shunts; and contact resistance in switches and relays. **Ranges:** 0–0.1/0.25/0.5/1.0 ohm. **Accuracy:** Adapter, ±½%; with 260, ±2% (F.S.); with 261 or 270, ±1½% (F.S.).

Simpson Model 657 Adapter—Net Each. . **$54.00**

MODEL 661 DC AMMETER

Dependable, portable DC ammeter for use in testing automotive accessories and electrical systems, DC supplies, industrial DC control systems, welding, etc. **Range:** 0–1/2.5/5/10/25 amps. **Accuracy:** Adapter, ±½%; with 250, 255 or 260, ±2% (F.S., nominal); with 261 or 270, ±1½% (F.S., nominal).

Simpson Model 661 Adapter—Net Each. . **$33.00**

MODEL 150 CLAMP-ON AMMETER

AC ammeter adapter permits current measurement without breaking circuit. Plugs into any VOM on this page. Reads on 0–2.5 VAC scale. **Ranges:** 0–5–10–25–50–100–250 amps AC.

Simpson Model 150—Net Each **$25.00**

MODEL 255 WIDE TEMP., 50-mV DROP VOM

Same as 260-6 except as follows: **AC/DC Volts:** Added 0–0.05 V and 0–1 VDC ranges. **Current:** 0–50 μA (50 and 250 mV drop; ±1% F.S. accuracy); 0–1–10–100–500 mA (50 mV drop); to 250 amps AC using adapter. No dB scale. **Temp. Range:** +100° F to +1050° F. With leads, prods and 5' thermocouple lead. Diode protected.

Simpson Model 255—With standard scale.
Net Each..................................... **$90.00**

METER SAFE/GUARD

Use with Series 1, 2, 3 or 4 Simpson 260 or any other 20,000 ohms/volt VOM. Installs instantly to prevent damage to meter movement regardless of polarity with currents up to 200 mA, AC or DC.

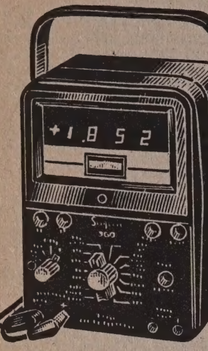
Simpson Model 12621—Net Each. **$2.25**

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE

MODEL 360 PORTABLE DIGITAL VOM

- **Unique Analog Output and Indication**
- **AC Line or Battery Operation**



Model 360

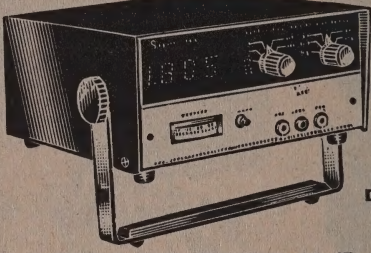
Solid state IC designed meter for high accuracy measurements. Measures AC and DC current and voltages, conventional and "low-power" ohmic resistance on 29 popular ranges including "low-power" ohms. Analog indicator for scanning of nulls and peaks; analog output for interfacing with chart recorders. Up down integration analog/digital conversion assures superior stability, accuracy and noise immunity. Adjust-A-Vue handle. RANGES: **DC Volts (Input Impedance):** 200 mV (100 megohms); 2 V (1000 megohms); 20 V (10 megohms); 200 V (10 megohms); 1000 V (10 megohms); with accuracy of ±(0.25% reading +1 digit). **AC Volts:** 200 mV; 2 V; 20 V; 200 V; 600 V; all ranges on 1 megohm (15 pF) input impedance and accuracy of ±(0.5% of reading +1 digit). **DC Current:** 20 μA; 200 μA; 2 mA; 20 mA; 200 mA; 2 A; 10 A; with accuracy of ±(0.5% of reading +1 digit). **AC Current:** 200 μA; 2 mA; 20 mA; 200 mA; 2 A; 10 A; with accuracy of ±(1.0% of reading +1 digit). **Resistance:** 200 ohms (low-power); 2K ohms (low-power); 20K ohms; 200K ohms; 2 megohms; 20 megohms.
SPECIFICATIONS: **Temperature Range:** Operating, 0 to +40° C; storage, −40° C to +60° C. **Numeric Display:** 3½ digit, 7-segment, 0.33″ high, LED type, non-blinking with storage. **Conversion Rate:** 5/sec nom. **Overrange Indication:** Automatic beyond 1999, with lower half of the "1" digit flashing. **DC Polarity Selection:** Automatic with "+" or "−" indications. **Analog Display:** 50–0–50 μA moving coil indicator. **Power Required:** 117/234 VAC, 50 to 400 Hz or 4 nickel cadmium "C" size cells (not supplied). **Size:** 5.4″ w. x 3.75″ d. x 7.2″ h. Weight, 4 lbs. (without batteries) and 4.5 (with batteries).

Simpson Model 360 Digital VOM—With test leads, AC line cord (less batteries) and operator's manual. Net Each.... **$275.00**

Simpson Model 360—220 VAC, 50 Hz operation (less batteries). Net Each.................................. **$280.00**

Simpson No. 00815—Carrying case for 360. Net Each **19.50**

MODEL 460 PORTABLE DIGITAL VOM



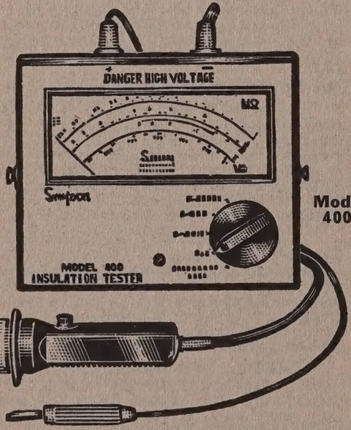
Model 460 Digital VOM

Combines high accuracy, multiple range testing with non-blinking 3½ digit numerical display and front panel analog meter readout. Ideal for field or lab use, operates on self contained batteries or line current. Batteries are rechargeable when plugged into AC line. Instant readout, no warm up time required; automatic + or − and overrange indication. Peaks and nulls shown by ½″ edgewise analog meter. Measures 26 switch-selected ranges; DC and AC voltage and current, and resistance. Unit is fused for AC line protection. Features include: Dual purpose handle, convenient line cord storage compartment and color-coded input jacks for instant visual recognition.
RANGES: **DC Volts:** 0–200 mV; 0–2–20–200–1000 V with ±0.1% reading accuracy, ±1 digit; input impedance, 10 megs except 200 mV, 100 megs and 2 V, 1000 megs. **AC Volts:** 0–200 mV; 0–2–20–200–1000 V with ±0.5% reading accuracy, ±1 digit; input impedance, 1 megohm; frequency range, 40 Hz to 10 kHz (±1% accuracy for 10 kHz to 20 kHz). **DC Current:** 0–200 μA; 0–2–20–200 mA (±0.2% reading accuracy, ±1 digit); 0–1000 mA (±0.5% accuracy); voltage drop, 0.2 V. **AC Current:** 0–200 μA; 0–2–20–200 mA (±0.7% reading accuracy, ±1 digit); 0–1000 mA (±1.0% accuracy); voltage drop, 0.2 V. **Resistance:** 0–200–2K–20K–200K–1000K ohms (±0.5% reading accuracy, ±1 digit); 0–20 megohms (±1% accuracy).
SPECIFICATIONS: **Temperature Range:** +10° C to +40° C. **Common Mode Rejection:** 80 dB min. at 60 Hz with 1K ohms unbalance. **Normal Mode Rejection:** 35 dB min. at 60 Hz. **Numeric Display:** 5 per second. **Power Required:** 10 VA nom., 105–125 VAC, 50/60/400 Hz; 230 VAC available on order. For battery operation use 4 Ni-Cad "D" cells of 1.25 V each; 15 VA nom. when battery charging with unit on. **Size:** 8½″ w. x 7⅞″ d. x $4\frac{1}{64}$″ h. Wt., 6 lbs., 4 oz.

Simpson Model 460 Portable Digital VOM—Complete with instruction manual, less batteries. Net Each........... **$375.00**

BATTERY OPERATED INSULATION TESTER

MODEL 400 INSULATION TESTER

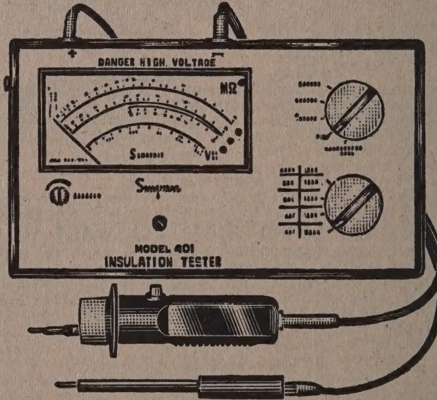


Model 400

Model 400 allows insulation measurements to be made on systems operating at up to 500 V. It also provides facilities for voltage measurements on DC and AC systems up to 600 V as well as continuity tests in low resistance circuits. Built-in indicator lamp in the test probe provides the check for insulation. Indicator lamp goes out whenever the insulation resistance is less than 1 milliohm. When continuity tests on low resistance circuits are being made, the indicator lamp in the test probe goes out for resistance of 500 ohms or less. **Accuracy:** ±1.5% FS. **Ranges:** 0 to 0.4 megohm; 0.01 to 5 megohms; 2 to 200 megohms; all ranges at open circuit voltage of 650 V and resistance of 0.15 megohm (0.25 megohm for 0 to 0.4 megohm range). **Voltage Scale:** 0 to 600 VAC/VDC with 0.2 megohm internal resistance. **Test Voltage:** 2000 volts. **Power Required:** 9 volts (six 1.5 volt batteries). **Size:** 4.6″ w. x 5.6″ d. x 3.2″ h. Weight, 3 lbs.

Simpson Model 400 Insulation Tester—Includes batteries, carrying strap, permanently attached connecting leads 3 ft. long with banana plug, test probe and instruction manual. Net.. **$185.00**

MODEL 401 INSULATION TESTER



Model 410

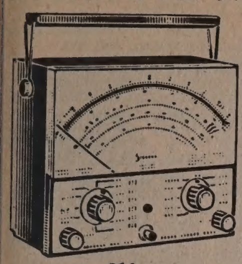
Model 401 is a battery operated instrument that tests the insulation resistance of equipment, electrical plants, etc. with voltage ratings up to 1000 VAC and 1500 VDC. It also measures AC/DC voltages up to 1000 volts and makes the continuity tests with optical indication.
RANGES: **Test Voltage 100 V:** 0 to 0.08 megohm (0.05 megohm internal resistance); 0.02 to 1 megohm (0.03 megohm internal resistance); 0.4 to 40 megohms (0.03 megohm internal resistance). **Test Voltage 250 V:** 0 to 0.2 megohm (0.125 megohm internal resistance); 0.05 to 2.5 megohms (0.075 megohm internal resistance); 1 to 100 megohms (0.075 megohm internal resistance). **Test Voltage 500 V:** 0 to 0.4 megohm (0.25 megohm internal resistance); 0.01 to 5 megohms (0.15 megohm internal resistance); 2 to 200 megohms (0.15 megohm internal resistance). **Test Voltage 1000 V:** 0 to 0.8 megohm (0.5 megohm internal resistance); 0.2 to 10 megohms (0.3 megohm internal resistance); 4 to 400 megohms (0.3 megohm internal resistance). Test voltage ranges are on rated current of 1 mA.
Accuracy: Resistance ranges, ±1.5% FS; voltage ranges, ±1.5% FS. **Power Required:** 9 VDC (six 1.5 volt batteries). **Size:** 9.6″ w. x 4.13″ d. x 5.3″ h. Weight, 4.9 lbs.

Simpson Model 401 Insulation Tester—Includes batteries, carrying strap, permanently connected leads with test probe and operator's manual. Net Each.......................... **$375.00**

Additional Digital Multimeters on Pages 482, 498 and 499

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE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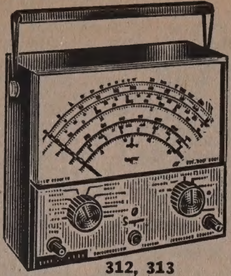
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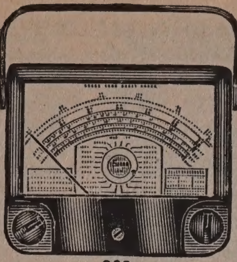
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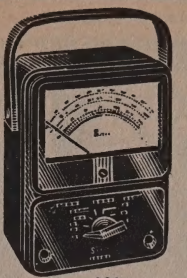
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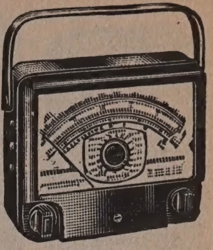

262-3, 269-3

MODEL 314 SOLID STATE AC-DC VOM

Most advanced solid state field effect VOM for general service use. Battery operated portable model accurately measures low-level voltages, current and semiconductor circuit resistances in low power ohms. **Accuracies:** ±2% of FS, DC; ±3% of FS, AC; ±3° arc, resistance. **AC Volts:** 0–0.01–0.03–0.1–0.3–1–3–10–30–100–300–1000; 10-meg input impedance; with probe multiplier on x10, 100-meg. **DC Volts:** 0–0.05–0.1–0.3–1–3–10–30–100–300–1000; 10-meg input impedance; with probe multiplier on x10, 100-meg. **Ohms:** Rx1, x10, x100, x1K; x10K, x100K, x1M; 10 ohms center and 1K ohms maximum on Rx1. **AC and DC Current:** 0–0.01–0.1–1–10–100–1000 mA; frequency response, 30 to 100,000 Hz shunted by 45 pF for AC; 100 mV voltage drop on all ranges except 1000 mA, 125 mV voltage drop. **dB:** −60 to +62 dB, eleven ranges. **Power Required:** One 1.5 "D" cell; two 1.5 V "AA" cells; one 9 V battery; all batteries replaceable through external access battery compartment at rear of instrument. **Size:** 7¾" x 6¾" x 4⅝". Weight, 5¼ lbs.

Simpson Model 314—With AC/DC ohms probe, batteries and instruction manual Net Each............ **$207.00**

MODEL 313 SOLID STATE AC-DC VOM

Portable instrument with VTVM features, VOM convenience. Operates for over 300 hours on 9-volt transistor battery, with high accuracy and high impedance. Rugged design with self-shielding movement, shock-proof and overload-protected. Fully protected voltage ranges. Reliable FET transistor input, 7" scale. Battery test position. Frequency and temperature compensation assure high accuracy of ±3% full-scale, AC and DC. **AC Volts:** 0–0.3–1–3–10–30–100–300–1000; 10-meg input impedance. **DC Volts:** 0–0.3–1–3–10–30–100–300–1000; 11-meg input impedance. **Response:** ±0.5 dB, 20 Hz to 100 kHz on ranges to 3 volts; 20 Hz to 20 kHz on ranges to 100 volts. **Ohms:** Rx1, x10, x100, x1K, x10K, x100K, x1M; 10-ohm center. **DC Current:** 0–0.1–1–10–100–1000 mA. **Size:** 7¾" x 6¾" x 3¾". Weight, 4¾ lbs.

Simpson Model 313—With leads, probe, manual. Net. **$138.00**

MODEL 312 VTVM

Up to 40% less circuit loading then conventional VTVM's; input resistance 16 megs instead of the usual 11. Easy-to-read 7" scale. Ideal for solid state tests with ½-volt range. **Accuracy:** ±3% FS, AC and DC; ±3° arc, resistance. **Frequency Response:** ±3%, 15 Hz to 3 MHz, thru 150 VAC; ±1 dB, 10 kHz to 250 MHz with RF probe; usable to 40 V rms. **DC Volts:** 0–0.5–1.5–5–15–50–150–500–1500 (16 megs imped.). **AC Volts:** 0–1.5–5–15–50–150–500–1500 V rms (1 meg min. imped.); 0–4–14–40–140–400–1400–4000 V p-p. **Resistance:** R x1, x10, x100, x1K, x10K, x100K, x1M; 10-ohm center. **Power:** 105/125 VAC, 50/60 Hz. **Size:** 7¾" w. x 6¾" h. x 3¾" d. Weight, 4¾ lbs.

Simpson Model 312—With probe and manual. Net . . **$107.50**

MODEL 263 AC-DC DUAL SENSITIVITY VOM

Overlapping ranges for greater accuracy; ±1½% DC and ±3% AC, full scale. Diode overload protection against burnout (even on 200,000% overload). External battery compartment for easy replacement; takes 1½-volt alkaline type for greater stability on low ohms scale. **AC Volts:** 0–2.5–7.5–30–150–750 at 10K ohms/volt; 0–5–15–60–300–1500 at 5K ohms/volt. **DC Volts:** 0–.15–.75–3–7.5–30–75–300–750–3000 at 20K ohms/volt; 0–.3–1.5–6–15–60–150–600–1500–6000 at 10K ohms/volt. **Output Ranges:** 0.1 µF capacitor in series thru 300 VAC. **Ohms:** 0–500–5K–50K–500K, 0–5–50 megs; 4.5 ohms center scale. **DC Current:** All ranges ±1½% accuracy. At 150 mV, 0–75 µA, 0–.75–7.5–75–750 mA and 0–7.5 amps; at 300 mV, 0–150 µA, 0–1.5–15–150 mA and 0–1.5–15 amps. **dB:** −20 to +75.5 dB, ten ranges. **Size:** 6" x 7¼" x 3". Net Weight, 4 lbs.

Simpson Model 263—With test leads & manual. Net . **$104.00**

MODEL 715 AC VTVM

High sensitivity VTVM for the audio field. **Accuracy:** ±5% of full scale. **Sensitivity:** 10 mV full scale on lowest range. **Frequency Response:** ±1 dB, 10–400,000 Hz. **Input Impedance:** 1 meg minimum at 1 kHz shunted by 25 pF. **Internal Multipliers:** ±1% precision resistors. **Volts:** 0–0.01–0.03–0.1–0.3–1–3–10–30–100–300 rms. **dB:** Total range, −52 to +52 dBm. **Zero dBm:** 1 mW in 600 ohms. **Scale:** −12 to +2 dB. **Input Power Required:** 110–125 V rms, 50–60 Hz at 10 watts. **Size:** 7½" x 5½" x 3". Wt., 3¾ lbs.

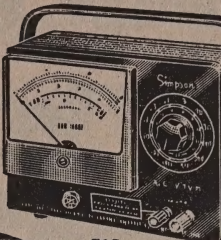
Simpson Model 715—Complete with manual and shielded input cable. Net Each...................... **$89.00**

MODEL 229 AC LEAKAGE TESTER

Tests 120 VAC appliances and equipment for current above the human "threshold of perception". Measures as low as 5 µA, detects shorts and near shorts. Overload protection. **Ranges:** 0–0.3–1–3–10 mA; 0–150 volts; battery test. **Accuracy:** ±2% at 60 Hz. **Input Impedance:** 1500 ohms, shunted by shaping network; 500K on voltage ranges. **Size:** 5¼" w. x 3⅛" d. x 7" h. Weight, 3 lbs.

Simpson Model 229—With test leads and manual. Net Each................................ **$95.00**

ACCESSORIES LISTED ON ANOTHER SIMPSON PAGE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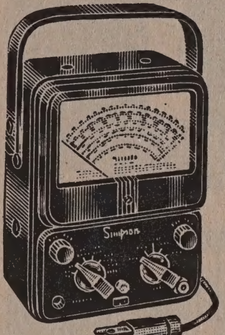
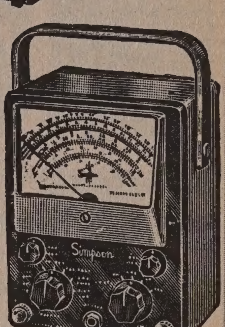

303-2


311-3

MODEL 262-3 AC-DC VOM

Compact design covers 33 ranges on easy-to-read 7" scale with repetitive accuracy. Diode overload protection. Self-shielded meter movement and spring-backed jewels. **AC Volts:** 0–3–8–40–160–400–800 at 5K ohms/volt and ±4% accuracy. **DC Volts:** 0–1.6–8–40–160–400–1600–4000 at 20K ohms/volt and ±3% accuracy. **Output Ranges:** 0.1 µF capacitor in series thru 160 VAC. **Ohms:** 0–500–5K–50K–500K; 0–5–50 megs; 4.5 ohms center scale. **DC Current:** ±3% accuracy, 0–80–160 µA; 0–1.6–16–160 mA; 0–1.6–8 amps. **dB:** −12 to +45.5 dB; four ranges. **Size:** 6" x 7¼" x 3". Net Weight, 4 lbs.

Simpson Model 262-3—With test leads; manual. Net.. **$90.00**

IMPROVED MODEL 269-3 AC-DC VOM

Self-shielded Taut-Band movement with spring-backed jewels; stops damage to pivots due to shock and vibration. External battery compartment for easy replacement. Input protected by 1.5-amp fuse. **AC Volts:** 0–3–8–40–160–400–800 at 5K ohms/volt and ±3% accuracy. **DC Volts:** 0–1.6–8–40–160–400–800–1600 (±2%)–4000(±3%) at 100K ohms/volt. **Output Ranges:** 0.1 µF capacitor in series thru 160 VAC. **Ohms:** 0–200–20K–200K; 0–2–20–200 megs; 12 ohms center scale. **DC Current:** ±2% accuracy 0–16–160 µA; 0–1.6–16–160 mA, 0–1.6–8 amps. **dB:** −12 to +45.5 dB; four ranges. **Size:** 6" x 7¼" x 3". Net Weight, 4 lbs.

Simpson Model 269-3—With test leads, 4000 VDC probe extension and manual. Net Each............ **$104.00**

MODEL 303-2 AC-DC VTVM

Features easy-to-read 4½" scale. **AC Volts:** 0–1.2–12–60–300–1200 (±5% FS). **DC Volts:** 0–1.2–12–60–300–1200 (±3% FS). **AF Volts:** 0–1.2–12–60. Frequency flat to 100 kHz on the three low AC ranges. **RF Volts:** 20 V max.; frequency 20 kHz to 100 MHz with RF probe. **Ohms:** 0–1K–100K; 0–1–10–1,000 megs (centers at 10, 1K, 10K, 100K and 10 megs, respectively). **dB:** −20 to +63; 5 ranges. **Input Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 5¼" x 7" x 3⅛". Net Weight, 4 lbs.

Simpson Model 303-2—Complete with VDC probe, VAC-ohm probe, ground lead and manual. Net Each.. **$95.00**

Simpson Model 303-2RT—In roll top case. Net Ea. . **$102.00**

Simpson Model 303-2 Dual—For 220/110 volts. Net. **101.00**

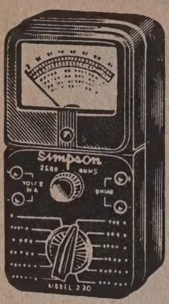
MODEL 311-3 AC-DC VTVM

High 22 meg DC input impedance reduces circuit loading. **AC Volts:** 0–1.5–5–15–50–150–500–1,500 rms (±5% FS). **Peak-To-Peak Volts:** 0–4–14–40–140–400–1,400–4,000. **DC Volts:** Same ranges as AC (±3% FS). **AF Volts:** Same ranges as AC (30 Hz to 110 kHz, ±5%). **RF Volts:** 0–1.5–5–15–50–150 with probe (50 Hz to 100 MHz, 0–150 V rms). **Frequency Response:** ±5% to 100 kHz; to 250 MHz with probe. **Ohms:** 0–1K–10K–100K; 0–1–10–100–1,000 megs (centers at 10, 100, 1K, 10K, 100K, 1 meg and 10 megs, respectively). **Input Power Required:** 105–125 VAC, 50–60 Hz. **Size:** 7½" x 5⅝" x 4½". Weight, 5 lbs.

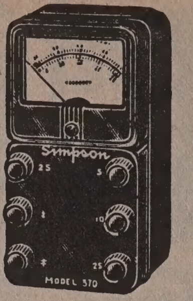
Simpson Model 311-3—With AC-DC ohms probe, ground lead and manual. Net Each................. **$95.00**

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE



230-2, 240-4



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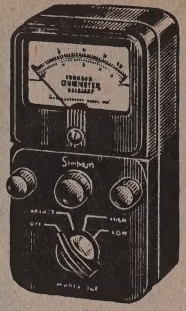

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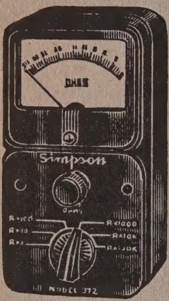

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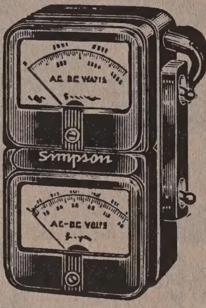


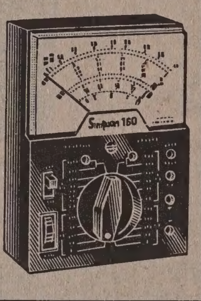
391, 392

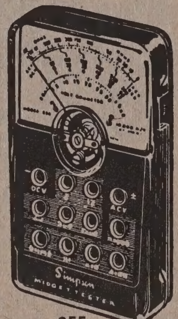
390

NEW... Improved Accuracy

160 Handi-VOM

Now ±2% DC and ±3% AC





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AC-DC VOLT-OHMMETERS

COMPACT MODEL 160 Handi-VOM

Small, lightweight model with sensitivity and range of full size VOM. Range selector and polarity reversing switches. Diode overload protection. **AC Volts:** 0–2.5–10–50–250–500–1000 at 5K ohms/volt. **DC Volts:** 0–.25–1.0–2.5–10–50–250–500–1000 at 20K ohms/volt. **Ohms:** 0–3000–30K–300K; 0–3–30 megs. **DC µA:** 0–50. **DC mA:** 0–1–10–100–500. **dB Scale:** −20 to +10; −8 to +22, +6 to +36, +20 to +50. **Accuracy:** ±3% FS, AC; ±2% FS, DC. **Size:** 4 9/16″ x 3 5/16″ x 1 9/16″. Net Wt., 12 oz.

Simpson Model 160—Complete with alligator clip leads and manual. Net Each........ $61.00

MODEL 355 MIDGETESTER®

Compact meter with 100 µA self-shielded core meter movement; 10,000 ohms/volt sensitivity. **AC Volts:** 0-3-12-60-300-1200. **DC Volts:** 0-3-12-60-300-1200. **Ohms:** 0-10K-100K; 0-1-10 megs., 120, 1.2K, 12K and 120K ohms center, respectively. **Accuracy:** ± 3% DC; ± 5% AC; ± 3° ohms. **Frequency Response:** Essentially flat to 10 kHz. **Movement:** Self-shielded core magnet permits use without interference from metals or magnetic fields. **Size:** 2¾″ x 4½″ x 1″. Net Weight, 8 oz.

Simpson Model 355—Complete with leads and manual. Net Each........ $50.00

ACCESSORIES FOR TESTERS ON THIS PAGE

Model	For Instrument	Description	Net Ea.
2055	160	Probe tip lead	$3.75
8375	230-2, 240-4, 372	Allig. clips and elbow terms.	3.50
8376	Micro-Testers	Allig. clips and spade terms.	4.00
8379	Micro-Testers	Test prods and spade terminals	4.00
8381	230-2, 240-4, 372	Test prods and elbow terminals	4.00
8418	390	Test cord assembly	9.00
8600	355	Test prods	3.75
2225	160	Carrying case	12.00
3011	Micro-Testers*	Leatherette-covered case	9.00
3413	391, 392	Leatherette-covered case	12.00
4299	Micro-Testers*	Ever-Redy leather case	11.00
6355	355	Ever-Redy leather case	6.00
8073	387	Ever-Redy vinyl case	12.00

*Except Models 391 and 392.

SIMPSON MICRO-TESTERS

General purpose, extra-compact test instruments available in a variety of models. **Size:** 3″ x 5⅞″ x 2½″. Net Wt., 1½ lbs.

MODEL 240-4 AC-DC VOLT-OHM-MILLIAMMETER

For high voltage applications. Sensitivity, 1,000 ohms/volt. **AC Volts:** 0-15-150-750-3000. **DC Volts:** 0-15-75-300-750-3000. **Ohms:** 0-3K-300K; 30 and 3K ohms center respectively. **DC Current:** 0–15–150–750 mA. **Accuracy:** VDC ±3% FS; VAC ±4% FS; DC resistance ±3° of linear arc.

Simpson Model 240-4—With leads and manual. Net Ea. $47.50

MODEL 230-2 AC-DC VOLT-OHM-MILLIAMMETER

For telephone and marine uses. **AC Volts:** (1000 ohms/volt) 0-10-250-1000. **DC Volts:** (1,000 ohms/volt) 0-10-50-250-1000. **Ohms:** 0-1K-100K. **DC Current:** 0-10-50-250 mA. **Accuracy:** VDC, ±3% FS; VAC, ±4% FS; DC resistance ±3° of linear arc.

Simpson Model 230-2—With leads and manual. Net Ea. $47.50

MODEL 370 AC AMMETER

Self-contained current transformer (use on 60 Hz only) and indicating instrument. **Ranges:** 0-1-2.5-5-10-25 amps. **Accuracy:** ± 5% of full scale.

Simpson Model 370—Net Each........ $42.50

MODEL 375 DC AMMETER

Covers a wide range without auxiliary shunts. Ideal for unmetered power supplies in radio and TV shops. **Ranges:** 0-1-2.5-5-10-25 amps. **Accuracy:** ± 3% of full scale.

Simpson Model 375—Net Each........ $42.50

MODEL 362-2 LOW-OHMMETER

Makes accurate checks on low-current circuits. Reads from 0.1 to 25 ohms across two ranges, 0-5 and 0-25. Accuracy within ±3° of linear arc length. Ideal for checking motor armatures and fields, switch and relay contact resistances, industrial electrical equipment, shorts in TV and radio chassis wiring, between generator windings and grounds, etc. Draws only 5 mA for long battery life; uses 1½-volt flashlight batteries.

Simpson Model 362-2—Complete with calibrated test leads. Net Each........ $45.00

MODEL 372-2 OHMMETER

Features a wide range of measurements from 0.2 ohm to 50 megohms in six ranges. **Ranges:** 0-500-5K-50K-500K ohms; 0-5-50 megs. Center scale values: 5, 50, 500, 5K, 50K, 500K ohms. **Accuracy** ±3° of linear arc.

Simpson Model 372-2—Complete with test leads and manual. Net Each........ $45.00

MODELS 391 AND 392 AC-DC VOLT-WATTMETERS

For simultaneous readings of AC or DC volts and watts. Two separate 3″ square meters; built-in cord and plug for connection to line outlet; separate toggle switches for range selection. **Volts:** 0–130–260. **Watts:** 0–1500–3000, 391; 0–1000–5000, 392. **Accuracy:** ±3% of full scale. With cord, plug and manual.

Simpson Model 391 AC-DC Volt-Wattmeter—Net Ea. $71.50

Simpson Model 392 AC-DC Volt-Wattmeter—Similar to Model 391 except watt ranges: 0-1000-5000. Net Each. $79.50

MODEL 390 AC VOLT-AMP-WATTMETER

Most popular tester for measuring AC/DC volts, AC amps and AC watts on one meter. Wide coverage permits servicing nearly any appliance. Rugged design. **Volts:** 0-150-300. **Amps:** 0-3-15. **Watts:** 0–300–600–1500–3000. **Accuracy:** ±3% of full scale.

Simpson Model 390—Complete with break-in plug, test leads and manual. Net Each........ $79.50

MODEL 371 AC VOLTMETER

For testing line voltages applied to motors, heating equipment and other industrial uses. **Ranges:** 0-150-300-600 volts. **Accuracy:** ±3% of full scale.

Simpson Model 371—Net Each........ $42.50

MODEL 376 AC VOLTMETER

Rectifier type, 1000 ohms/volt. Useful where limited current occurs in circuit. Ideal as output meter when used with proper capacitor. **Ranges:** 0-5-10-25-50-100-250-500-1000 volts. **Accuracy:** ±5% of full scale.

Simpson Model 376—Net Each........ $42.50

MODEL 377-2 DC VOLTMETER

Resistance 1000 ohms/volt for radio servicing and industrial applications. **Ranges:** 0-1-2.5-5-10-25-50-100-250-500-1000 volts. **Accuracy:** ±3% of full scale.

Simpson Model 377-2—Net Each........ $42.50

MODEL 373 DC MILLIAMMETER

General purpose design for plate and screen grid measurements on tubes, etc. **Ranges:** 0-1-5-10-25-50-100-250-1000 mA. **Accuracy:** ±3% of full scale.

Simpson Model 373—Net Each........ $42.50

MODEL 378 AC MILLIAMMETER

Five ranges for a wide variety of testing: Transformers, vacuum tubes, etc. With current transformer built-in. **Ranges:** 0–5–25–100–250–1000 mA. **Accuracy:** ±5% of full scale.

Simpson Model 378—Net Each........ $42.50

MODEL 374 DC MICROAMMETER

Basic movement sensitivity, 50 µA with self-contained shunts for other ranges. Use with external resistors or multipliers as high sensitivity voltmeter at 20K ohms/volt. Can be shorted out of circuit using selector knob. **Ranges:** 0–50–100–250–500–1000 µA. **Accuracy:** ±3% of full scale.

Simpson Model 374—Net Each........ $42.50

MODEL 379 BATTERY TESTER

Accurate indication of all flashlight, hearing aid (mercury), transistor and portable radio batteries. **Ranges:** 0-1.5-4.5-6-7.5-9-15-22.5-30-45-67.5-90 volts.

Simpson Model 379—With test leads and manual. Net $40.00

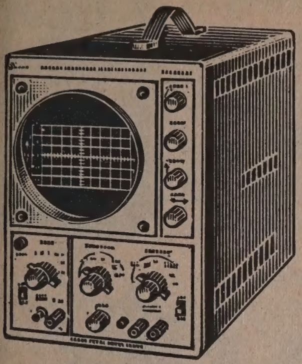
MODEL 387 APPLIANCE TESTER

Millivoltmeter for fast, accurate gas unit servicing. Place probe across thermocouple terminals, test for correct value. **Accuracy:** ±3%, full-scale. **Range:** 0–10–30–100–300–1000 mV. **Size:** 3″ x 5⅞″ x 2½″. Weight, 1½ lbs.

Simpson Model 387—Net Each........ $45.00

Simpson Test Equipment

INSTRUMENTS THAT STAY ACCURATE

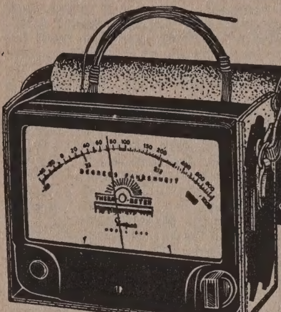


MODEL 455 GENERAL PURPOSE OSCILLOSCOPE

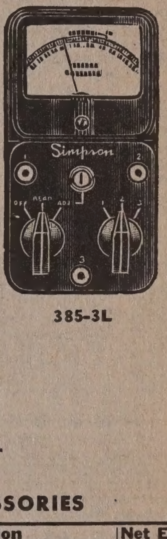
DC coupled general purpose oscilloscope with retrace blanking for color TV servicing and industrial applications. CRT measures and displays sharp waveforms with uniform intensity trace over entire viewing area in low parallax and high contrast graticule. Unit accepts scope camera, lighthood and vector inputs. **Vertical Amplifier Bandwidth:** DC coupled, DC to 10 MHz (−3 dB); AC coupled, 2 Hz to 10 MHz (−3 dB). **Vertical Amplifier Sensitivity:** 9 calibrated steps from 10 mV/cm to 5 V/cm ±3%; vertical gain control provides continuous coverage. **Vertical Amplifier Input Impedance:** 1 megohm ±5%, 42 pF max. **Sweep Frequency Ranges:** 1 Hz to 200 kHz in 5 overlapping ranges. **Horizontal Amplifier Bandwidth:** DC coupled, DC to 500 kHz (−3 dB); AC coupled, 2 Hz to 500 kHz (−3 dB). **Sensitivity:** 300 mV/cm; x 1 x 10 step attenuator and fine control. **Input Impedance:** 1 megohm ±10%, 50 pF max. **Cathode Ray Tube:** 5″ round type 5 UP 1-F with 6 x 10 cm display area and 1.5 kV acceleration voltage. **Calibration Voltage:** 1 kHz square wave, 500 mV (p-p), ±5%. **Power Required:** 120/240 VAC, 50/60 Hz, as indicated on the back of instrument (operating range, 105 to 125 or 210 to 250 VAC), 100 VA max. **Intensity Modulation:** 30 V p-p. **Size:** 8″ w. x 16½″ d. x 10⅜″ h. (approx). Weight, 24 lbs. approx.

Simpson Model 455 Oscilloscope—With all front and rear panel controls, shielded input cable, 5 ft. line cord and operating manual. Net Each....... **$310⁰⁰**

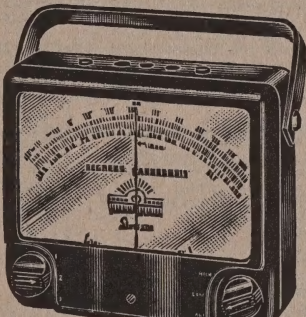
Simpson Model 07548—Low capacitance 10 to 1 probe for Model 455. Net Ea.. . **$15.00**



388-3L



385-3L



389-3L

MODEL 458 7″ COLORSCOPE

An ideal 'scope for servicing color TV. On wide band, frequency response is ±1 dB to 4.5 MHz. Faithfully displays color burst frequency; sensitivity, 40 mV rms/inch of vertical deflection. On narrow band frequency response is flat, ±2 dB, 10 Hz to 300 kHz with sensitivity greater than 15 mV rms/inch of vertical deflection. Good square wave response for accurate representation of sync pulses and composite wave-form pattern for trouble-shooting video, sync and sweep circuits. Horizontal sweep, to 250 kHz, for expansion of high frequency wave-form and color burst. Vernier and compensated decimal step attenuator. Provision for intensity modulation of CRT. Calibration, 1 V p-p. **Size:** 11″ x 16½″ x 14½″. Shipping Weight, 38 lbs.

Simpson Model 458—With manual. For 105–125 VAC, 50–60 Hz. Net Each........................ **$420⁰⁰**

Simpson Model 458 Dual—For 220/110 volts. Net Ea. **$430.00**

MODEL 388-3L THERM-O-METER

Measures the temperature of gases, air, solids or liquids; over a range of from −50° F to +1000° F. Combined Fahrenheit and Centigrade scale. Thermocouple (iron-constantan) sensing element. **Accuracy:** ±1½ scale divisions. **Size:** 7¹⁵⁄₁₆″ x 6″ x 2¹⁵⁄₁₆″. **Simpson Model 388-3L**—For three probes. With Adjust-A-Vue handle, one 0190 general purpose 8′ probe, internal battery, and instruction manual. Wt., 4 lbs. Net Each.... **$95⁰⁰**

MODEL 389-3L THERM-O-METER®

Dual-range temperature tester permitting an accuracy of ±2° F. Dial has combination Centigrade and Fahrenheit scales. **Ranges:** − 50° F to + 100° F; + 100° F to + 250° F. **Accuracy:** ±2° F. Supplied in three-lead model only. **Size:** 7¹⁵⁄₁₆″x6″x2¹⁵⁄₁₆″. Wt., 4 lbs. **Simpson Model 389-3L**—With internal battery, manual, and one Model 0010 15′ thermistor type lead; additional probes are available. Net Each........................ **$90⁰⁰**

MODEL 385-3L TEMPERATURE METER

Compact instrument ideal for measuring temperatures from −50° F to +70° F under conditions where fast, accurate readings are important. Thermistor sensing element. Large 3″ meter. **Accuracy:** ± 1° F, center scale; ± 2° F at ends. **Size:** 3″ x 5⅞″ x 2½″. Net Weight, 1½ lbs. **Simpson Model 385-3L**—For three probes. Complete with one Model 0010 15′ thermistor type lead, and manual. Net Each.................................... **$50⁰⁰**

TEMPERATURE TESTER ACCESSORIES

For 385-3L or 389-3L			For 388 or 388-3L		
Model	**Description**	**Net Ea.**	**Model**	**Description**	**Net Ea.**
0789	Free air T probe	$15.00	0496	8′ service lead	$12.00
0010	15′ therm. lead	12.00	0190	Gen. purpose thermocouple	11.00
0216	Same, 30 ft.	13.00			
0415	Same, 50 ft.	14.00	0187	Surface temp. thermocouple, 1000° F max.	14.00
0416	Same, 100 ft.	17.00			
0417	Same, 150 ft.	21.00			
0790	Surface T probe	12.00	5262	Ever-Redy vinyl case†	15.50
8073	Ever-Redy Case*	12.00			

*Leather, 385-3L only. †For 388, 388-3L or 389-3L.

ACCESSORIES FOR OTHER TESTERS

Model	For Instrument	Description	Net Ea.
8463	269-3, others	Comb. test prods with allig. clips and elbow terms.	$ 3.50
0173	269 Series 1	16 kV high voltage probe	20.00
0181	269 Series 1	40 kV high voltage probe	20.00
0172	262 Series 1, 2	16 kV high voltage probe	20.00
0180	262 Series 1, 2	40 kV high voltage probe	20.00
5262	269-3, others	Ever-Redy vinyl case	15.50

VOM AND VTVM ACCESSORIES

Model	For Instrument	Description	Net Ea.
0146	262-3	16 kV high-voltage probe	$20.00
0145	262-3	30 kV high-voltage probe	20.00
0158	263	Comb. 30 kV (10K ohms/V) and 15 kV (20K ohms/V) probe	18.00
0507	260-6, others	10 kVDC high-voltage probe	20.00
0509	260-6, others	30 kVDC high-voltage probe	20.00
0115	260-6, others	Comb. test prods, removable alligator clips, elbow terminals	4.50
0505	260-6, others	5 kVAC high-voltage probe	5.00
0506	260-6, others	5 kVDC high-voltage probe	5.00
0119	269-2, -3	16 kVDC high-voltage probe	20.00
0157	269-2, -3	30 kVDC high-voltage probe	20.00
5262	269-3, others	Ever-Redy vinyl case	15.50
1613	262-3, others	Sponge-lined vinyl case	16.00
0067	303-1	DC probe	6.00
0068	303-1	AC probe	6.00
0069	303-1	Ground lead	3.00
0073	303-1, -2	High frequency probe	12.75
0074	303-1	30 kVDC high-voltage probe	20.00
0805	260-5, others	Ever-Redy vinyl case	17.50
6379	303-1	Roll top safety case	13.00
0731	311-1	High frequency probe	20.00
0732	311-1, -2	High voltage probe	20.00
0733	311, 303-2	Ground lead	3.00
7594	311-1, -2	DC-AC/Ohms probe	13.00
0100	715	Input cable	5.00
0150	312, 303-2	AC/DC ohms probe	12.75
0152	312	High frequency probe	12.75
0155	312	30 kVDC high-voltage probe	20.00
0577	312, 313, 314, 202	Vinyl case with storage probe	17.00
1565		Sponge-lined vinyl case	19.50
0193	314	RF probe, 10 kHz to 250 MHz, ±1 dB	12.75
7509	383A	Test lead assembly	3.50

Simpson Instrumentation Products

INSTRUMENTS THAT STAY ACCURATE

MODEL 2785 R-L-C BRIDGE

Precision multi-purpose bridge for measuring capacitance, inductance, resistance and "Q". Null indications are accurate and no critical adjustments needed. Built-in 1 kHz oscillator; input jack provided for external oscillator to allow measurements at other frequencies. Wide-range versatile instrument with long slide-rule dial and sensitive galvanometer. **Accuracy:** ±1%, resistance and capacitance ranges except for 1 ohm, 10 megohms, 1000 μF; ±1.5%, inductance ranges except for 10 μH, 100 H; ±5%, Tan-d and Q measurement ranges. **Resistance:** 0.05–1, 0.5–10, 5–100, 50–1K, 500–10K, 5K–100K, 50K–1 meg, 500K–10 megohms. **Capacitance:** 5 pF–100 pF; 50 pF–1 nF; 500 pF–10 nF; 5 nF–100 nF; 50 nF–1 μF; 500 nF–10 μF; 5 μF–100 μF; 50 μF–1000 μF. **Inductance:** 0.5 μH–10 μH; 5 μH–100 μH; 50 μH–1 mH; 500 μH–10 mH; 5 mH–100 mH; 50 mH–1 H; 500 mH–10 H; 5 H–100 H. **Tan-d and Q:** Tan-d x 0.01, Tan-d x 1, Q x 1. **Power Required:** Two 9 volt batteries, NEDA No. 1603 or Burgess No. D6 or equivalent. **Size:** 11¹³⁄₁₆" w. x 6¹⁄₁₆" d. x 8⅝" h. Weight, 12 lbs. with batteries.

Simpson Model 2785—With test leads, batteries and manual. Net Each.................................. $495.00

MODEL 2795 ELECTRONIC MULTIMETER

Advanced design, precision multi-function instrument offers high input impedance, negligible voltage drop and circuit breaker overload protection. Stable, drift-free amplifier eliminates the need for zero adjustments. Adjustments for capacitance and resistance are made at full scale without shortening leads. Power is supplied by internal batteries with an electronic chopper which provides AC needed for capacitance measurements. **Features:** Quick reset, front panel pushbutton; taut band suspension; anti-parallex mirror scale; separate scales for AC/DC voltage and current, resistance, capacitance, temperature and dB measurements. **Accuracy:** ±1% of full-scale AC/DC; ±1.0% of full-scale resistance and capacitance, ±4.0% of reading at mid-scale; ±1% per 10° C from 0–50° C temp. range. **AC/DC Volts:** 0–1–3–10–30–100–300 mV; 0–1–3–10–30–100–300–1000 volts. **AC/DC Current:** 0–1–3–10–30–100–300 μA; 0–1–3–10–30 mA; 0–0.1–0.3–1–3 amps. **Resistance:** 0.2–500 ohms (10 ohms center); 2–5K ohms (100 ohms center); 20–50K ohms (1K ohms center); 0.2K–500K ohms (10K ohms center); 2K–5 megohms (100K ohms center); 20K–50 megohms (1 megohm center). **Capacitance:** 5–2000 μF (100 μF center); 0.5–500 μF (10 μF center); 0.05–50 μF (1 μF center); 5 nF–5 μF (100 nF center); 0.5–500 nF (10 nF center); 0.05–50 nF (1 nF center). **Temperature:** ±18° C from ambient; ±180° C from ambient. **Decibels:** −80 to −58; −80 to −48; −60 to −38; −50 to −28; −40 to −18; −30 to −8; −20 to +42; −10 to +12; −0 to +22; +10 to +32; +20 to +42; +30 to +52; +40 to +62. **Size:** 5.04" w. x 3.94" d. x 8.07" h. Weight, 52.8 oz.

Simpson Model 2795—With test leads, batteries and manual. Net Each.................................. $250.00

ACCESSORIES FOR MODEL 2795

Simpson No.	Description	Net Each
06532	1/3/10/30/100 DC amps shunt	$19.50
02462	10/30/100/300/600 AC amps current xfrmr*	54.55
02463	10/30/100/300/1000 AC amps current xfrmr*	87.20
22923	Surface temp. thermocouple probe	28.50
22924	Immersion type thermocouple probe	28.50
00509	30 kV DC high voltage probe	20.00
07541	Replacement test leads	4.50
22927	Leather carrying case	21.50

*±1%, 45–65 Hz.

MODEL 2791 HIGH FREQUENCY PROBE

High frequency probe for use with Model 2795 multimeter. Wide measuring range of 0.1 to 25 V rms; wide frequency range of 10 kHz to 800 MHz, usable up to 1 GHz. Built-in temperature compensation and linearizing circuit for direct reading on linear scale. Interchangeable probe heads for optimum frequency measurement.

Simpson Model 2791—Net Each.......................$75.00

MODEL 603 MINIATURE CHART RECORDERS

Compact recorders use inkless pressure-sensitive paper for accurate, dependable recording of a single variable. Available to measure AC voltage, AC current, DC voltage or DC current. Specially formulated chart paper will not fog or blur with age, assuring clear and accurate permanent records. Records with an impression every two seconds on 3" wide chart, 63' long. Uses rugged, shockproof taut-band movement. Meter also provides continuous readings of measured value. Four built-in chart speeds are switch selected (available in high, low or intermediate speed ranges). Built-in event indicator. For panel-mounting or portable operation. **Accuracy:** DC models, ±2.5% of full-scale; AC models, ±4.0% of full-scale. **Event Channel Response Time:** 10 msec nominal. **Chart Speeds:** 1½, 6, 12 and 18" per hour. **Power Required:** 115 VAC, 60 Hz. **Size:** 7½" x 4³⁄₁₆" x 2²⁵⁄₃₂". Wt., 2½ lbs.

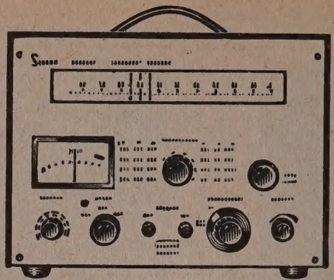
Range	Net Each	Range	Net Each
0–50 DC μA	$107.00	0–15 DC Volts	$ 97.00
0–100 DC μA	102.00	0–50 DC Volts	97.00
0–250 DC μA	98.00	0–150 DC Volts	96.00
0–1 DC mA	90.00	0–5 AC Amps	120.00
0–5 DC mA	97.00	0–5 AC Volts	102.00
0–50 DC mA	97.00	0–150 AC Volts	102.00
0–500 DC mA	97.00	0–300 AC Volts	104.00
0–5 DC Amps	98.00	100–130 AC Volts	105.00
0–50 DC mV	93.00		

Write for accessories on above models.

MODEL 413 TEMPERATURE RECORDER

Portable temperature recorder uses inkless pressure-sensitive paper that will not smudge, blur or fog with age. Uses no batteries, no external power and no ink. Precision clock motor operates for more than a month on one winding. Records accurately under conditions of shock or temperature extremes and gives instantly maximum and minimum temperature reached. Can be packed in shipping crates and will give a written record of perishables in transit or in storage. **Accuracy:** ±1.5% of full-scale. **Response Time:** 15 minutes for 50% temp. change; 40 minutes for 90% change. **Recording Range:** 120° F full-scale span; see below for specific ranges. **Chart Speeds:** 24, 48 or 96 mm/day selectable with interchangeable gears. **Size:** 3.6" w. x 1.8" d. x 6.5" h. Weight, 2.2 lbs.

Simpson Model 413—With 2 rolls of chart paper, gears for 3 chart speeds, plastic bag and manual. Specify recording range: +30° to +150° F, 0 to +120° F, or −30° to +90° F. Net. .$160.00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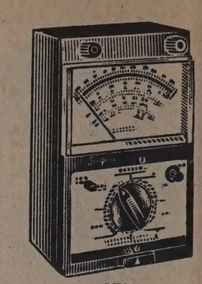
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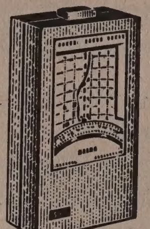
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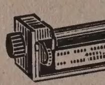

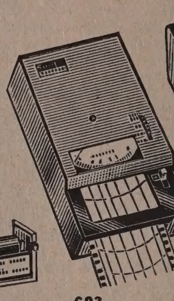
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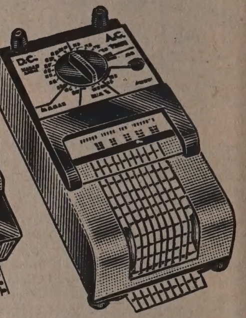

604, 605

MULTI-RANGE STRIP CHART RECORDERS

Volt-amp-milliamp-microamp recorders for permanent record of range and measured value. Inkless design leaves fast sequential impression on pressure-sensitive strip chart, at any of 3 built-in speeds; virtually maintenance-free. Low-cost paper has hard wax surface, will not fog or blur with age. High torque meter movement has shockproof taut-band suspension and moving coil system. Rugged, compact, accurate and easy-to-operate on a wide band of ranges and functions; chart shows range in use as the value is recorded. Makes an impression every 2 seconds with chart speeds of 1", 3" or 12" per hour, driven by self-contained synchronous motor or by external means. Paper is 2.6" wide, on 50' roll with 50 divisions for Model 604, 30 divisions for Model 605. **Accuracy:** ±1.5% of full-scale, indication; ±2.5% of full-scale, recording. **Power:** 115 VAC, 60 Hz with grounded cord supplied. **Size:** 9¾" x 4¾" x 4". Wt., 5½ lbs.

MODEL 604 MULTICORDER®

Offers 22 switch-selected ranges, with 20,000 ohms/volt DC sensitivity, 5000 ohms/volt AC. **DC Millivolts:** 0–100–500. **DC Volts:** 0–2.5–10–25–100–250–500. **AC Volts:** 0–10–25–100–250–500. **DC Current:** 0–50–250 μA; 0–1–5–25–100–250 mA; 0–1 amp. **AC Current:** 0–200 μA. With test leads, chart paper and manual.

Simpson Model 604 Recorder—Net Each...........$260.00
Simpson Model 604—Battery operated DC only. Net. 290.00

MODEL 605 MULTICORDER®

Has 24 ranges, with 666 ohms/volt sensitivity on AC and DC. **DC Millivolts:** 0–12–30–60. **DC Volts:** 0–3–15–60–300–600. **AC Volts:** 0–6–30–150–300–600. **DC Current:** 0–600 μA; 0–1.5–3–6–30–150 mA; 0–1.2–6 amps. **AC Current:** 0–3–15–60–300 mA; 0–1.2–6 amps. With test leads, chart paper and manual.

Simpson Model 605 Recorder—Net Each...........$260.00
Simpson Model 605—Battery operated DC only. Net. 290.00

MODEL 604 AND 605 ACCESSORIES

Simpson No.	Description	Net Each
02611	Vinyl carrying case	$27.00
00682	Gear unit for 30/60/90" per hour speed	30.00
02612	Chart paper for 604 (Box of 10, 50 divisions)	20.00
02614	Chart paper for 605 (Box of 10, 30 divisions)	20.00
06526	0–5 DC amp shunt, 604 only	21.65
06527	0–25 DC amp shunt, 604 only	21.65
06528	0–50 DC amp shunt, 604 only	21.65
06529	0–120–300–600 DC amp shunt, 605 only	27.10
06531	0–100 DC amp shunt*	21.65
22923	Thermocouple probes	28.50
22924	Thermocouple probes for 605 only	28.50

*When used with 604; 0–12–30–60 when used with 605.

CURRENT TRANSFORMERS FOR MODEL 605

Simpson No.	Ranges		Turns Ratio	Accuracy	Net Each
	Pri. Amps	Sec. mA			
02461	600/120/30	300/60/15	2,000:1	±3%, 45–65 Hz	$28.90
02462	600/120/30	60/15/3	10,000:1	±1%, 45–65 Hz	54.55

MODELS 2750, 2755, 2760, 2761 AND 2762
MINIATURE STRIP CHART RECORDERS

Strip chart recorders mount in less panel space than a 4½″ meter. Use specially formulated paper which requires no ink. Will record continuously for over a month at 20 mm per hour, using a single roll of chart paper. **Chart Speeds:** 20 mm (0.79″) and 120 mm (4.72″) per hour switch selectable. Quick-change gear boxes are available to provide other speeds. **Chart Paper:** Pressure sensitive, 2.6″ wide x 50′ long. **Take-Up Reel:** Built-in, automatic motor driven. **Motor Drive:** Synchronous, 3 VA, 90–160 VAC, 60 Hz. Supplied complete with two rolls of chart paper, panel mounting bracket, 60-inch three-wire line cord, test leads (Models 2761 and Model 2762) and manual. **Size:** 3¾″ square by 9⅛″ deep. Weight, 4 lbs. approximate.

MODEL 2750 MINIATURE CHART RECORDERS

Miniature single or dual-channel recorders available with AC and DC voltage, AC and DC current ranges; and as 0–1 mA/0–1 mA dual channel unit. **Accuracy:** ±1.5% of full scale. **Impression Rate:** 3 seconds.

Range	Net Each	Range	Net Each
0–10 DC microamps*	$196.00	0–0.4/25 DC millivolts‡	$275.00
0–50 DC microamps*	180.00	0–50 DC millivolts	165.00
0–100 DC microamps	170.00	0–5 AC amps	180.00
0–500 DC microamps	165.00	100–130 AC volts§	200.00
0–1 DC milliamps	165.00	0–150 AC volts	170.00
0–1/0–1 DC milliamps†	205.00	0–300 AC volts	170.00

*Impression rate: 6 seconds. †Dual channel; impression rate: 6 seconds; 5 times on one channel; 1 time on other channel. ‡Adjustable. §Segmental scale.

MODEL 2755 10-CHANNEL EVENT RECORDERS

Provides continuous recording of ten separate events. Records any variable that can be converted to an electrical value. **Accuracy of Recording:** 10 msec nominal pen response. **Impression Rate:** Continuous. **Power per Solenoid:** 1.2 watts except AC model, 2.2 VA.

Voltage	Voltage	Net Each
10 channels, 6 VDC	10 channels, 24 VDC	$225.00
10 channels, 12 VDC	10 channels, 115 VAC, 60 Hz	225.00
10 channels, 24 VAC, 60 Hz	....	225.00

SERIES 2760 SINGLE RANGE TEMPERATURE RECORDERS

Record for over a month unattended. Inkless, pressure sensitive paper. Switch selected chart speeds 20/120 mm per hour. Taut band movement is temperature compensated. Completely accurate up to 1.5% FS.

Simpson No.	Ranges	Sensor	Net Each
23100	−60° C to 0° C	Pt-100 Resis. Bulb	$200.00
23102	0 to +60° C	Pt-100 Resis. Bulb	200.00
23114	0 to +100° F	Pt-100 Resis. Bulb	200.00
23103	0 to +100° C	Pt-100 Resis. Bulb	200.00
23008	0 to +500° F	I/C Thermocouple	200.00
23009	0 to +800° F	I/C Thermocouple	200.00
23010	0 to +1500° F	C/A Thermocouple	200.00
23011	0 to +2500° F	C/A Thermocouple	200.00

MODEL 2761 TEMPERATURE RECORDER

Three built-in temperature ranges which are switch selected. **Temperature Range:** −50° F to +50° F; +50° F to +150° F; +150° F to +250° F. **Accuracy of Recording:** ±2° F over range of 0° to 120° F; ±3° F over balance of range. **Impression Rate:** 3 sec.

Simpson Model 2761 Temperature Recorder—Net Ea. **$190.00**

MODEL 2762 TEMPERATURE RECORDER

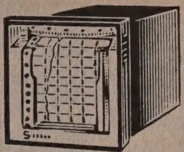
Dual channel features same range recorded on both channels, 2 inputs; two ranges switch selectable. **Temperature Range:** −40° F to +60° F; +50° F to +150° F. **Accuracy of Recording:** ±2° F. **Impression Rate:** 6 seconds; ten times on one channel, two times on the other channel.

Simpson Model 2762 Temperature Recorder—Net Ea. **$210.00**

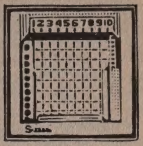
TEMPERATURE SENSORS FOR SERIES 2760

Simpson No.	Description	Net Each
23235*	Stainless, .187″ x 5″, 10′ leads	$37.00
23245†	Stainless, .187″ x 5″, 10′ leads	18.00
21224†	Stainless overbraid, 235″, 20 ga.	25.65
21223†	Glass cloth overbraid, 34″, 30 ga.	4.20
21222†	Glass cloth overbraid, 137″, 24 ga.	4.95
23246‡	Stainless, .187″ x 5″, 10′ leads	20.00

*Pt-100 Resistance Bulb with 100 ohms resistance at 0° C. †I/C Thermocouple type with 10 ohms resistance. ‡C/A Thermocouple type with 10 ohms resistance.



Models 2750, 2761, 2762, Series 2760



Model 2755

MINIATURE RECORDERS
USE JUST 3¾″ X 3¾″
OF PANEL SPACE

ACCESSORIES AND CHART PAPER

ACCESSORIES FOR 2750, 2755, 2761 AND 2762

Simpson No.	Description	Net Each
22392	Portable carrying handle	$12.50
22395	Plastic window for direct paper feedout	3.00
22301	Gear unit for 30/180 mm per hour speeds	20.00
22302	Gear unit for 60/160 mm per hour speeds	20.00
22303	Gear unit for 100/600 mm per hour speeds	20.00
22304*	Gear unit for 300/1800 mm per hour speeds	30.00
22305*	Gear unit for 600/3600 mm per hour speeds	30.00
22394†	Line cord, 3 wire, 60″, with pigtail terminal	4.50
22393	Line cord, 3 wire, 60″, with 117 VAC plug	5.00
22300	Gear unit for 20/120 mm per hour speeds	20.00

ACCESSORIES FOR 2761 AND 2762 ONLY

Simpson No.	Description	Net Each
00789	Free air temperature probe	$14.00
00790	Surface temperature probe	11.00
00010	15-foot thermistor lead	11.00
00216	30-foot thermistor lead	12.00
00415	50-foot thermistor lead	13.00
00416	100-foot thermistor lead	16.00
00417	150-foot thermistor lead	20.00

*For use with Model 2755 recorders only. †For 2760 only.

CHART PAPER FOR 2750 AND 2755 RECORDERS

Box of 10 50-ft. rolls.

Simpson No. for		Calibration	Net, Box of 10 Rolls
2750	2755		
22310	22380*	20 mm per hour, 30 divisions	$20.00
22311	....	20 mm per hour, 50 divisions	20.00
22312	22381*	30 mm per hour, 30 divisions	20.00
22313	....	30 mm per hour, 50 divisions	20.00
22314	22382*	60 mm per hour, 30 divisions	20.00
22315	....	60 mm per hour, 50 divisions	20.00
22316	22383*	100 mm per hour, 30 divisions	20.00
22317	....	100 mm per hour, 50 divisions	20.00

*2755 paper has 10 channel markings instead of 30 divisions.

CHART PAPER FOR SERIES 2760
PLATINUM RESISTANCE TYPE

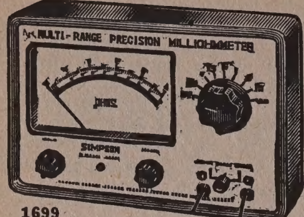
Simpson No.	Calibration	Net, Box of 10 Rolls
23200	20 mm per hour, 60° C	$20.00
23201	20 mm per hour, 100° C	20.00
23209	20 mm per hour, 0 to 100° F	20.00
23202	20 mm per hour, 150/300° C	20.00
23203	20 mm per hour, 200/400° C	20.00
23204	30 mm per hour, 60° C	20.00
23205	30 mm per hour, 100° C	20.00
23206	30 mm per hour, 150/300° C	20.00
23207	30 mm per hour, 200/400° C	20.00
23208	60 mm per hour, 60° C	20.00
23210	60 mm per hour, 150/300° C	20.00
23211	60 mm per hour, 200/400° C	20.00
23212	100 mm per hour, 60° C	20.00
23213	100 mm per hour, 100° C	20.00
23214	100 mm per hour, 150/300° C	20.00
23215	100 mm per hour, 200/400° C	20.00

THERMOCOUPLE TYPE

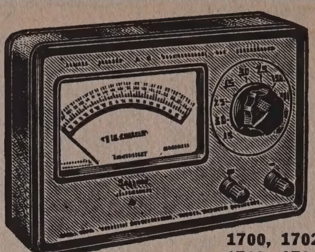
Simpson No.	Calibration	Net, Box of 10 Rolls
23248	20 mm per hour, 0 to 500° F	$20.00
23249	20 mm per hour, 0 to 800° F	20.00
23250	20 mm per hour, 0 to 1500° F	20.00
23251	20 mm per hour, 0 to 2500° F	20.00

CHART PAPER FOR 2761 AND 2762 RECORDERS

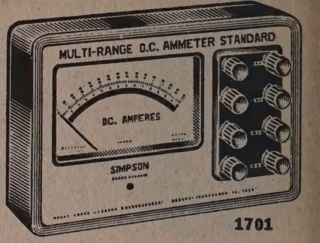
Simpson No. for		Calibration	Net, Box of 10 Rolls
2761	2762		
23237	23241	20 mm per hour	$20.00
23238	23242	30 mm per hour	20.00
23239	23243	60 mm per hour	20.00
23240	23244	100 mm per hour	20.00



1699



1700, 1702,
1703, 1704



1701

MODEL 1699 MULTI-RANGE PRECISION MILLIOHMMETER

Ideal for lab use, for measuring low resistance values accurately (±1% of full-scale) and rapidly. Measures resistance values from .001 to 50 ohms by comparing with standard internal resistance. Test leads with Kelvin Clips are coupled with unique circuit using separate voltage and current paths to insure accuracy. Large 7″ meter has mirrored scale and knife-edge pointer for easy readability. Single arc, 90° dial has 100 divisions. Battery operated, low current (less than 7.95 mW). **Ranges:** 0–.05, .1, .25, .5, 1, 5, 10, 50 ohms. **Max. Output Current:** 460 mA in lowest range, 0.5 mA in 50-ohm range. **Max. Dissipation:** (In sample) 7.95 mW in lowest range, .012 mW in 50 ohm range. **Size:** 11⅜″ x 7⅜″ x 3¼″. Net Weight, 5 lbs. 10 oz.

Simpson Model 1699—With batteries, test leads and manual. Net Each..**$195.00**

Simpson Model 0156—Extra Kelvin leads. Net Each. **5.50**

DC MULTI-RANGE SECONDARY STANDARDS

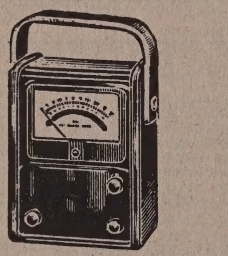
DC lab standards for use in industrial lab testing, incoming inspection, production applications, etc. Designed for long-term accuracy, with spring-loaded sapphire jewels and hardened pivots for high shock resistance and minimum friction. High damping factor and high torque provide rapid response, minimize overshoot. Self-shielded, deep-core movement, impervious to most external magnetic fields. Large ceramic rotary switch has solid silver contacts (Model 1701 ammeter has separate binding posts for each range). Temperature compensated for operation from 15° C to 35° C. Hand-drawn, 5½″ mirrored scales provide superb readability, free from parallax errors with knife edge pointer. **Accuracy:** 0.5% of full scale in horizontal position at 25° C. **External Temperature Influence:** 0.25% per 10° C change. **Sensitivity:** Model 1700, 1000 ohms per volt; 1704, 200 ohms per volt. **Size:** Steel case, 11⅜″ w. x 3¼″ d. x 7⅜″ h.

Model	Range	Max. Loss	Diel. Test	Wt., Lbs.	Net Each
1700 Voltmeter	0–1.5, 3, 7.5, 15, 30, 75, 150, 300, 750, 1500 volts	1 mA	3000 V rms	5½	**$195.00**
1701 Ammeter	0–0.75, 1.5, 3, 7.5, 15, 30, 75 amps	45 mV	3000 V rms	8	**195.00**
1702 Milliammeter	0–1.5, 3, 7.5, 15, 30, 75, 150, 300, 750, 1500 mA	50–150 mV	3000 V rms	5½	**195.00**
1703 Microam.	0–75, 150, 300, 750, 1500 µA	.16–.58 V	3300 V rms	5½	**195.00**
1704 Milliv.*	0–30, 75, 150, 300, 750, 1500 mV	5 mA	3300 V rms	5½	**195.00**

*Includes special 0.026 ohm test leads.

Simpson Model 9808 Ever-Redy Leather Carrying Case—For 1700 Series. Net Each..............................**$37.00**

SINGLE AND MULTI-RANGE LOW-COST SECONDARY STANDARDS



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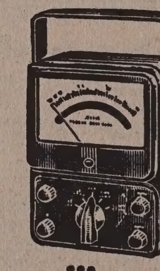


880

MODEL 880 AC-DC DYNAMOMETER TYPES

Accuracy ±1% of full-scale on DC and low frequency AC. Can be used as a low-cost transfer standard, with 0.25% accuracy at 60 Hz. Arc length, 3.63″ (90° arc).

VOLTMETERS

Sensitivity, 52.5 ohms/volt.

Range, Volts	Net Each	Range, Volts	Net Each
0–75–150–300	**$102.00**	0–150–300–600	**$102.00**

SINGLE-PHASE WATTMETERS

Measure true wattage, compensated for power factor. If power being measured approaches full-scale, either voltage or current can be limited. Product of voltage, current and power factor must not exceed full-scale. Maximum voltage, 150 or 300. Single and dual current ranges.

Watts Range		Max. Volts		Maximum Amps	Net Each
Low	High	Low	High		
100	200	150	300	1.5	**$ 85.50**
200	400	150	300	3.0	**85.50**
500	1000	150	300	7.5	**85.50**
1000	2000	150	300	15	**85.50**
2000	4000	150	300	30	**91.00**
5000	10000	150	300	75	**91.00**
250–500*	500–1000	150	300	7.5	**107.50**
500–1000*	1000–2000	150	300	15	**107.50**

*Dual-range models.

Simpson No. 6192 Roll-Top Safety Case—For Models 9, 10 and 880. Net Each....................................**$11.00**

- **Molded phenolic case with easy-carrying handle**
- **Hand-drawn scale for ½% DC and 1% AC accuracy**
- **Wide selection of ranges for general purpose testing**
- **Single, dual and triple-range models**

Precision portable instruments feature hand-drawn scales, individually calibrated for accuracy. Parallax errors are eliminated by knife-edge pointers, painted black on one side and read against a mirror. Hand-polished, hardened steel pivots; spring-backed jewelled bearings. All models are temperature-compensated. Phenolic case withstands rough use. **Size:** 5¼″ x 3½″ x 7″. Weight, 2½ lbs.

MODEL 9 DC STANDARDS

DC instruments with annular, self-shielded movement for excellent linearity and freedom from errors caused by nearby magnetic fields. Shunts are milled from single section of manganin for wide-range temperature stability. Multiple-range units have binding post for each range. Accuracy, ±0.5% of full-scale. Voltmeter sensitivity, 1000 ohms/volt. Arc length, 4.03″ (100°).

Range	Net Each	Range	Net Each
0–50 Volts	**$69.00**	0–300/750 Volts	**$85.50**
0–100 Volts	**69.00**	0–15/150/300 Volts	**96.50**
0–300 Volts	**74.50**	0–150/300/600 Volts	**96.50**
0–50 µA	**96.50**	0–10/100 mA	**80.00**
0–100 µA	**91.00**	0–25/250 mA	**80.00**
0–200 µA	**85.50**	0–100/500 mA	**80.00**
0–500 mA	**69.00**	0–2.5/5 Amps	**80.00**
0–5 Amps	**69.00**	0–5/10 Amps	**80.00**
0–15 Amps	**69.00**	0–2.5/10/25 Amps	**91.00**
0–50 Amps	**69.00**	0–5/20/50 Amps	**91.00**
0–150/300 Volts	**80.00**		

MODEL 10 AC STANDARDS

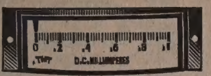
AC instruments with magnetically damped, repulsion-attraction iron vane movement. Provides essentially linear deflection through upper 80% of scale, with excellent damping and rapid response time, for fast, accurate rms readings. Accuracy, 1% of full-scale, 25–125 Hz (current types, 25–500 Hz). Voltmeter sensitivity, 100 ohms/volt. Arc length, 3.63″ (90°).

Range	Net Each	Range	Net Each
0–150/300/600 Volts	**$80.00**	0–15 Amps	**$63.50**
0–50 mA	**63.50**	0–30 Amps	**63.50**
0–500 mA	**63.50**	0–50 Amps	**63.50**
0–5 Amps	**63.50**		

Additional Portable Instruments on Page 501

TRIPLETT Panel Meters

EDGEWISE METERS



Designed for strikingly clean appearance. Edgewise panel meters occupy minimum space and provide performance of conventional panel meters. Available in four different sizes. **Case and Composition:** Model .5-E, thermoplastic front and steel back; all others thermoplastic front and thermosetting plastic back. **Scale Length:** Model .5-E, .84″; Model 320-E and 330-E, 2.75″; Model 420-E and 430-E, 3.87″. **Panel Hole Required:** Model .5-E, 1.27″ x .516″; Model 320-E and 330-E, 3.45″ x 1.30″; Model 420-E and 430-E, 4.562″ x 1.531″. **Depth Behind Panel:** Model .5-E, 1.088″; Model 320-E and 330-E, 2.583″; Model 420-E and 430-E, 3.53″. Bezels available (optional) for 3½″ and 4½″ Models can be mounted from front or rear of the panel.

Triplett Number 11977A—Metal bezel for 3½″ models. Net Each.................................. **$1.80**

Triplett Number 11967A—Metal bezel for 4½″ models. Net Each.................................. **1.80**

To Order: Specify Model, range, type and Triplett number from the appropriate tables below. Example, .5-E, 0–1, DC Ammeter, 1020102.

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	.5-E Number	Net Each, Lots of 1-24	25-49	50 Up	320-E Number	Net Each, Lots of 1-24	25-49	50 Up	420-E Number	Net Each, Lots of 1-24	25-49	50 Up
0–50	2300	1060115	$34.60	$27.68	$25.95	1063515	$37.10	$29.68	$27.83	1067015	$38.20	$30.56	$28.65
0–100	825	1060118	31.70	25.36	23.78	1063518	35.30	28.24	26.48	1067018	36.50	29.20	27.38
0–200	360	1060120	29.00	23.20	21.75	1063520	33.60	26.88	25.20	1067020	34.80	27.84	26.10
0–500	156	1060125	28.30	22.64	21.23	1063525	32.50	26.00	24.38	1067025	33.60	26.88	25.20

DC MICROAMMETERS (SUSPENSION TYPE)

0–10	15000	....	....	....	....	8063510	$53.20	$42.56	$39.90	8067010	$54.50	$43.60	$40.88
0–20	7500	....	....	....	....	8063512	47.60	38.08	35.70	8067012	48.60	38.88	36.45
0–50	2300	....	....	....	....	8063515	39.90	31.92	29.93	8067015	41.20	32.96	30.90
0–100	825	....	....	....	....	8063518	37.10	29.68	27.83	8067018	38.20	30.56	28.65
0–200	360	....	....	....	....	8063520	35.80	28.64	26.85	8067020	37.10	29.68	27.83
0–500	156	....	....	....	....	8063525	35.30	28.24	26.48	8067025	36.50	29.20	27.38

DC MILLIAMMETERS

0–1	55	1010102	$27.30	$21.84	$20.48	1013502	$31.30	$25.04	$23.48	1017002	$32.50	$26.00	$24.38
0–5	8.5	1010108	27.30	21.84	20.48	1013508	31.30	25.04	23.48	1017008	32.50	26.00	24.38
0–10	3.1	1010110	27.30	21.84	20.48	1013510	31.30	25.04	23.48	1017010	32.50	26.00	24.38
0–50	1.0	1010115	27.30	21.84	20.48	1013515	31.30	25.04	23.48	1017015	32.50	26.00	24.38
0–100	.5	1010118	27.30	21.84	20.48	1013518	31.30	25.04	23.48	1017018	32.50	26.00	24.38
0–200	.25	1010120	27.30	21.84	20.48	1013520	31.30	25.04	23.48	1017020	32.50	26.00	24.38
0–500	.1	1010125	27.30	21.84	20.48	1013525	31.30	25.04	23.48	1017025	32.50	26.00	24.38

DC AMMETERS

0–1	....	1020102	$27.90	$22.32	$20.93	1023502	$31.90	$25.52	$23.93	1027002	$33.00	$26.40	$24.75
0–5	....	....	....	....	....	1023508	31.90	25.52	23.93	1027008	33.00	26.40	24.75
0–10	....	....	....	....	....	1023510	31.90	25.52	23.93	1027010	33.00	26.40	24.75
0–30	....	....	....	....	....	1023514	31.90	25.52	23.93	1027014	33.00	26.40	24.75
0–50	....	....	....	....	....	1023515	31.90	25.52	23.93	1027015	33.00	26.40	24.75

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	.5-E Number	Net Each, Lots of 1-24	25-49	50 Up	320-E Number	Net Each, Lots of 1-24	25-49	50 Up	420-E Number	Net Each, Lots of 1-24	25-49	50 Up
0–50	6.7	1030115	$27.90	$22.32	$20.93	1033515	$31.90	$25.52	$23.93	1037015	$33.00	$26.40	$24.75

DC VOLTMETERS (1000 OHMS/VOLT)

0–5	....	1040108	$28.40	$22.72	$21.30	1043508	$33.00	$26.40	$24.75	1047008	$34.20	$27.36	$25.65
0–10	....	1040110	28.40	22.72	21.30	1043510	33.00	26.40	24.75	1047010	34.20	27.36	25.65
0–25	....	1040113	28.40	22.72	21.30	1043513	33.00	26.40	24.75	1047013	34.20	27.36	25.65
0–30	....	1040114	28.40	22.72	21.30	1043514	33.00	26.40	24.75	1047014	34.20	27.36	25.65
0–50	....	1040115	28.40	22.72	21.30	1043515	33.00	26.40	24.75	1047015	34.20	27.36	25.65
0–150	....	1040119	28.40	22.72	21.30	1043519	33.00	26.40	24.75	1047019	34.20	27.36	25.65
0–500	....	....	....	....	....	1043525	33.60	26.88	25.20	1047025	34.80	27.84	26.10

AC MILLIAMMETERS

Range	Resis., Ohms	.5E Model Not Available	330-E Number	Net Each, Lots of 1-24	25-49	50 Up	430-E Number	Net Each, Lots of 1-24	25-49	50 Up
0–10	4000	....	1123510	$30.70	$24.56	$23.03	1127010	$31.90	$25.52	$23.93

AC AMMETERS

0–1	.38	....	1103502	$30.70	$24.56	$23.03	1107002	$31.90	$25.52	$23.93
0–5	.014	....	1103508	30.70	24.56	23.03	1107008	31.90	25.52	23.93

AC VOLTMETERS

0–150	125*	....	1113519	$31.90	$25.52	$23.93	1117019	$33.00	$26.40	$24.75

*Ohms/Volt.

WATTMETERS

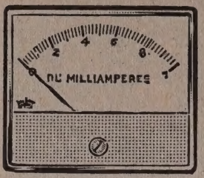
Single phase wattmeters are available in 3½″ size only. Electrodynamometer type panel instruments come in three different styles. **Flange Size:** Model 360-G, 3.50″ w. x 2.99″ h.; Model 361, 3.50″ dia.; Model 367-A, 3.00″ w. x 3.00″ h. **Body Size:** Model 360-G, 2.75″ dia. x 1.75″ d.; Model 361, 2.75″ dia. x 1.937″ d.; Model 367-A, 2.75″ dia. x 2.047″ d. **Term. Extend:** Model 360-G, .687″ max.; Model 361, .687″ max.; Model 367-A, .687″ max.

Range, Watts	Normal V	Normal A	360-G Number	Net Each, Lots of 1-24	25-49	50 Up	361 Number	367-A Number	Net Each, Lots of 1-24	25-49	50 Up
0–75	150	.5	1189701	$43.30	$34.64	$32.48	1185601	1185701	$39.00	$31.20	$29.25
0–150	150	1.0	1189702	43.30	34.64	32.48	1185602	1185702	39.00	31.20	29.25
0–300	150	2.0	1189703	43.30	34.64	32.48	1185603	1185703	39.00	31.20	29.25
0–750	150	5.0	1189704	43.30	34.64	32.48	1185604	1185704	39.00	31.20	29.25
0–1500	150	10.0	1189705	43.30	34.64	32.48	1185605	1185705	39.00	31.20	29.25
0–150	300	.5	1189706	47.40	37.92	35.55	1185606	1185706	43.10	34.48	32.33
0–300	300	1.0	1189707	47.40	37.92	35.55	1185607	1185707	43.10	34.48	32.33
0–600	300	2.0	1189708	47.40	37.92	35.55	1185608	1185708	43.10	34.48	32.33
0–1500	300	5.0	1189709	47.40	37.92	35.55	1185609	1185709	43.10	34.48	32.33
0–3000	300	10.0	1189710	47.40	37.92	35.55	1185610	1185710	43.10	34.48	32.33
0–75–150	150–300	.5	1189711	56.20	44.96	42.15	1185611	1185711	51.80	41.44	38.85
0–150–300	150–300	1.0	1189712	56.20	44.96	42.15	1185612	1185712	51.80	41.44	38.85
0–300–600	150–300	2.0	1189713	56.20	44.96	42.15	1185613	1185713	51.80	41.44	38.85
0–750–1500	150–300	5.0	1189714	56.20	44.96	42.15	1185614	1185714	51.80	41.44	38.85
0–1500–3000	150–300	10.0	1189715	61.20	48.96	45.90	1185615	1185715	56.90	45.52	42.68

CONTACT US FOR THE AVAILABILITY OF ADDITIONAL RATINGS

TRIPLETT Panel Meters

GENERAL PANEL METER INFORMATION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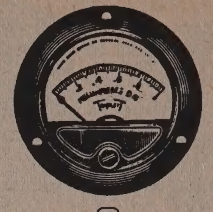
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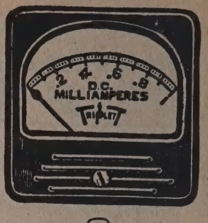
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Triplett meters offer ±2% accuracy, rugged construction, high overload capacity and long-term reliability. **DC meters** are D'Arsonval type with spring back, pivot and jewel construction except for certain microammeters with high-sensitivity suspension movement; linear scales; extra light moving coil; self-shielded Bar-Ring magnet; one-piece diecast frame. **AC meters** are moving iron vane type, viscous damped, with light moving parts. All have spring back jewel bearings; specially treated pivots; white enameled metal dials; ceramic pointer stops; molded zero adjusters, case and base. **Accuracy:** ±2% except AC rect. type, ±3%. **Repeatability:** Suspension type, ±0.5%; pivot, ±2%. **Overload Capacity:** 1 second: current, 1000% except AC rect. and RF, 150%; voltage, 0–100 V, 1000% except RF thermocouple, AC rect., 150%. **Continuous Overload:** 120% except DC and AC (iron vane) current, 150%. **Damping Factor:** 2.5 min. **G-Series Meters (Fig. A):** Flexible and interchangeable design with optional mounting bezel for mounting behind panel. Large dial area for multiple scales. Natural aluminum insert. **Phenolic Series:** Model 221-T (Fig. B) come with glass window, thermosetting plastic case and three stud mountings. Optional illumination available for certain models. Model 227-T (Fig. C) comes with glass window, thermosetting plastic case and four stud mtgs. Optional illumination available for certain models.

2½" PANEL INSTRUMENTS

AC, DC or RF 2½" meters come in three different styles. Table below indicates the dimensions of the meters. **To Order:** Specify both model and Triplett part number from the appropriate tables below. Example, model 220-G, number 10696 15 indicates DC Microammeter, pivot and jewel type with 0–50 μA range in G-series case. Bezel and illumination kit available for G-series.

Triplett Number 13-238—Metal bezel for G-series. Size, 3.09" w. x 1.69" h. Allow .5" additional width for bezel mounting hardware.
Net Each **$2.40**
Triplett Number 66-80—Illumination kit for G-series.
Net Each **2.80**

Model	Meter Type	Nominal Size	Fig.	Scale Length	Flange Size, W. x H.	Body Size, Dia. x Depth	Term. Extend
220-G	DC	2½"	A	2.48"	2.77" x 2.39"	2.2" x 1.39"	.73"
230-G	AC	2½"	A	2.11"	2.77" x 2.39"	2.2" x 1.39"	.73"
240-G	RF	2½"	A	2.48"	2.77" x 2.39"	2.2" x 1.39"	.73"
221-T	DC	2½"	B	1.76"	2.687" dia.	2.203" x .937"	.75"
231-S	AC	2½"	B	1.58"	2.687" dia.	2.203" x 1.312"	.75"
241-T	RF	2½"	B	1.76"	2.687" dia.	2.203" x .937"	.75"
227-T	DC	2½"	C	1.76"	2.375" x 2.375"	2.156" x 1.00"	.75"
237-S	AC	2½"	C	1.58"	2.375" x 2.375"	2.156" x 1.375"	.75"
247-T	RF	2½"	C	1.76"	2.375" x 2.375"	2.156" x 1.00"	.75"

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	220-G Number	221-T Number	227-T Number	Net Each, Lots of		
					1-24	25-49	50 Up
0–50	2300	1069615	1062515	1062815	$24.90	$19.92	$18.68
0–100	825	1069618	1062518	1062818	23.20	18.56	17.40
0–200	360	1069620	1062520	1062820	21.40	17.12	16.05
0–500	156	1069625	1062525	1062825	20.30	16.24	15.23

DC MICROAMMETERS (SUSPENSION TYPE)

0–5	15000	8069608	8062508	8062808	$48.10	$38.48	$36.08
0–10	7500	8069610	8062510	8062810	41.20	32.96	30.90
0–20	2500	8069612	8062512	8062812	35.30	28.24	26.48
0–50	825	8069615	8062515	8062815	27.80	22.24	20.85
0–100	360	8069618	8062518	8062818	24.90	19.92	18.68
0–200	156	8069620	8062520	8062820	23.70	18.96	17.78
0–500	40	8069625	8062525	8062825	23.20	18.56	17.40
0–1000†	12.5	8069629	8062529	8062829	22.60	18.08	16.95
0–50‡	360	8069639	8062539	8062839	24.90	19.92	18.68
0–100‡	156	8069640	8062540	8062840	23.70	18.96	17.78
0–500‡	12.5	8069643	8062543	8062843	22.60	18.08	16.95

†Reads 0–1 mA. ‡Zero center range.

DC MILLIAMMETERS

0–1	55	1019602	1012502	1012802	$19.10	$15.28	$14.33
0–5	8.5	1019608	1012508	1012808	19.10	15.28	14.33
0–10	3.1	1019610	1012510	1012810	19.10	15.28	14.33
0–25	2.0	1019613	1012513	1012813	19.10	15.28	14.33
0–50	1.0	1019615	1012515	1012815	19.10	15.28	14.33
0–100	0.5	1019618	1012518	1012818	19.10	15.28	14.33
0–200	0.25	1019620	1012520	1012820	19.10	15.28	14.33
0–500	0.1	1019625	1012525	1012825	19.10	15.28	14.33

DC AMMETERS

0–1	. . . . .	1029602	1022502	1022802	$19.70	$15.76	$14.78
0–5	. . . . .	1029608	1022508	1022808	19.70	15.76	14.78
0–10	. . . . .	1029610	1022510	1022810	19.70	15.76	14.78
0–30	. . . . .	1029614	1022514	1022814	19.70	15.76	14.78
0–50	. . . . .	1029615	1022515	1022815	19.70	15.76	14.78

DC VOLTMETERS (1000 OHMS/VOLT)

0–5	. . . . .	1049608	1042508	1042808	$20.90	$16.72	$15.68
0–10	. . . . .	1049610	1042510	1042810	20.90	16.72	15.68
0–25	. . . . .	1049613	1042513	1042813	20.90	16.72	15.68
0–30	. . . . .	1049614	1042514	1042814	20.90	16.72	15.68
0–50	. . . . .	1049615	1042515	1042815	20.90	16.72	15.68
0–100	. . . . .	1049618	1042518	1042818	20.90	16.72	15.68
0–150	. . . . .	1049619	1042519	1042819	20.90	16.72	15.68
0–200	. . . . .	1049620	1042520	1042820	20.90	16.72	15.68
0–250	. . . . .	1049621	1042521	1042821	20.90	16.72	15.68
0–500*	. . . . .	1049625	1042525	1042825	29.40	23.52	22.05
0–1000*	. . . . .	1049629	1042529	1042829	29.90	23.92	22.43
0–5000*	. . . . .	1049633	1042533	1042833	35.80	28.64	26.85

*2000 ohms/volt; external multiplier box furnished.

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	220-G Number	221-T Number	227-T Number	Net Each, Lots of		
					1-24	25-49	50 Up
0–50	6.7	1039615	1032515	1032815	$19.70	$15.76	$14.78
0–100	13.5	1039618	1032518	1032818	19.70	15.76	14.78
0–150	20.2	1039619	1032519	1032819	19.70	15.76	14.78

AC MILLIAMMETERS

Range	Resis., Ohms	230-G Number	231-S Number	237-S Number	Net Each, Lots of		
					1-24	25-49	50 Up
0–10	4000	1129610	1122510	1122810	$18.50	$14.80	$13.88
0–50	120	1129615	1122515	1122815	18.50	14.80	13.88
0–100	40	1129618	1122518	1122818	18.50	14.80	13.88
0–250	5.9	1129621	1122521	1122821	18.50	14.80	13.88
0–500	1.55	1129625	1122525	1122825	18.50	14.80	13.88

AC AMMETERS

For ranges above 50, use AC ammeter current transformers.

0–1	.38	1109602	1102502	1102802	$18.50	$14.80	$13.88
0–2	.092	1109604	1102504	1102804	18.50	14.80	13.88
0–3	.039	1109606	1102506	1102806	18.50	14.80	13.88
0–5	.014	1109608	1102508	1102808	18.50	14.80	13.88
0–10	.004	1109610	1102510	1102810	18.50	14.80	13.88
0–15	.003	1109611	1102511	1102811	18.50	14.80	13.88
0–25	.002	1109613	1102513	1102813	18.50	14.80	13.88
0–30	.001	1109614	1102514	1102814	18.50	14.80	13.88
0–50	.00035	1109615	1102515	1102815	18.50	14.80	13.88

AC VOLTMETERS

0–10	10	1119610	1112510	1112810	$18.50	$14.80	$13.88
0–50	50	1119615	1112515	1112815	18.50	14.80	13.88
0–100	91	1119618	1112518	1112818	18.50	14.80	13.88
0–150	125	1119619	1112519	1112819	19.70	15.76	14.78
0–250	144	1119621	1112521	1112821	19.70	15.76	14.78
0–300	144	1119622	1112522	1112822	19.70	15.76	14.78
0–500*	125	1119625	1112525	1112825	32.50	26.00	24.38

*External multiplier box furnished.

RF THERMOAMMETERS

Range	Resis., Ohms	240-G Number	241-T Number	247-T Number	Net Each, Lots of		
					1-24	25-49	50 Up
0–1	.35	1079602	1072502	1072802	$23.70	$18.96	$17.78
0–1.5	.21	1079603	1072503	1072803	23.70	18.96	17.78
0–5	.06	1079608	1072508	1072808	23.70	18.96	17.78
0–10	.03	1079610	1072510	1072810	23.70	18.96	17.78

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

TRIPLETT Panel Meters

DC MILLIAMPERES
2
4
6
8

A

DC MICROAMPERES

D

PANEL METERS—3.5″ AND 4.5″ SIZES

Similar to 2½″ panel meters. Same specifications except the size. **G and T Series** are similar to 2½″ size meters. **GL Series** comes with glass window, flat black thermosetting plastic case, two stud mounting and contoured base with sealed meter movement permitting utilization of lower part of front for mounting controls, switches, etc. **R Series** comes with thermoplastic front and thermosetting plastic back with flat scale arc. **GL/B Series** is similar to GL Series except includes integral bezel for behind the panel mounting. Bezel also available for 3½″ and 4½″ G Series (optional).

Triplett Number 13-239—Metal bezel for 320-G series. Panel cutout, 3.718″ w. x 2.156″ h. Bezel, 3.83″ w. x 2.27″ h. Net Each.................**$2.40**

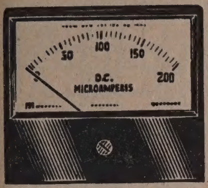
Triplett Number 13-236—Metal bezel for 420-G series. Panel cutout, 4.812″ w. x 2.75″ h. Bezel, 4.92″ w. x 2.85″ h. Net Each.................**$2.40**

Triplett Number 66-80—Illumination kit for G Series. Net Each... **2.80**

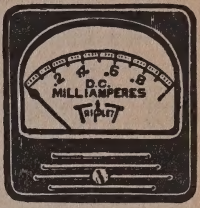
To Order: When ordering specify Model, range, type and catalog number from the appropriate tables below. Example, 320-G, 0–1, DC Ammeter, 1029702.

MILLIAMPERES D.C.
Triplett

E



B

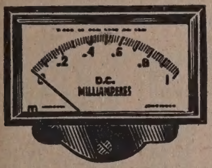


F

DIMENSIONS

Model	Nom. Size	Fig.	Scale Lgth.	Flange Size, W. x H.	Body Size, Dia. x Depth	Term. Extend
320-G*	3½″	A	3.16″	3.50″ x 2.99″	2.75″ x 1.39″	.73″
330-G	3½″	A	2.68″	3.50″ x 2.99″	2.75″ x 1.39″	.73″
320-GL†	3½″	B	3.16″	3.743″ x 3.233″	2.156″ x 1.105″	.367″
330-GL	3½″	B	2.62″	3.743″ x 3.233″	2.156″ x 1.105″	.367″
320-GL/B‡	3½″	C	3.16″	3.86″ x 2.911″	2.156″ x 1.105″	.367″
330-GL/B	3½″	C	2.62″	3.86″ x 2.911″	2.156″ x 1.105″	.367″
320-R	3½″	D	2.96″	3.954″ x 2.673″	2.156″ x 1.311″	.75″
330-R	3½″	D	2.50″	3.954″ x 2.673″	2.156″ x 1.311″	.75″
321-T§	3½″	E	2.44″	3.50″ dia.	2.75″ x .92″	.75″
331-S	3½″	E	2.22″	3.50″ dia.	2.75″ x 1.312″	.75″
327-T#	3½″	F	2.49″	3.00″ x 3.00″	2.75″ x .987″	.75″
337-S	3½″	F	2.22″	3.00″ x 3.00″	2.75″ x 1.375″	.75″
420•	4½″	G	4.04″	4.625″ x 4.187″	2.75″ x .843″	.75″
430	4½″	G	3.60″	4.625″ x 4.187″	2.75″ x .968″	.75″
420-G▴	4½″	A	4.03″	4.55″ x 4.068″	2.75″ x 1.39″	.73″
430-G	4½″	A	3.43″	4.55″ x 4.068″	2.75″ x 1.39″	.73″
420-GL■	4½″	B	4.03″	4.718″ x 4.218″	2.203″ x 1.105″	.73″
430-GL	4½″	B	3.36″	4.718″ x 4.218″	2.203″ x 1.105″	.73″
420-GL/B♦	4½″	C	4.03″	4.96″ x 3.749″	2.203″ x 1.105″	.73″
430-GL/B	4½″	C	3.36″	4.96″ x 3.749″	2.203″ x 1.105″	.73″
420-R	4½″	D	3.45″	4.50″ x 2.97″	2.203″ x 1.311″	.75″
430-R	4½″	D	2.87″	4.50″ x 2.97″	2.203″ x 1.311″	.75″

*Same size for 340-G and 350-G. †Same size for 340-GL and 350-GL. ‡Same size for 340-GL/B and 350-GL/B. §Same size for 341-T and 351-T. #Same size for 347-T and 357-T. •Same size for 440 and 450. ▴Same size for 440-G and 450-G. ■Same size for 440-GL and 450-GL. ♦Same size for 440-GL/B and 450-GL/B.



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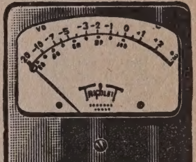


G

3.5″ PANEL METERS

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	320-R Number	321-T Number	327-T Number	Net Each, Lots of 1-24	25-49	50 Up
0–50	2300	1069715	1063615	1063715	1065115	1065615	1065715	$26.00	$20.80	$19.50
0–100	825	1069718	1063618	1063718	1065118	1065618	1065718	24.30	19.44	18.23
0–200	360	1069720	1063620	1063720	1065120	1065620	1065720	22.60	18.08	16.95
0–500	156	1069725	1063625	1063725	1065125	1065625	1065725	21.40	17.12	16.05

DC MICROAMMETERS (SUSPENSION TYPE)

Range	Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	320-R Number	321-T Number	327-T Number	1-24	25-49	50 Up
0–5	15000	8069708	8063608	8063708	8065108	8065608	8065708	$49.10	$39.28	$36.83
0–10	7500	8069710	8063610	8063710	8065110	8065610	8065710	42.20	33.76	31.65
0–20	2500	8069712	8063612	8063712	8065112	8065612	8065712	36.50	29.20	27.38
0–50	825	8069715	8063615	8063715	8065115	8065615	8065715	29.00	23.20	21.75
0–100	360	8069718	8063618	8063718	8065118	8065618	8065718	26.00	20.80	19.50
0–200	156	8069720	8063620	8063720	8065120	8065620	8065720	24.90	19.92	18.68
0–500	40	8069725	8063625	8063725	8065125	8065625	8065725	24.30	19.44	18.23
0–1000*	12.5	8069729	8063629	8063729	....	8065629	8065729	23.70	18.96	17.78
50–0–50	360	8069739	8063639	8063739	....	8065639	8065739	26.00	20.80	19.50
100–0–100	156	8069740	8063640	8063740	....	8065640	8065740	24.90	19.92	18.68
500–0–500	12.5	8069743	8063643	8063743	....	8065643	8065743	23.70	18.96	17.78
40–0–40	1700	8069745	8063645	8063745	....	....	....	45.30	36.24	33.98

*Reads 0–1 mA.

DC MILLIAMMETERS

Range	Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	320-R Number	321-T Number	327-T Number	1-24	25-49	50 Up
0–1	55	1019702	1013602	1013702	1015102	1015602	1015702	$20.30	$16.24	$15.23
0–5	8.5	1019708	1013608	1013708	1015108	1015608	1015708	20.30	16.24	15.23
0–10	3.1	1019710	1013610	1013710	1015110	1015610	1015710	20.30	16.24	15.23
0–25	2.0	1019713	1013613	1013713	....	1015613	1015713	20.30	16.24	15.23
0–50	1.0	1019715	1013615	1013715	1015115	1015615	1015715	20.30	16.24	15.23
0–100	.50	1019718	1013618	1013718	1015118	1015618	1015718	20.30	16.24	15.23
0–200	.25	1019720	1013620	1013720	1015120	1015620	1015720	20.30	16.24	15.23
0–500	.10	1019725	1013625	1013725	1015125	1015625	1015725	20.30	16.24	15.23

DC AMMETERS*

Range	Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	320-R Number	321-T Number	327-T Number	1-24	25-49	50 Up
0–1	....	1029702	1023602	1023702	1025102	1025602	1025702	$20.90	$16.72	$15.68
0–5	....	1029708	1023608	1023708	1025108	1025608	1025708	20.90	16.72	15.68
0–10	....	1029710	1023610	1023710	1025110	1025610	1025710	20.90	16.72	15.68
0–30	....	1029714	1023614	1023714	....	1025614	1025714	20.90	16.72	15.68
0–50	....	1029715	1023615	1023715	1025115	1025615	1025715	20.90	16.72	15.68

*For ranges above 50 amps, see DC Ammeter Shunts.

DC VOLTMETERS (1000 OHMS/VOLT)

Range	Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	320-R Number	321-T Number	327-T Number	1-24	25-49	50 Up
0–5	....	1049708	1043608	1043708	1045108	1045608	1045708	$22.10	$17.68	$16.58
0–10	....	1049710	1043610	1043710	1045110	1045610	1045710	22.10	17.68	16.58
0–25	....	1049713	1043613	1043713	1045113	1045613	1045713	22.10	17.68	16.58
0–30	....	1049714	1043614	1043714	....	1045614	1045714	22.10	17.68	16.58
0–50	....	1049715	1043615	1043715	1045115	1045615	1045715	22.10	17.68	16.58
0–100	....	1049718	1043618	1043718	....	1045618	1045718	22.10	17.68	16.58
0–150	....	1049719	1043619	1053719	1045119	1045619	1045719	22.10	17.68	16.58
0–200	....	1049720	1043620	1043720	....	1045620	1045720	22.10	17.68	16.58
0–250	....	1049721	1043621	1043721	....	1045621	1045721	22.10	17.68	16.58
0–500	....	1049725	1043625	1043725	1045125	1045625	1045725	22.60	18.08	16.95
0–1000*	....	1049729	1043629	1043729	....	1045629	1045729	31.10	24.88	23.33
0–5000*	....	1049733	1043633	1043733	....	1045633	1045733	37.00	29.60	27.75

*2000 Ohms/Volt; external multiplier box furnished.

CONTACT US FOR AVAILABILITY FOR ADDITIONAL RATINGS

3.5″ PANEL METERS (CONTINUED)
DC MILLIVOLTMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	320-R Number	321-T Number	327-T Number	Net Each, Lots of		
								1-24	25-49	50 Up
0–50	6.7	1039715	1033615	1033715	1035115	1035615	1035715	$20.90	$16.72	$15.68
0–100	13.5	1039718	1033618	1033718	....	1035618	1035718	20.90	16.72	15.68
0–150	20.2	1039719	1033619	1033719	....	1035619	1035719	20.90	16.72	15.68

DC MILLIVOLTMETERS (SUSPENSION TYPE)

0–5	10	8039708	8033608	8033708	....	8035608	8035708	$37.50	$30.00	$28.13
0–10	23	8039710	8033610	8033710	....	8035610	8035710	34.10	27.28	25.58
0–15	35	8039711	8033611	8033711	....	8035611	8035711	34.10	27.28	25.58
0–25	48	8039713	8033613	8033713	....	8035613	8035713	29.40	23.52	22.05

AC MILLIAMMETERS

Range	Resis., Ohms	330-G Number	330-GL Number	330-GL/B Number	330-R Number	331-S Number	337-S Number	Net Each, Lots of		
								1-24	25-49	50 Up
0–10	4000	1129710	1123610	1123710	1125110	1125610	1125710	$19.70	$15.76	$14.78
0–50	120	1129715	1123615	1123715	....	1125615	1125715	19.70	15.76	14.78
0–100	40	1129718	1123618	1123718	1125118	1125618	1125718	19.70	15.76	14.78
0–250	5.9	1129721	1123621	1123721	....	1125621	1125721	19.70	15.76	14.78
0–500	1.55	1129725	1123625	1123725	1125125	1125625	1125725	19.70	15.76	14.78

AC AMMETERS

0–1	.38	1109702	1103602	1103702	1105102	1105602	1105702	$19.70	$15.76	$14.78
0–2	.092	1109704	1103604	1103704	....	1105604	1105704	19.70	15.76	14.78
0–3	.039	1109706	1103606	1103706	....	1105606	1105706	19.70	15.76	14.78
0–5	.014	1109708	1103608	1103708	1105108	1105608	1105708	19.70	15.76	14.78
0–10	.004	1109710	1103610	1103710	1105110	1105610	1105710	19.70	15.76	14.78
0–15	.003	1109711	1103611	1103711	1105111	1105611	1105711	19.70	15.76	14.78
0–25	.002	1109713	1103613	1103713	1105113	1105613	1105713	19.70	15.76	14.78
0–30	.001	1109714	1103614	1103714	1105114	1105614	1105714	19.70	15.76	14.78
0–50	.00035	1109715	1103615	1103715	1105115	1105615	1105715	19.70	15.76	14.78

AC VOLTMETERS

0–10	10	1119710	1113610	1113710	1115110	1115610	1115710	$19.70	$15.76	$14.78
0–50	50	1119715	1113615	1113715	1115115	1115615	1115715	19.70	15.76	14.78
0–100	91	1119718	1113618	1113718	....	1115618	1115718	19.70	15.76	14.78
0–150	125	1119719	1113619	1113719	1115119	1115619	1115719	20.90	16.72	15.68
0–250	144	1119721	1113621	1113721	....	1115621	1115721	20.90	16.72	15.68
0–300	144	1119722	1113622	1113722	1115122	1115622	1115722	20.90	16.72	15.68
0–500*	125	1119725	1113625	1113725	1115125	1115625	1115725	33.60	26.88	25.20
90–130	45	1119744	1113644	1113744	....	....	....	35.10	28.08	26.33

*External multiplier box furnished.

AC VOLTMETERS (RECTIFIER TYPE)

Range	Ohms/ Volt	350-G Number	350-GL Number	350-GL/B Number	350-R Not Available	351-T Number	357-T Number	Net Each, Lots of		
								1-24	25-49	50 Up
0–5	1000	1179708	1173608	1173708	....	1175608	1175708	$29.00	$23.20	$21.75
0–10	1000	1179710	1173610	1173710	....	1175610	1175710	29.00	23.20	21.75
0–50	1000	1179715	1173615	1173715	....	1175615	1175715	29.00	23.20	21.75
0–150	1000	1179719	1173619	1173719	....	1175619	1175719	29.00	23.20	21.75
0–300	1000	1179722	1173622	1173722	....	1175622	1175722	29.00	23.20	21.75

DECIBEL METERS

dB	....	1089750	1083650	1083750	....	1085650	1085750	$30.10	$24.08	$22.58
dB Illum.	....	....	....	....	....	1085651	1085751	33.00	26.40	24.75

VOLUME UNIT METERS

A Scale	....	1099746	1093646	1093746	....	1095646	1095746	$34.80	$27.84	$26.10
A Scale Illum.	....	....	....	....	....	1095647	1095747	37.60	30.08	28.20
B Scale	....	1099748	1093648	1093748	....	1095648	1095748	34.80	27.84	26.10
B Scale Illum.	....	....	....	....	....	1095649	1095749	37.60	30.08	28.20

RF THERMOAMMETERS

Range	Resis., Ohms	340-G Number	340-GL Number	340-GL/B Number	340-R Not Available	341-T Number	347-T Number	Net Each, Lots of		
								1-24	25-49	50 Up
0–1	.35	1079702	1073602	1073702	....	1075602	1075702	$24.90	$19.92	$18.68
0–1.5	.21	1079703	1073603	1073703	....	1075603	1075703	24.90	19.92	18.68
0–5	.06	1079708	1073608	1073708	....	1075608	1075708	24.90	19.92	18.68
0–10	.03	1079710	1073610	1073710	....	1075610	1075710	24.90	19.92	18.68

4.5″ PANEL METERS
DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	420 Number	420-G Number	420-GL Number	420-GL/B Number	420-R Number	Net Each, Lots of		
							1-24	25-49	50 Up
0–50	2300	1066215	1069815	1067215	1067315	1067815	$27.20	$21.76	$20.40
0–100	825	1066218	1069818	1067218	1067318	1067818	25.50	20.40	19.13
0–200	360	1066220	1069820	1067220	1067320	1067820	23.70	18.96	17.78
0–500	156	1066225	1069825	1067225	1067325	1067825	22.60	18.08	16.95

DC MICROAMMETERS (SUSPENSION TYPE)

0–5	15000	8066208	8069808	8067208	8067308	8067808	$50.30	$40.24	$37.73
0–10	7500	8066210	8069810	8067210	8067310	8067810	43.50	34.80	32.63
0–20	2500	8066212	8069812	8067212	8067312	8067812	37.60	30.08	28.20
0–50	825	8066215	8069815	8067215	8067315	8067815	30.10	24.08	22.58
0–100	360	8066218	8069818	8067218	8067318	8067818	27.20	21.76	20.40
0–200	156	8066220	8069820	8067220	8067320	8067820	26.00	20.80	19.50
0–500	40	8066225	8069825	8067225	8067325	8067825	25.50	20.40	19.13
0–1000†	12.5	8066229	8069829	8067229	8067329	....	24.90	19.92	18.68
50–0–50	360	8066239	8069839	8067239	8067339	....	27.20	21.76	20.40
100–0–100	156	8066240	8069840	8067240	8067340	....	26.00	20.80	19.50
500–0–500	12.5	8066243	8069843	8067243	8067343	....	24.90	19.92	18.68
40–0–40	1700	....	8069845	8067245	8067345	....	46.70	37.36	35.03

†Reads 0–1 mA.

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

4.5″ PANEL METERS (CONTINUED)

DC MILLIAMMETERS

Range	Resis., Ohms	420 Number	420-G Number	420-GL Number	420-GL/B Number	420-R Number	Net Each, Lots of 1-24	25-49	50 Up
0-1	55	1016202	1019802	1017202	1017302	1017802	$21.40	$17.12	$16.05
0-5	8.5	1016208	1019808	1017208	1017308	1017808	21.40	17.12	16.05
0-10	3.1	1016210	1019810	1017210	1017310	1017810	21.40	17.12	16.05
0-25	2.0	1016213	1019813	1017213	1017313		21.40	17.12	16.05
0-50	1.0	1016215	1019815	1017215	1017315	1017815	21.40	17.12	16.05
0-100	.5	1016218	1019818	1017218	1017318	1017818	21.40	17.12	16.05
0-200	.25	1016220	1019820	1017220	1017320	1017820	21.40	17.12	16.05
0-500	.1	1016225	1019825	1017225	1017325	1017825	21.40	17.12	16.05

DC AMMETERS

Range	Resis., Ohms	420 Number	420-G Number	420-GL Number	420-GL/B Number	420-R Number	1-24	25-49	50 Up
0-1		1026202	1029802	1027202	1027302	1027802	$22.10	$17.68	$16.58
0-5		1026208	1029808	1027208	1027308	1027808	22.10	17.68	16.58
0-10		1026210	1029810	1027210	1027310	1027810	22.10	17.68	16.58
0-30		1026214	1029814	1027214	1027314		22.10	17.68	16.58
0-50		1026215	1029815	1027215	1027315	1027815	22.10	17.68	16.58

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	420 Number	420-G Number	420-GL Number	420-GL/B Number	420-R Number	1-24	25-49	50 Up
0-50	6.7	1036215	1039815	1037215	1037315	1037815	$22.10	$17.68	$16.58
0-100	13.5	1036218	1039818	1037218	1037318		22.10	17.68	16.58
0-150	20.2	1036219	1039819	1037219	1037319		22.10	17.68	16.58

DC MILLIVOLTMETERS (SUSPENSION TYPE)

Range	Resis., Ohms	420 Number	420-G Number	420-GL Number	420-GL/B Number	420-R Number	1-24	25-49	50 Up
0-5	10	8036208	8039808	8037208	8037308		$39.70	$31.76	$29.78
0-10	23	8036210	8039810	8037210	8037310		36.30	29.04	27.23
0-15	35	8036211	8039811	8037211	8037311		36.30	29.04	27.23
0-25	48	8036213	8039813	8037213	8037313		30.50	24.40	22.78

DC VOLTMETERS (1000 OHMS/VOLT)

Range	Resis., Ohms	420 Number	420-G Number	420-GL Number	420-GL/B Number	420-R Number	1-24	25-49	50 Up
0-5		1046208	1049808	1047208	1047308	1047808	$23.20	$18.56	$17.40
0-10		1046210	1049810	1047210	1047310	1047810	23.20	18.56	17.40
0-25		1046213	1049813	1047213	1047313	1047813	23.20	18.56	17.40
0-30		1046214	1049814	1047214	1047314		23.20	18.56	17.40
0-50		1046215	1049815	1047215	1047315	1047815	23.20	18.56	17.40
0-100		1046218	1049818	1047218	1047318		23.20	18.56	17.40
0-150		1046219	1049819	1047219	1047319	1047819	23.20	18.56	17.40
0-200		1046220	1049820	1047220	1047320		23.20	18.56	17.40
0-250		1046221	1049821	1047221	1047321		23.20	18.56	17.40
0-500		1046225	1049825	1047225	1047325	1047825	23.70	18.96	17.78
0-1000*		1046229	1049829	1047229	1047229		32.20	25.76	24.15
0-5000*		1046233	1049833	1047233	1047333		38.10	30.48	28.58

*2000 Ohms/Volt; external multiplier box furnished.

AC MILLIAMMETERS

Range	Resis., Ohms	430 Number	430-G Number	430-GL Number	430-GL/B Number	430-R Number	Net Each, Lots of 1-24	25-49	50 Up
0-10	4000	1126210	1129810	1127210	1127310	1127810	$20.90	$16.72	$15.68
0-50	120	1126215	1129815	1127215	1127315		20.90	16.72	15.68
0-100	40	1126218	1129818	1127218	1127318	1127818	20.90	16.72	15.68
0-250	5.9	1126221	1129821	1127221	1127321		20.90	16.72	15.68
0-500	1.55	1126225	1129825	1127225	1127325	1127825	20.90	16.72	15.68

AC AMMETERS*

Range	Resis., Ohms	430 Number	430-G Number	430-GL Number	430-GL/B Number	430-R Number	1-24	25-49	50 Up
0-1	.38	1106202	1109802	1107202	1107302	1107802	$20.90	$16.72	$15.68
0-2	.092	1106204	1109804	1107204	1107304	1107804	20.90	16.72	15.68
0-3	.039	1106206	1109806	1107206	1107306	1107806	20.90	16.72	15.68
0-5	.014	1106208	1109808	1107208	1107308	1107808	20.90	16.72	15.68
0-10	.004	1106210	1109810	1107210	1107310	1107810	20.90	16.72	15.68
0-15	.003	1106211	1109811	1107211	1107311	1107811	20.90	16.72	15.68
0-25	.002	1106213	1109813	1107213	1107313	1107813	20.90	16.72	15.68
0-30	.001	1106214	1109814	1107214	1107314	1107814	20.90	16.72	15.68
0-50	.00035	1106215	1109815	1107215	1107315	1107815	20.90	16.72	15.68

*For standard ranges above 50 amps; see AC Ammeter Current Transformers.

AC VOLTMETERS

Range	Resis., Ohms	430 Number	430-G Number	430-GL Number	430-GL/B Number	430-R Number	1-24	25-49	50 Up
0-10	10	1116210	1119810	1117210	1117310	1117810	$20.90	$16.72	$15.68
0-50	50	1116215	1119815	1117215	1117315	1117815	20.90	16.72	15.68
0-100	91	1116218	1119818	1117218	1117318		20.90	16.72	15.68
0-150	125	1116219	1119819	1117219	1117319	1117819	22.10	17.68	16.58
0-250	144	1116221	1119821	1117221	1117321		22.10	17.68	16.58
0-300	144	1116222	1119822	1117222	1117322	1117822	22.10	17.68	16.58
0-500†	125	1116225	1119825	1117225	1117325	1117825	34.80	27.84	26.10
90-130	45	1116244	1119844	1117244	1117344		36.30	29.04	27.23

†External multiplier box furnished.

AC VOLTMETERS (RECTIFIER TYPE)

Range	Ohms/ Volt	450 Number	450-G Number	450-GL Number	450-GL/B Number	450-R Not Available	Net Each, Lots of 1-24	25-49	50 Up
0-5	1000	1176208	1179808	1177208	1177308		$30.10	$24.08	$22.58
0-10	1000	1176210	1179810	1177210	1177310		30.10	24.08	22.58
0-50	1000	1176215	1179815	1177215	1177315		30.10	24.08	22.58
0-150	1000	1176219	1179819	1177219	1177319		30.10	24.08	22.58
0-300	1000	1176222	1179822	1177222	1177322		30.10	24.08	22.58

DECIBEL METERS

Range	Ohms/ Volt	450 Number	450-G Number	450-GL Number	450-GL/B Number	450-R Not Available	1-24	25-49	50 Up
dB		1086250	1089850	1087250	1087350		$31.30	$25.04	$23.48
dB Illum.		1086251					34.20	27.36	25.65

VOLUME UNIT METERS

Range	Ohms/ Volt	450 Number	450-G Number	450-GL Number	450-GL/B Number	450-R Not Available	1-24	25-49	50 Up
A Scale		1096246	1099846	1097246	1097346		$35.90	$28.72	$26.93
A Scale Illum.		1096247					38.90	31.12	29.18
B Scale		1096248	1099848	1097248	1097348		35.90	28.72	26.93
B Scale Illum.		1096249					38.90	31.12	29.18

RF THERMOAMMETERS

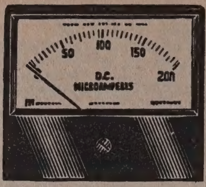
Range	Resis., Ohms	440 Number	440-G Number	440-GL Number	440-GL/B Number	440-R Not Available	Net Each, Lots of 1-24	25-49	50 Up
0-1	.35	1076202	1079802	1077202	1077302		$26.00	$20.80	$19.50
0-1.5	.21	1076203	1079803	1077203	1077303		26.00	20.80	19.50
0-5	.06	1076208	1079808	1077208	1077308		26.00	20.80	19.50
0-10	.03	1076210	1079810	1077210	1077310		26.00	20.80	19.50

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

TRIPLETT Panel Meters

2
4
6
8
DC MILLIAMPERES

A



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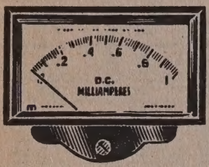

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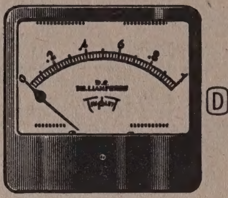


D

5½″ AND 6½″ PANEL METERS

Similar to panel meters shown on previous pages, but for different size. Same specifications. Bezels and illumination kit available for 5½″ G-Series.

To Order: Specify model, type range and Triplett number from the tables below. Example, 520-G, 0–5, DC Voltmeter, 1049908.

DIMENSIONS

Model	Nom. Size	Fig.	Scale Lgth.	Flange Size, In., W. x H.	Body Size, In. Dia. x Depth	Term. Extend
520-G	5½″	A	5.0″	5.611 x 4.484	2.75 x 1.39	.73″
530-G	5½″	A	4.25″	5.611 x 4.484	2.75 x 1.39	.73″
520-GL	5½″	B	5.0″	5.852 x 4.727	2.75 x 1.105	.73″
530-GL	5½″	B	4.25″	5.852 x 4.727	2.75 x 1.105	.73″
520-GL/B	5½″	C	5.0″	6.06 x 4.532	2.75 x 1.105	.73″
530-GL/B	5½″	C	4.25″	6.06 x 4.532	2.75 x 1.105	.73″
626	6½″	D	5.60″	6.00 x 5.375	3.125 x 1.031	.75″
636	6½″	D	5.10″	6.00 x 5.375	3.125 x 1.031	.75″

Triplett Number 13-240—Metal bezels for 5½″ models. Size, 6.06″ x 3.30″. For panel cutout, 5.875″ x 3.156″. Net Each. . **$2.40**

Triplett Number 66-83—Illumination kit for 5½″ G-series. Net Each. **$3.10**

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	520-G Number	520-GL Number	520-GL/B Number	626 Number	Net Each, Lots of		
						1-24	25-49	50 Up
0–50	2300	1069915	1068215	1068315	1068615	$34.80	$27.84	$26.10
0–100	825	1069918	1068218	1068318	1068618	33.00	26.40	24.75
0–200	360	1069920	1068220	1068320	1068620	31.30	25.04	23.48
0–500	156	1069925	1068225	1068325	1068625	30.10	24.08	22.58

DC MICROAMMETERS (SUSPENSION TYPE)

0–10	7500	8069910	8068210	8068310	8068610	$50.90	$40.72	$38.18
0–20	2500	8069912	8068212	8068312	8068612	45.30	36.24	33.98
0–50	825	8069915	8068215	8068315	8068615	37.60	30.08	28.20
0–100	360	8069918	8068218	8068318	8068618	34.80	27.84	26.10
0–200	156	8069920	8068220	8068320	8068620	33.60	26.88	25.20
0–500	40	8069925	8068225	8068325	8068625	33.00	26.40	24.75

DC MILLIAMMETERS

0–1	55	1019902	1018202	1018302	1018602	$29.00	$23.20	$21.75
0–5	8.5	1019908	1018208	1018308	1018608	29.00	23.20	21.75
0–10	3.1	1019910	1018210	1018310	1018610	29.00	23.20	21.75
0–50	1.0	1019915	1018215	1018315	1018615	29.00	23.20	21.75
0–100	.50	1019918	1018218	1018318	1018618	29.00	23.20	21.75
0–200	.25	1019920	1018220	1018320	1018620	29.00	23.20	21.75
0–500	.10	1019925	1018225	1018325	1018625	29.00	23.20	21.75

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

0–50	6.7	1039915	1038215	1038315	1038615	$29.50	$23.60	$22.13

DC VOLTMETERS (1000 OHMS/VOLT)

Range	Resis., Ohms	520-G Number	520-GL Number	520-GL/B Number	626 Number	Net Each, Lots of		
						1-24	25-49	50 Up
0–5	....	1049908	1048208	1048308	1048608	$30.70	$24.56	$23.03
0–10	....	1049910	1048210	1048310	1048610	30.70	24.56	23.03
0–25	....	1049913	1048213	1048313	1048613	30.70	24.56	23.03
0–30	....	1049914	1048214	1048314	1048614	30.70	24.56	23.03
0–50	....	1049915	1048215	1048315	1048615	30.70	24.56	23.03
0–150	....	1049919	1048219	1048319	1048619	30.70	24.56	23.03
0–500	....	1049925	1048225	1048325	1048625	31.30	25.04	23.48

DC AMMETERS

0–1	....	1029902	1028202	1028302	1028602	$29.50	$23.60	$22.13
0–5	....	1029908	1028208	1028308	1028608	29.50	23.60	22.13
0–10	....	1029910	1028210	1028310	1028610	29.50	23.60	22.13
0–30	....	1029914	1028214	1028314	1028614	29.50	23.60	22.13
0–50	....	1029915	1028215	1028315	1028615	29.50	23.60	22.13

AC MILLIAMMETERS

Range	Resis., Ohms	530-G Number	530-GL Number	530-GL/B Number	636 Number	Net Each, Lots of		
						1-24	25-49	50 Up
0–10	4000	1129910	1128210	1128310	1128610	$28.40	$22.72	$21.30
0–100	40	1129918	1128218	1128318	1128618	28.40	22.72	21.30
0–500	1.55	1129925	1128225	1128325	1128625	28.40	22.72	21.30

AC AMMETERS

0–1	.38	1109902	1108202	1108302	1108602	$28.40	$22.72	$21.30
0–5	.014	1109908	1108208	1108308	1108608	28.40	22.72	21.30
0–10	.004	1109910	1108210	1108310	1108610	28.40	22.72	21.30
0–15	.003	1109911	1108211	1108311	1108611	28.40	22.72	21.30
0–25	.002	1109913	1108213	1108313	1108613	28.40	22.72	21.30
0–30	.001	1109914	1108214	1108314	1108614	28.40	22.72	21.30
0–50	.00035	1109915	1108215	1108315	1108615	28.40	22.72	21.30

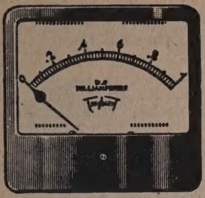
AC VOLTMETERS

Range	Resis., Ohms	530-G Number	530-GL Number	530-GL/B Number	636 Number	Net Each, Lots of		
						1-24	25-49	50 Up
0–10	10	1119910	1118210	1118310	1118610	$28.40	$22.72	$21.30
0–50	50	1119915	1118215	1118315	1118615	28.40	22.72	21.30
0–150	125	1119919	1118219	1118313	1118619	29.50	23.60	22.13
0–300	144	1119922	1118222	1118322	1118622	29.50	23.60	22.13
0–500*	125	1119925	1118225	1118325	1118625	42.20	33.76	31.65

*External multiplier box furnished.

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

TRIPLETT Panel Meters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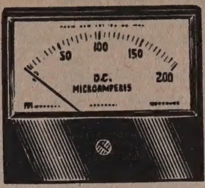
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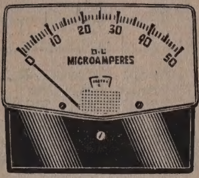

C

7½″ AND 8½″ PANEL METERS

Similar to panel meters shown on previous pages, but for size. **7½″ Models** are available with glass window, thermosetting plastic case and four stud mounting. Optional illumination is available on certain models; write for information. **GL Series** comes with glass window, flat back thermosetting plastic case and four stud mounting. **M Series** includes thermoplastic front and back. Thermosetting plastic accessory case is available for 8½″ models; write for information. **To Order:** Specify model, range, type and Triplett number. Example, model 736, 0–1, AC Ammeter, 1108902.

DIMENSIONS

Model	Nom. Size	Fig.	Scale Lgth.	Flange Size, In., W. x H.	Body Size, In. Dia. x Depth	Term. Extend
726	7½″	A	6.11″	7.531 x 6.906	3.50 x 1.062	.75″
736	7½″	A	5.47″	7.531 x 6.906	3.50 x 1.125	.75″
820-GL	8½″	B	6.25″	7.75 x 6.50	2.781 x 1.105	.781″
830-GL	8½″	B	6.25″	7.75 x 6.50	2.781 x 1.105	.781″
820-M	8½″	C	7.00″	7.64 x 6.40	3.27 x 1.18	.781″

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	726 Number	Net Each, Lots of			820-GL Number	820-M Number	Net Each, Lots of		
			1-24	25-49	50 Up			1-24	25-49	50 Up
0–50	2300	1068915	$37.10	$29.68	$27.83	1069115	1069415	$40.50	$32.40	$30.38
0–100	825	1068918	35.30	28.24	26.48	1069118	1069418	38.90	31.12	29.18
0–200	360	1068920	33.60	26.88	25.20	1069120	1069420	37.10	29.68	27.83
0–500	156	1068925	32.50	26.00	24.38	1069125	1069425	35.90	28.72	26.93

DC MICROAMMETERS (SUSPENSION TYPE)

0–10	7500	8068910	$53.20	$42.56	$39.90	8069110	8069410	$56.80	$45.44	$42.60
0–20	2500	8068912	47.60	38.08	35.70	8069112	8069412	50.90	40.72	38.18
0–50	825	8068915	39.90	31.92	29.93	8069115	8069415	43.50	34.80	32.63
0–100	360	8068918	37.10	29.68	27.83	8069118	8069418	40.50	32.40	30.38
0–200	156	8068920	35.90	28.72	26.93	8069120	8069420	39.40	31.52	29.55
0–500	40	8068925	35.30	28.24	26.48	8069125	8069425	38.90	31.12	29.18

DC MILLIAMMETERS

0–1	55	1018902	$31.30	$25.04	$23.48	1019102	1019402	$34.80	$27.84	$26.10
0–5	8.5	1018908	31.30	25.04	23.48	1019108	1019408	34.80	27.84	26.10
0–10	3.1	1018910	31.30	25.04	23.48	1019110	1019410	34.80	27.84	26.10
0–50	1.0	1018915	31.30	25.04	23.48	1019115	1019415	34.80	27.84	26.10
0–100	.5	1018918	31.30	25.04	23.48	1019118	1019418	34.80	27.84	26.10
0–200	.25	1018920	31.30	25.04	23.48	1019120	1019420	34.80	27.84	26.10
0–500	.1	1018925	31.30	25.04	23.48	1019125	1019425	34.80	27.84	26.10

DC AMMETERS

0–1	....	1028902	$31.90	$25.52	$23.93	1029102	1029402	$35.30	$28.24	$26.48
0–5	....	1028908	31.90	25.52	23.93	1029108	1029408	35.30	28.24	26.48
0–10	....	1028910	31.90	25.52	23.93	1029110	1029410	35.30	28.24	26.48
0–30	....	1028914	31.90	25.52	23.93	1029114	1029414	35.30	28.24	26.48
0–50	....	1028915	31.90	25.52	23.93	1029115	1029415	35.30	28.24	26.48

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	726 Number	Net Each, Lots of			820-GL Number	820-M Number	Net Each, Lots of		
			1-24	25-49	50 Up			1-24	25-49	50 Up
0–50	....	1038915	$31.90	$25.52	$23.93	1039115	1039415	$35.30	$28.24	$26.48

DC VOLTMETERS (1000 OHMS/VOLT)

0–5	....	1048908	$33.00	$26.40	$24.75	1049108	1049408	$36.50	$29.20	$27.38
0–10	....	1048910	33.00	26.40	24.75	1049110	1049410	36.50	29.20	27.38
0–25	....	1048913	33.00	26.40	24.75	1049113	1049413	36.50	29.20	27.38
0–30	....	1048914	33.00	26.40	24.75	1049114	1049414	36.50	29.20	27.38
0–50	....	1048915	33.00	26.40	24.75	1049115	1049415	36.50	29.20	27.38
0–150	....	1048919	33.00	26.40	24.75	1049119	1049419	36.50	29.20	27.38
0–500	....	1048925	33.60	26.88	25.20	1049125	1049425	37.10	29.68	27.83

AC MILLIAMMETERS

Range	Resis., Ohms	736 Number	Net Each, Lots of			830-GL Number	830-M Not Available	Net Each, Lots of		
			1-24	25-49	50 Up			1-24	25-49	50 Up
0–10	4000	1128910	$30.70	$24.56	$23.03	1129110	....	$34.20	$27.36	$25.65
0–100	40	1128918	30.70	24.56	23.03	....	....	....	....	....
0–500	1.55	1128925	30.70	24.56	23.03	....	....	....	....	....

AC AMMETERS

0–1	.38	1108902	$30.70	$24.56	$23.03	1109102	....	$34.20	$27.36	$25.65
0–5	.014	1108908	30.70	24.56	23.03	1109108	....	34.20	27.36	25.65
0–10	.004	1108910	30.70	24.56	23.03	....	....	....	....	....
0–15	.003	1108911	30.70	24.56	23.03	....	....	....	....	....
0–25	.002	1108913	30.70	24.56	23.03	....	....	....	....	....
0–30	.001	1108914	30.70	24.56	23.03	....	....	....	....	....
0–50	.00035	1108915	30.70	24.56	23.03	....	....	....	....	....

AC VOLTMETERS

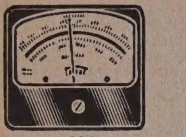
0–10	10	1118910	$30.70	$24.56	$23.03	....	....	....	....	....
0–50	50	1118915	30.70	24.56	23.03	....	....	....	....	....
0–150	125	1118919	31.90	25.52	23.93	1119119	....	$36.50	$29.20	$27.38
0–300	144	1118922	31.90	25.52	23.93	....	....	....	....	....
0–500*	125	1118925	44.60	35.68	33.45	....	....	....	....	....

*External multiplier box furnished.

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

TRIPLETT Panel, Lab Meters

3½" AND 4½" PYROMETERS



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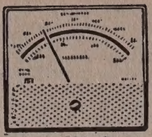
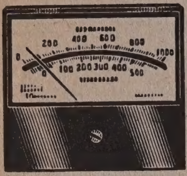


420-G

All styles incorporate cold junction and copper (resistance) compensation. Calibrated for use with Triplett, iron constantan (J) or chromel alumel (K) thermocouples. Thermocouples not included. **Standard DC Input Accuracy:** Specifications are ±2% of full scale. **Minimum Span:** 300° F for full scale deflection. Mirror scales are furnished as standard on all pyrometers. **To Order:** Specify model, range, type, Triplett number.

DIMENSIONS

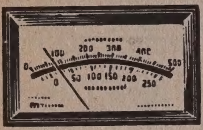
Model	Nom. Size	Scale Lgth.	Flange Size, W. x H.	Body Size, Dia. x Depth
320-G	3½"	3.16"	3.5" x 2.99"	2.75" x 1.39"
320-GL	3½"	3.16"	3.743" x 3.233"	2.156" x 1.105"
320-GL/B	3½"	3.16"	3.86" x 2.911"	2.156" x 1.105"
420	4½"	4.04"	4.625" x 4.187"	2.75" x .843"
420-G	4½"	4.03"	4.55" x 4.068"	2.75" x 1.39"
420-GL	4½"	4.03"	4.718" x 4.218"	2.203" x 1.105"
420-GL/B	4½"	4.03"	4.96" x 3.749"	2.203" x 1.105"



320-GL

3½" PYROMETERS

Temperature Range		Thermo-couple Type	Ext. Resis., Ohms	320-G Number	320-GL Number	320-GL/B Number	Net Each, Lots of		
°F	°C						1-24	25-49	50 Up
−150 to +250	−100 to +120	J	10	1139760	1133660	1133760	$39.70	$31.76	$29.78
0 to +300	−20 to +150	J	5	1139761	1133661	1133761	39.70	31.76	29.78
0 to +500	−20 to +260	J	10	1139762	1133662	1133762	39.70	31.76	29.78
0 to +750	−20 to +400	J	10	1139763	1133663	1133763	39.70	31.76	29.78
0 to +1000	−20 to +540	J	10	1139764	1133664	1133764	37.50	30.00	28.13
0 to +1500	−20 to +820	K	10	1139765	1133665	1133765	37.50	30.00	28.13
0 to +2000	−20 to +1200	K	10	1139766	1133666	1133766	37.50	30.00	28.13



320-GL/B

4½" PYROMETERS

Temperature Range		Thermo-couple Type	420 Number	420-G Number	420-GL Number	420-GL/B Number	Net Each, Lots of		
°F	°C						1-24	25-49	50 Up
−150 to +250	−100 to +120	J	1136260	1139860	1137260	1137360	$40.90	$32.72	$30.68
0 to +300	−20 to +150	J	1136261*	1139861*	1137261*	1137361*	40.90	32.72	30.68
0 to +500	−20 to +260	J	1136262	1139862	1137262	1137362	40.90	32.72	30.68
0 to +750	−20 to +400	J	1136263	1139863	1137263	1137363	40.90	32.72	30.68
0 to +1000	−20 to +540	J	1136264	1139864	1137264	1137364	38.60	30.88	28.95
0 to +1500	−20 to +820	K	1136265	1139865	1137265	1137365	38.60	30.88	28.95
0 to +2000	−20 to +1200	K	1136266	1139866	1137266	1137366	38.60	30.88	28.95

*Ext. Resis., 5 ohms; all others, 10 ohms.

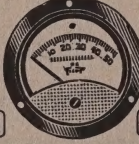
THERMOCOUPLES

Feature stainless steel overbraid (SS) or glass cloth (GC), in protected sheaths. Provide continuous operation to 900° F or a single reading to 1400° F. Resistance tolerance, ±1%. **To Order:** Specify Triplett number.

Triplett Number	Type	Approx. Length, In.	AWG	Overbraid Type	Resis., Ohms	Net Each, Lots of		
						1-24	25-49	50 Up
72-99	J	137	24	GC	10	$ 6·60	$ 5·28	$ 4·95
72-100	J	162	20	GC	5	8·80	7·04	6·60
72-101	J	137	24	SS	10	11·00	8·80	8·25
72-102	J	54	28	GC	10	4·90	3·92	3·68
72-103	K	205	20	GC	10	13·20	10·56	9·90
72-104	K	206	20	SS	10	19·80	15·84	14·85
72-105	K	50	26	GC	10	4·90	3·92	3·68
72-106	K	50	26	SS	10	7·80	6·24	5·85

RUGGEDIZED 1½", 2½" AND 3½" METERS

A



B

Model 127-HR (Fig. A): Rugged, modern construction with meter front designed for maximum readability. Meets government specifications. Scale: 1.5" lg. Flange, 1.75" sq. Body, 1.51" dia. x 1.5" deep.

Model 221-HR (Fig. B): 2½" meter meets MIL-M-10604-C specifications. Heavy diecast window bezel seals window to case with gasket and screws for easy servicing. Gasket-sealed studs provide additional protection. Scale Length: 1.76". Flange, 2.695" dia. Body, 2.21" dia. x 1.281" deep.
Model 321-HR (Fig. B): Same as 221-HR, but 3½" size. Scale Length: 2.38". Flange, 3.51" dia. Body, 2.8" dia. x 1.281" deep.
To Order: Specify both model and Triplett part number.

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	127-HR Number	Net Each, Lots of			221-HR Number	Net Each, Lots of			321-HR Number	Net Each, Lots of		
			1-24	25-49	50 Up		1-24	25-49	50 Up		1-24	25-49	50 Up
0–50	2500*	1061215	$35.90	$28.72	$26.93	1061615	$37.10	$29.68	$27.83	1064115	$38.20	$30.56	$28.65
0–100	1170	1061218	34.20	27.36	25.65	1061618	35.30	28.24	26.48	1064118	36.50	29.20	27.38
0–200	400	1061220	32.50	26.00	24.38	1061620	33.60	26.88	25.20	1064120	34.80	27.84	26.10
0–500	210	1061225	31.30	25.04	23.48	1061625	32.50	26.00	24.38	1064125	33.60	26.88	25.20

*4000 ohms for 127-HR.

DC MICROAMMETERS (SUSPENSION TYPE)

0–20	7500	8061212	$46.30	$37.04	$34.73	....	....	....	....	....	....	....	....
0–50	2300	8061215	38.90	31.12	29.18	....	....	....	....	....	....	....	....

DC MILLIAMMETERS

0–1	55	1011202	$30.10	$24.08	$22.58	1011602	$31.30	$25.04	$23.48	1014102	$32.50	$26.00	$24.38
0–5	8.5	1011208	30.10	24.08	22.58	1011608	31.30	25.04	23.48	1014108	32.50	26.00	24.38
0–10	3.1	1011210	30.10	24.08	22.58	1011610	31.30	25.04	23.48	1014110	32.50	26.00	24.38
0–50	1.0	1011215	30.10	24.08	22.58	1011615	31.30	25.04	23.48	1014115	32.50	26.00	24.38
0–100	.5	1011218	30.10	24.08	22.58	1011618	31.30	25.04	23.48	1014118	32.50	26.00	24.38
0–200	.25	1011220	30.10	24.08	22.58	1011620	31.30	25.04	23.48	1014120	32.50	26.00	24.38
0–500	.10	1011225	30.10	24.08	22.58	1011625	31.30	25.04	23.48	1014125	32.50	26.00	24.38

DC AMMETERS

0–1	....	1021202	$30.70	$24.56	$23.03	1021602	$31.90	$25.52	$23.93	1024102	$33.00	$26.40	$24.75
0–5	....	....	....	....	....	1021608	31.90	25.52	23.93	1024108	33.00	26.40	24.75
0–10	....	....	....	....	....	1021610	31.90	25.52	23.93	1024110	33.00	26.40	24.75

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

0–50	6.7	1031215	$30.70	$24.56	$23.03	1031615	$31.90	$25.52	$23.93	1034115	$33.00	$26.40	$24.75

DC VOLTMETERS (1000 OHMS/VOLT)

0–5	....	1041208	$31.30	$25.04	$23.48	1041608	$33.00	$26.40	$24.75	1044108	$34.20	$27.36	$25.65
0–10	....	1041210	31.30	25.04	23.48	1041610	33.00	26.40	24.75	1044110	34.20	27.36	25.65
0–25	....	1041213	31.30	25.04	23.48	1041613	33.00	26.40	24.75	1044113	34.20	27.36	25.65
0–30	....	1041214	31.30	25.04	23.48	1041614	33.00	26.40	24.75	1044114	34.20	27.36	25.65
0–50	....	1041215	31.30	25.04	23.48	1041615	33.00	26.40	24.75	1044115	34.20	27.36	25.65
0–150	....	1041219	31.30	25.04	23.48	1041619	33.00	26.40	24.75	1044119	34.20	27.36	25.65

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

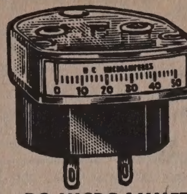
Additional Pyrometers on Pages 430 and 433

TRIPLETT PANEL METERS AND ACCESSORIES

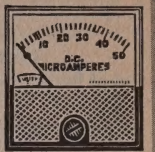
MINIATURE 1½″ PANEL METERS

odel 120: Edgewise meter for horizontal mounting. Scale length, .15″. Panel hole required, 1.605″ x .516″. Self-shielded, dustproof ase. Solder terminals. **Model 120-G:** Panel meter with large dial rea, aluminum insert panel. Scale length, 1.48″. Flange, 1.75″ sq. ody, 1.5″ dia. x 1.3″ deep. Solder terminals. **Model 150:** VU eter, same size as Model 120.

Model 120, 150



Model 120-G



DC VOLTMETERS (1000 OHMS/VOLT)

Range	120 Number	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
0–5	1040308	1041108	$20.90	$16.72	$15.68
0–10	1040310	1041110	20.90	16.72	15.68
0–25	1040313	1041113	20.90	16.72	15.68
0–30	1040314	1041114	20.90	16.72	15.68
0–50	1040315	1041115	20.90	16.72	15.68
0–100	....	1041118	20.90	16.72	15.68
0–150	1040319	1041119	20.90	16.72	15.68
0–200	....	1041120	20.90	16.72	15.68
0–250	....	1041121	20.90	16.72	15.68
0–500*	....	1041125	29.40	23.52	22.05
0–1000*	....	1041129	29.90	23.92	22.43
0–5000*	....	1041133	35.80	28.64	26.85

*2000 ohms/volt; external multiplier box furnished.

DC AMMETERS

Range	Resis., Ohms	120 Number	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	10	1020302	1021102	$19.70	$15.76	$14.78

DC MICROAMMETERS (PIVOT AND JEWEL)

Range	Model 120 Ohms	Model 120 Number	Net 1-24*	Model 120-G Ohms	Model 120-G Number	Net 1-24*
0–50	2300	1060315	$24.90	4000	1061115	$24.90
0–100	825	1060318	23.20	1170	1061118	23.20
0–200	360	1060320	21.40	400	1061120	21.40
0–500	156	1060325	20.30	210	1061125	20.30
50–0–50	825	1060339	23.20			
100–0–100	360	1060340	21.40			
500–0–500	55	1060343	19.10			

*Lots of: 25–49, −20%; 50 Up, −25%.

DC MICROAMMETERS (SUSPENSION TYPE)

Range	Resis., Ohms	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
0–50	2300	8061115	$27.80	$22.24	$20.85
0–100	825	8061118	25.00	20.00	18.75

DC MILLIAMMETERS

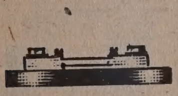
Range	Resis., Ohms	120 Number	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
0–1	55	1010302	1011102	$19.10	$15.28	$14.33
0–5	8.5	1010308	1011108	19.10	15.28	14.33
0–10	3.1	1010310	1011110	19.10	15.28	14.33
0–25	2.0	....	1011113	19.10	15.28	14.33
0–50	1.0	1010315	1011115	19.10	15.28	14.33
0–100	0.50	1010318	1011118	19.10	15.28	14.33
0–200	0.25	1010320	1011120	19.10	15.28	14.33
0–500	0.10	1010325	1011125	19.10	15.28	14.33

DC MILLIVOLTMETERS (PIVOT AND JEWEL)

Range	Resis., Ohms	120 Number	120-G Number	Net Each, Lots of 1-24	25-49	50 Up
0–50	6.7	1030315	1031115	$19.70	$15.76	$14.78
0–100	13.5	....	1031118	19.70	15.76	14.78
0–150	20.2	....	1031119	19.70	15.76	14.78

VU METERS

Triplett Number	Model	Scale Type	Resis., Ohms	Net Each, Lots of 1-24	25-49	50 Up
1090346	150	A	3900	$33.60	$26.88	$25.20
1090348	150	B	3900	33.60	26.88	25.20

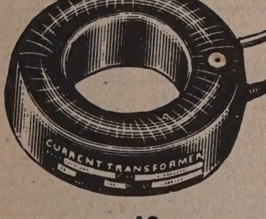


DC Shunt

DC AMMETER SHUNTS

DC Ammeter Shunt requires a basic 0–50 millivolt DC instrument of desired size and style. Dial reads "DC AMPERES". Package includes 5 foot leads.

Triplett Number	Range, Amps	Size, Inches W.	D.	H.	Net Each, Lots of 1-24	25-49	50 Up
91-599	0–1	6.00	1.25	1.55	$ 12.70	$ 10.16	$ 9.53
91-600	0–2	6.00	1.25	1.55	12.70	10.16	9.53
91-601	0–5	6.00	1.25	1.55	12.70	10.16	9.53
91-602	0–10	6.00	1.25	1.55	12.70	10.16	9.53
91-603	0–20	6.00	1.25	1.55	12.70	10.16	9.53
91-604	0–50	6.00	1.25	1.55	12.70	10.16	9.53
91-605	0–100	6.00	1.25	1.55	12.70	10.16	9.53
91-606	0–150	6.00	1.25	1.55	12.70	10.16	9.53
91-607	0–200	6.00	1.25	1.55	12.70	10.16	9.53
91-593	0–250	5.50	1.50	1.25	14.90	11.92	11.18
91-594	0–300	5.50	1.50	1.25	14.90	11.92	11.18
91-595	0–400	5.50	1.50	1.50	18.20	14.56	13.65
91-608	0–500	7.25	1.25	1.20	22.50	18.00	16.88
91-609	0–600	7.25	1.50	1.20	26.80	21.44	20.10
91-610	0–750	7.25	2.00	1.20	33.90	27.12	25.43
91-611	0–800	7.25	2.00	1.20	33.90	27.12	25.43
91-585	0–1000	9.062	3.00	1.70	67.00	53.60	50.25
91-586	0–1200	9.062	3.00	1.70	67.00	53.60	50.25
91-587	0–1500	9.062	3.00	2.20	74.80	59.84	56.10
91-588	0–2000	9.062	4.00	2.20	83.40	66.72	62.55
91-589	0–2500	15.625	4.00	3.20	90.20	72.16	67.65
91-590	0–3000	15.625	4.00	3.20	136.70	109.36	102.53
91-591	0–4000	15.625	5.00	3.20	176.20	140.96	132.15
91-592	0–5000	15.625	5.00	4.20	208.40	166.72	156.30

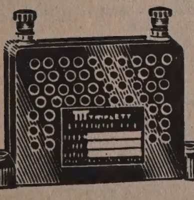


AC Transformer

AC AMMETER CURRENT TRANSFORMERS

For use with 0–5 amp AC instruments. Dial reads "AC AMPERES". All ratios are defined with one primary turn. **Frequency:** 25–400 Hz. **Leads:** 24″ long.

Triplett Number	Range, Amps	VA	Ratio	Size, Inches I.D.	O.D.	Thick	Net Each, Lots of 1-24	25-49	50 Up
23-66	0–75	2	75:5	1.25	3.50	1.00	$17.00	$13.60	$12.75
7099	0–100	2	100:5	1.625	3.125	1.00	17.00	13.60	12.75
2446-20	0–150	2	150:5	1.625	3.125	1.00	17.00	13.60	12.75
7100	0–200	2	200:5	1.625	3.125	1.00	17.00	13.60	12.75
2446-16	0–250	2	250:5	1.625	3.125	1.00	17.00	13.60	12.75
7093	0–300	2	300:5	1.625	3.125	1.00	17.00	13.60	12.75
7091	0–400	2	400:5	1.50	3.50	1.00	17.00	13.60	12.75
7092	0–500	2	500:5	1.50	3.50	1.00	22.40	17.92	16.80
23-11	0–750	5	750:5	2.75	5.00	1.50	31.30	25.04	23.48
23-38	0–1000	5	1000:5	2.75	5.00	1.50	31.30	25.04	23.48



Multiplier Box

EXTERNAL HIGH VOLTAGE MULTIPLIER BOXES

For use with 500 VDC or higher Voltmeters 1½″ and 2½″ sizes; 750 VDC or higher Voltmeters 3½″ size; 1000 VDC or higher Voltmeters 4½″ size; and all 500 VAC or higher Voltmeters. **Ohms/Volt:** 2000 for all DC Voltmeter multiplier boxes; 125 for all AC Voltmeter multiplier boxes.

Triplett Number	Range, Volts	Max. Size, Inches W.	D.	H.	Net Each, Lots of 1-24	25-49	50 Up
2543-01-01	0–500 DC	4.75	1.50	3.50	$ 9.10	$ 7.28	$ 6.83
2543-01-02	0–750 DC	4.75	1.50	3.50	9.20	7.36	6.90
2543-01-03	0–1000 DC	4.75	1.50	3.50	9.70	7.76	7.28
2543-01-04	0–2000 DC	4.75	1.50	3.50	11.30	9.04	8.48
2543-01-05	0–3000 DC	4.75	1.50	3.50	12.90	10.32	9.68
2543-01-06	0–5000 DC	4.75	1.50	3.50	15.50	12.40	11.63
2543-01-07	0–500 AC	4.75	1.50	3.50	12.70	10.16	9.53

CONTACT US FOR AVAILABILITY OF ADDITIONAL RATINGS

Additional Shunts and CT's on Pages 445 and 450

TRIPLETT Test Instruments

MODEL 6028 DIGITAL (2¾ DIGITS) V-O-M

1. 2¾ Digits—Provides high accuracy with resolution to 500 microvolts.
2. 10 Ohms To 10 Megohms Full Scale—7 Ohms ranges with zero adjust to null lead resistance.
3. Low Circuit Loading—Greater measurement accuracy with 10 megohm input resistance for all AC and DC voltage ranges.

CONSTRUCTION

Out of Range Indication: All numbers displayed simultaneously. Neon-glow display.
Polarity Indication: Unipolar, soft glow with 0 half digit displayed indicates wrong polarity.
CMR: Greater than 80 dB.
NMR: Greater than 25 dB at 60 Hz.
DC and Ohms: Full scale step response, 2 seconds.
AC: Full scale step response, 5 seconds.
Power Required: 4 watts, 105–125 VAC, 50/60 Hz; or, optional battery pack.
Temperature Operating Range: 0–40° C.
Case Size: 5⅛″ w. x 3$\frac{3}{16}$″ d. x 6½″ h.

SPECIFICATIONS

DC and AC Volts (AC, 40–10,000 Hz)
DC input resistance all ranges: 10 megohms. AC input impedance all ranges: 10 megohms at 100 pF.

Range	Maximum Indication	Rated Accuracy, ±½ Digit, RDG DC Volts	AC Volts
0–100 mV	199.5	±.25%	±.5%
0–1 V	1.995	±.25%	±.5%
0–10 V	19.95	±.35%	±.5%
0–100 V	199.5	±.35%	±.5%
0–1000 V	1100	±.35%	±.75%

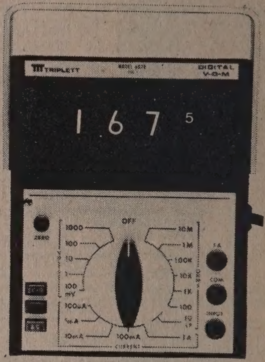
SPECIFICATIONS (CONT'D)

Ohms
Maximum voltage across resistor under test: 1 V full scale all ranges except 10 ohm 100 mV.

Range	Maximum Indication	Rated Accuracy, ±½ Digit, RDG	Test Current
0–10	19.95	±.5%	10 mA
0–100	199.5	±.5%	10 mA
0–1K	1.995	±.5%	1 mA
0–10K	19.95	±.5%	100 μA
0–100K	199.5	±.5%	10 μA
0–1 Meg	1.995	±.5%	1 μA
0–10 Meg	19.95	±1%	100 nA

DC and AC Current (AC, 40–10,000 Hz)
Voltage drop across input: DC and AC 100 mV.

Range	Maximum Indication	Rated Accuracy, ±½ Digit, RDG DC Current	AC Current
0–100 μA	199.5	±.5%	±1%
0–1 mA	1.995	±.5%	±1%
0–10 mA	19.95	±.5%	±1%
0–100 mA	199.5	±.5%	±1%
0–1 A	1.995	±.75%	±1%



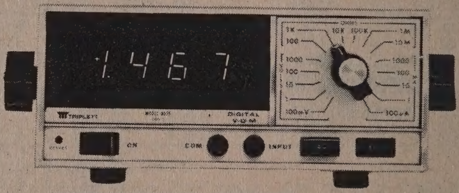
Triplett Model 6028—Tester overload protected. Complete with 42″ test leads, alligator clips and instruction book. Shpg. Wt., 4 lbs. Net Each....................**$275.00**

MODEL 8035 3½-DIGIT V-O-M

1. Easy Operation—Single polarized plug for test leads eliminates switching leads when changing functions.
2. Low Power Consumption—Less internal heating for greater stability and reliability.
3. Low Circuit Loading—Greater measurement accuracy with 10 megohm input resistance for all AC and DC voltage ranges.

CONSTRUCTION

Out of Range Indication: Three least significant digits blank.
Polarity Indication: Auto-polarity for DC functions.
Display: Single plane 7 bar fluorescent display.
CMR: Greater than 80 dB with 1 ohm unbalanced at 60 Hz.
NMR: Greater than 30 dB at 60 Hz.
Tester overload protected.
Power Required: 3 watts, 105–125 VAC, 50/60 Hz.
Temperature Operating Range: 0–45° C.
Case Size: 8⅛″ w. x 10″ d. x 3½″ h.



SPECIFICATIONS

DC and AC Volts (AC, 40–20,000 Hz)
DC input resistance, all ranges: 10 megohms. AC input impedance, all ranges: 10 megohms at 50 pF.

Range	Maximum Indication	Rated Accuracy, ±1 Digit, RDG DC Volts	AC Volts
0–100 mV	199.9	±0.1%	±0.5%
0–1 V	1.999	±0.1%	±0.5%
0–10 V	19.99	±0.1%	±0.5%
0–100 V	199.9	±0.1%	±0.5%
0–1000 V	1100	±0.1%	±0.5%

SPECIFICATIONS (CONT'D)

Ohms
Maximum voltage across resistor under test: 199.9 mV all ranges.

Range	Maximum Indication	Rated Accuracy, ±1 Digit, RDG	Test Current
0–100	199.9	±0.25%	1 mA
0–1K	1.999	±0.25%	100 μA
0–10K	19.99	±0.25%	10 μA
0–100K	199.9	±0.25%	1 μA
0–1 Meg	1.999	±0.5%	100 nA
0–10 Meg	10.00	±2%	10 nA

DC and AC Current (AC, 40–20,000 Hz)
Voltage drop across input: DC and AC, 199.9 mV.

Range	Maximum Indication	Rated Accuracy, ±1 Digit, RDG DC Current	AC Current
0–100 μA	199.9	±0.2%	±0.7%
0–1 mA	1.999	±0.2%	±0.7%
0–10 mA	19.99	±0.2%	±0.7%
0–100 mA	199.9	±0.2%	±0.7%
0–1000 mA	1999	±0.4%	±1.0%

Triplett Model 8035—Complete with 42″ test leads with single, polarized plug, alligator clips and instruction book. Shpg. Wt., 4½ lbs. Net Each....................**$385.00**

ACCESSORIES

REPLACEMENT LEADS

No.	For Tester	Description	Net Each
79-160	Model 10 plus any 630 with 3 VAC scale at 5000 ohms/V	6-ft. lead using Model 10 as clamp-on ammeter with 630 series as noted	$ 4.00
79-153	Model 310 series	Needle nose test leads	4.00
79-296	Model 310 series	Blunt nose test leads	6.10
79-267	Model 601	Test lead	15.80
79-261	Models 601 & 602	Black ground lead	2.90
79-288	Model 602	Test lead	15.80

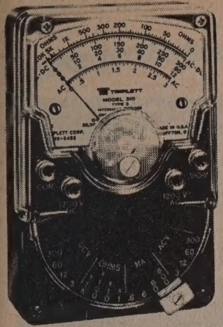
No.	For Tester	Description	Net Each
79-127	Model 630 series, 666-R, 990, 6028, G/P	Test leads	$ 4.00
79-290	Model 801	Test leads	13.20
79-297	Model 801	Black ground lead	1.90
79-311	Model 825	Thermocouple probe	13.80
79-192	Model 850	Test leads	9.00
79-214	Model 850	Black ground lead	1.80
79-320	Model 8035	Test leads	10.60

BLACK COWHIDE CASES

Model	For Tester	Description	Net Each
369	310, 310-C, 310-FET	Top opening with trouser loop on back	$ 5.10
369-S	310, 310-C, 310-FET	Front opening; tester usable in case	12.10
369-T	310, 310-C, 310-FET	Neck-strap style; tester usable in case	11.60
379	310-10-101	With storage for leads	9.70
639	630 Series	Top opening style	15.30
639-N	630 Series	Front opening; tester usable in case	15.30
639-P	630 Series	Top opening style with foam padding	21.70
639-OS	630 & 600 Series, 6028	Front opening; tester usable in case	17.80
669	666-R	Top opening style	10.10
669-OS	666-R	Front opening; tester usable in case	11.00
859-OP	800 & 850	Front opening; with foam padding	28.10
10-2467	801	Front opening; with foam padding	35.90

Additional Digital Multimeters on Pages 466, 498 and 499

NEW DIODE-PROTECTED, HAND-SIZE V-O-M'S



Model 310

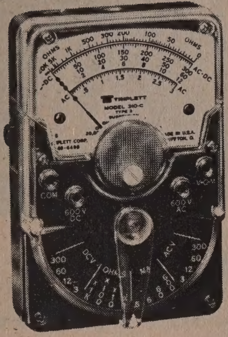
MODEL 310

1. Hand-size V-O-M with diode overload protection.
2. 20,000 ohms per volt DC and 5,000 ohms per volt AC.
3. Single range switch; provision for clamp-on AC ammeter.

RANGES

DC Volts: 0–3–12–60–300–1,200 (20,000 ohms per volt).
AC Volts: 0–3–12–60–300–1,200 (5,000 ohms per volt).
Ohms: 0–20K–200K–2 Meg–20 Meg.
DC Microamperes: 0–600 at 250 mV.
DC Milliamperes: 0–6–60–600 at 250 mV.
Accuracy: ±3% DC; ±4% AC.
Scale Length: 2⅛″. Self-shielded.
Case: Molded, black, 2¾″ w. x 1 5/16″ d. x 4¼″ h.
Batteries: NEDA #910,220.

Triplett Model 310—Complete with 42″ leads, batteries and instruction manual. Shpg. Wt., 2 lbs. Net Each........ **$46.00**



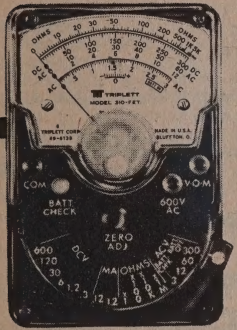
Model 310-C

MODEL 310-C

1. Hand-size V-O-M with diode overload-protected suspension movement.
2. 20,000 ohms per volt DC and 15,000 ohms per volt AC.
3. Single, enclosed range switch minimizes error; DC polarity-reversing switch.

Same as 310 above, except 600-volt ranges replace 1200-volt ranges; plus, suspension meter and polarity reversing switch for DC ranges.

Triplett Model 310-C—Shpg. Wt., 2 lbs. Net Each........ **$59.00**



Model 310-FET

MODEL 310-FET

1. Hand-size FET V-O-M with 10-megohm DC input resistance and diode overload-protected suspension movement.
2. Low voltage range of 300 mVDC; x1 megohm range.
3. Single range switch; DC polarity-reversing switch.

RANGES

DC Volts: 0–0.3–1.2–6–30–120–600. Input resistance, 10 megohms.
AC Volts: 0–3–12–60–300–600 (5,000 ohms per volt).
Ohms: 0–5K–500K–50 Meg–5,000 Meg (50-ohm center scale on low range).
DC Milliamperes: 0–0.12–1.2 at 300 mV.
Accuracy: ±3% DC; ±4% AC. Diode protected suspension meter.
Scale Length: 2⅛″. Battery check on selector switch.
Case: Molded, black, 2¾″ w. x 1⅛″ d. x 4¼″ h.
Batteries: NEDA #1501, 1½ V ASA Type N.

Triplett Model 310-FET—Complete with 42″ leads, alligator clips, batteries and instruction manual. Shpg. Wt., 2 lbs. Net Each........ **$78.00**

ACCESSORIES FOR 310'S

Model 10

Model 101

Model 10 Clamp-on AC Ammeter—For 310 and 310-FET. Ranges, 0–6–12–30–120–300. Net Each........ **$21.00**

Model 10-C Clamp-on AC Ammeter—For 310-C. Ranges, 0–6–12–30–120–300. Net Each........ **$21.00**

Model 101 Line Separator—Divides two conductor cords direct or increases Model 10 sensitivity 10x and 20x. Net Each. **$8.40**

Model 311 Lead—42″ long lead to separate Model 10 from 310 unit for easy reading in awkward spots. Net Each........ **$4.00**

Model 369 Carrying Case—For Model 310's. Net Each... **5.10**

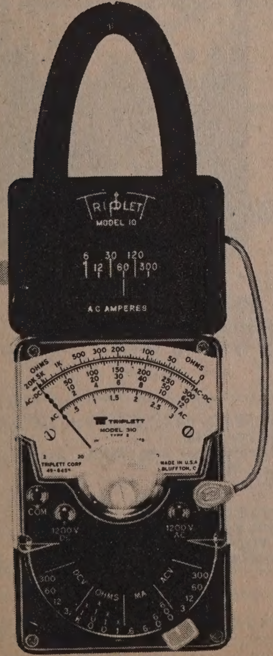
Model 369-S Carrying Case—For Model 310's; front opens permitting use of tester in case. Net Each........ **$12.10**

Model 379 Carrying Case—For Model 310 and Model 10 in combination, plus Model 101. Net Each........ **$9.70**

Model 79-153 Needle Tip Replacement Lead—For Model 310 series. Net Each........ **$4.00**

Model 79-296 Blunt Tip Replacement Lead—For Model 310 series. Net Each........ **$6.10**

HAND-SIZE V-O-M CLAMP-ON AMMETERS



Model 100

1. Complete maintenance kit with V-O-M and clamp-on ammeter.
2. Diode overload protected; 20,000 ohms per volt on DC.
3. AC clamp-on will read up to 300 amps AC.

Model 100—Complete set includes Model 310, Model 10, Model 101, No. 311 lead and Model 379 case. Shpg. Wt., 7 lbs. Net Each........ **$82.00**

Model 100-C—Complete set includes Model 310-C, Model 10-C, Model 101, No. 311 lead and Model 379 case. Shpg. Wt., 7 lbs. Net Each........ **$92.00**

Model 100-FET—Complete set includes Model 310-FET, Model 10, Model 101, No. 311 lead and Model 379 case. Shpg. Wt., 7 lbs. Net Each........ **$115.00**

TRIPLETT Test Instruments

MODEL 630 V-O-M

1. Diode overload-protected suspension movement V-O-M; single range switch minimizes error.
2. 4 ohmmeter ranges with 4.4 ohms center scale.
3. Simplified scale—only 4 arcs for all 27 ranges.

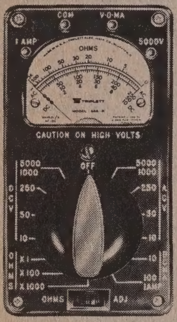
RANGES

DC Volts: 0–3–12–60–300–1,200–6,000 (20,000 ohms per volt).
AC Volts: 0–3–12–60–300–1,200–6,000 (5,000 ohms per volt).
Ohms: 0–1K–10K–1 Meg–100 Meg (4.4-ohm center scale on low range).
DC Microamperes: 0–60 at 250 mV.
DC Milliamperes: 0–1.2–12–120 at 250 mV.
DC Amperes: 0–12.
Decibels: −20 to +51 ("0" dB at 1 mW on 600-ohm line).
Output Volts (AC): 0–3–12–60–300 (5,000 ohms per volt).
Accuracy: ±2% DC; ±3% AC. Diode protected suspension meter.
Scale Length: 4⅜″.
Case: Molded, black, 5½″ w. x 3¹¹⁄₃₂″ d. x 7½″ h.
Batteries: NEDA #210, 13F.

Triplett Model 630—Complete with 48″ leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each..**$69.00**

Triplett Model 630-A—Similar to 630 with accuracy of ±1½% DC, ±3% AC. Net Each..**$79.00**

TRIPLETT
CAUTION ON HIGH VOLTS
OFF
6000
1200
300
60
12
3
12A
120
1.2
DCV
ACV
60 μA
X 10
X 1000
X 100 000
OUT PUT
COM
V-Ω-A
Ω ADJ



MODEL 666-R V-O-M

1. Rugged 16-range V-O-M; single range switch minimizes error.
2. 3 ohmmeter ranges reading to 3 megohms.
3. AC and DC voltage ranges from 10 to 5000 volts.

RANGES

DC Volts: 0–10–50–250–1,000–5,000 (1,000 ohms per volt).
AC Volts: 0–10–50–250–1,000–5,000 (1,000 ohms per volt).

RANGES (CONT'D)

Ohms: 0–3K–300K–3 Meg (20-ohm center scale on low range).
DC Milliamperes: 0–10–100 at 250 mV.
DC Amperes: 0–1 at 250 mV.
Accuracy: ±3% DC; ±4% AC.
Scale Length: 3″.
Case: Molded, black, 3¹⁄₁₆″ w. x 2⁹⁄₁₆″ d. x 5⅞″ h.
Batteries: NEDA #814, 13F.

Triplett Model 666-R—Complete with 48″ leads, alligator clips, batteries and instruction manual. Shpg. Wt., 3 lbs. Net Each..**$52.00**

MODEL 630-PL V-O-M

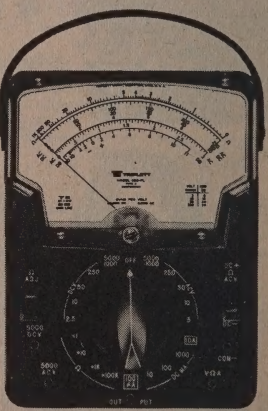
1. 27-range V-O-M with single range switch minimizes error; DC polarity-reversing switch.
2. 5″ suspension meter with diode overload protection.
3. 4 ohmmeter ranges with 4.4 ohms center scale.

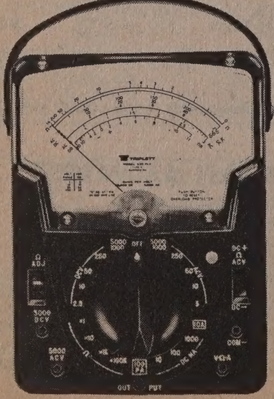
RANGES

DC Volts: 0–2.5–10–50–250–1,000–5,000 (20,000 ohms per volt); 0–0.25 at 100 μA.
AC Volts: 0–3–10–50–250–1,000–5,000 (5,000 ohms per volt).
Ohms: 0–1K–10K–1 Meg–100 Meg (4.4-ohm center scale on low range).
DC Microamperes: 0–100 at 250 mV.
DC Milliamperes: 0–10–100–1,000 at 250 mV.
DC Amperes: 0–10 at 250 mV.
Decibels: −20 to +49 ("0" dB at 1 mW on 600-ohm line).
Output Volts (AC): 0–3–10–50–250 (5,000 ohms per volt).
Accuracy: ±2% DC; ±3% AC. Diode protected suspension meter.
Scale Length: 4½″.
Case: Molded, black, 5½″ w. x 3¹¹⁄₃₂″ d. x 7½″ h.
Batteries: NEDA #210, 13F.

Triplett Model 630-PL—Complete with 48″ leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each..**$73.00**

Triplett Model 630-APL—Similar to 630-PL with accuracy of ±1½% DC, ±3% AC. Net Each..**$83.00**





MODEL 630-PLK V-O-M

1. Burnout-proof solid state overload protection; suspension movement.
2. Single range switch minimizes error; DC polarity-reversing switch.
3. 4 ohmmeter ranges with 4.4 ohms center scale.

RANGES

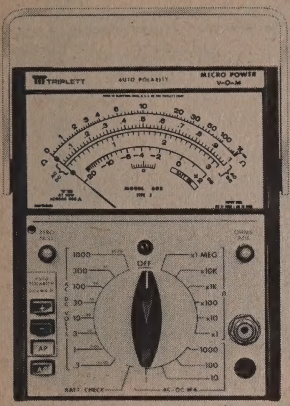
DC Volts: 0–2.5–10–50–250–1,000–5,000 (20,000 ohms per volt); 0–0.25 at 100 μA.
AC Volts: 0–3–10–50–250–1,000–5,000 (5,000 ohms per volt).
Ohms: 0–1K–10K–1 Meg–100 Meg (4.4-ohm center scale on low range).
DC Microamperes: 0–100 at 250 mV.
DC Milliamperes: 0–10–100–1,000 at 250 mV.
DC Amperes: 0–10 at 250 mV.
Decibels: −20 to +49 ("0" dB at 1 mW on 600-ohm line).
Output Volts (AC): 0–3–10–50–250 (5,000 ohms per volt).
Accuracy: ±2% DC; ±3% AC. Diode protected suspension meter.
Scale Length: 4½″. Transistorized electronic switching circuit protects tester against burn-out.
Case: Molded, black, 5½″ w. x 3¹¹⁄₃₂″ d. x 7½″ h.
Batteries: NEDA #210, 13F.

Triplett Model 630-PLK—Complete with 48″ leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each..**$113.00**

Triplett Model 630-APLK—Similar to 630-PLK with accuracy of ±1½% DC; ±3% AC. Net Each..**$123.00**

TRIPLETT Test Instruments

MODEL 603 V-O-M



1. FET V-O-M with Auto-Polarity—convenient and time saving.
2. Low-Power-Ohms—6 ranges with 70 mV power source for in-circuit measurements without component damage.
3. Exclusive Triplett Micro Power—Provides battery life in excess of a year for carbon batteries.

RANGES

DC Volts: 0–0.3–1–3–10–30–100–300–1,000. Input resistance, 11.12 megohms with 1.12 meg in probe.

AC Volts: 0–0.3–1–3–10–30–100–300–1,000. Input impedance, 10 megohms. Frequency range, 20 Hz to 10 kHz.

Ohms—Low Power: 0–1K–10K–100K–1 Meg–10 Megs–1000 Megs (70 mV open circuit voltage, 123 μW maximum power applied to device under test, 10 ohms center scale on low range).

Ohms: 0–1K–10K–100K–1 Meg–10 Megs–1,000 Megs (1.5 V open circuit voltage, 56 mW max. power applied to device under test, 10 ohms center scale on low range).

AC and DC Milliamperes: 0–1–10–100–1,000 at 316 mV.

Decibels: −30 to +62 ("0" dB is equal to .776 V).

Accuracy: ±3% all voltage ranges and ohms; ±4% all current ranges.

Meter: Diode overload protected suspension movement.

Scale Length: 4⅛".

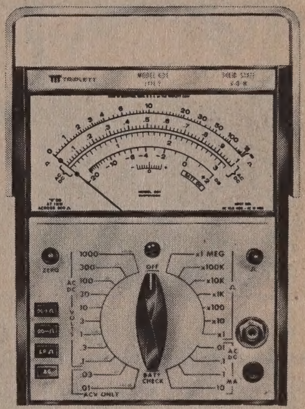
Case: Shielded molded, black, 5⅛" w. x 3 3/16" d. x 6½" h.

Batteries: 2 NEDA 9 V 1604, 1½ V 13F cell.

Triplett Model 603—Complete with 48" leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each **$165.00**

MODEL 601 V-O-M

1. Low power ohms—7 ranges with 75 mV power source.
2. High sensitivity—10 mV AC full scale at 10 megohms input impedance; 100 mVDC at 11 megohms input resistance.
3. Simplified scale—only 4 arcs for all 53 ranges.



RANGES

DC Volts: 0–0.1–0.3–1–3–10–30–100–300–1,000. Input resistance 11 megohms with 690K series resistor in probe tip. Includes 40 dB, 60 Hz rejection.

AC Volts: 0–0.01–0.03–0.1–0.3–1–3–10–30–100–300–1,000. Input impedance, 10 megohms. Frequency range, 50 Hz to 50 kHz. Capacitance at input jack, 60 pF max.

Ohms—Low Power: 0–1K–10K–100K–1 Meg–10 Megs–100 Megs–1,000 Megs (75 mV and 10 ohms center scale on low range).

Ohms—Conventional: 0–1K–10K–100K–1 Meg–10 Megs–100 Megs–1,000 Megs (1.5 V and 10 ohms center scale on low range).

AC and DC Milliamperes: 0–0.01–0.1–1–10 at 100 mV.

Decibels: −60 to +62 ("0" dB is equal to .775 V).

Accuracy: DC ±2% Voltage, ±3% Current; AC ±3% Voltage, ±4% Current. Diode protected suspension meter.

Scale Length: 4⅛".

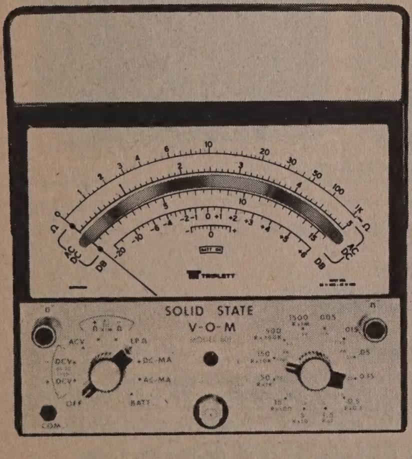
Case: Molded, black, 5⅛" w. x 3 3/16" d. x 6½" h.

Batteries: 10 NEDA #15A.

Triplett Model 601—Complete with 48" leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each **$182.00**

Triplett Model 60-407 AC Current Leakage Adapter—Leakage readings, 7 ranges from 100 μA FS to 30 mA FS at 1500 ohms impedance (commercial appliances). Resolution, 0.2 μA lowest VOM range. Accuracy, ±4% FS. Net Each **$27.50**

MODEL 801 V-O-M



1. Low power ohms—8 ranges with 35 mV power source and 1 ohm center scale.
2. High sensitivity—5 mVAC full scale at 10 megohms input impedance; 50 mVDC at 11 megohms input resistance.
3. Simplified scale—8" meter with only 4 arcs for all 73 ranges.

RANGES

DC Volts: 0–0.05–0.15–0.5–1.5–5–15–50–150–500–1,500. Input resistance, 11 megohms with 1 megohm series resistor in probe tip. Includes 40 dB, 60 Hz rejection.

AC Volts: 0–0.005–0.05–0.15–0.5–1.5–5–15–50–150–500–1,500. Input impedance, 10 megohms. Frequency range, 50 Hz to 50 kHz. Capacitance at input jack, 60 pF max.

Ohms—Low Power: 0–100–1K–10K–100K–1 Meg–10 Megs–100 Megs–1,000 Megs (35 mV and 1 ohm center scale on low range).

Ohms—Conventional: 0–1K–10K–100K–1 Meg–10 Megs–100 Megs–1,000 Megs (1.5 V and 10 ohms center scale on low range).

AC and DC Microamperes: 0–5–15–50–150–500 at 45 mV.

AC and DC Milliamperes: 0–1.5–5–15–50–150–500 at 45 mV.

AC and DC Amperes: 0–1.5 at 45 mV (optional external shunt for 0–15 A measurements).

Decibels: −70 to +66 ("0" dB is equal to .775 V).

Accuracy: DC ±2% Voltage, ±3% Current; AC ±3% Voltage, ±4% Current. Diode protected suspension meter.

Scale Length: 6¾".

Case: Molded, black, 8" w. x 5" d. x 7" h.

Batteries: NEDA #1604, 13F.

Triplett Model 801—Complete with 48" shielded probe, 25" grd. lead, alligator clips, batteries and instruction manual. Net **$231.00**

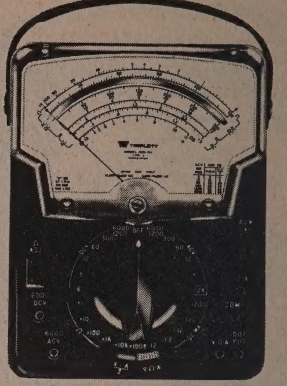
Triplett Model 91-620 Shunt Adapter—15 amperes. Net Each **11.60**

Triplett Model 60-413 AC Current Leakage Adapter—Leakage readings, 7 ranges from 10 μA FS to 30 mA FS at 500 ohms impedance (type A medical) or 1500 ohms impedance (commercial appliances). Resolution, 0.2 μA lowest VOM range. Accuracy, ±4% FS. Net Each **$33.00**

TRIPLETT Test Instruments

MODEL 630-NA V-O-M

1. 70-range V-O-M with single range switch and DC polarity-reversing switch.
2. Accuracy 1½% DC and 3% AC; mirrored scale.
3. Diode overload-protected suspension movement; temperature compensation.

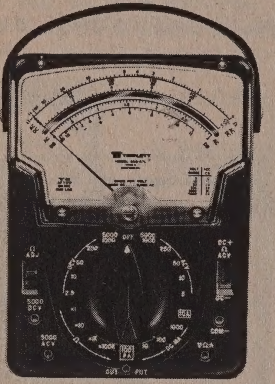


RANGES

DC Volts: 0–0.6–3–12–60–300–1,200–6,000 (10,000 ohms per volt). 0–0.3–1.5–6–30–150–600–3,000 (20,000 ohms per volt). 0–0.120 at 60 μA. 0–0.240 at 120 μA.
AC Volts: 0–3–12–60–300–1,200–6,000 (5,000 ohms per volt). 0–1.5–6–30–150–600–3,000 (10,000 ohms per volt).
Ohms: 0–1K–10K–100K–1 Meg–10 Megs–100 Megs (4.4 ohms center scale on low range).
DC Microamperes: 0–60–600 at 120 mV; 0–120 at 240 mV.
DC Milliamperes: 0–6–60–600 at 120 mV; 0–1.2–12–120–1,200 at 240 mV.
DC Amperes: 0–6 at 120 mV; 0–12 at 240 mV.
Decibels: −26 to +51 ("0" dB at 1 mW on 600 ohm line).
Output Volts (AC): 0–3–12–60–300 (5,000 ohms per volt). 0–1.5–6–30–150 (10,000 ohms per volt).
Accuracy: ±1½% DC; ±3% AC. Diode protected suspension meter.
Scale Length: 4½".
Case: Molded, black, 5½" w. x 3^{11}⁄$_{32}$" d. x 7½" h.
Batteries: NEDA #210, 13F.

Triplett Model 630-NA—Complete with 48" leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each........ **$103.00**

Triplett Model 630-NS—Similar to 630-NA with 200,000 ohms per VDC and 20,000 ohms per VAC. Net Each........ **$122.00**



MODEL 630-APL V-O-M

1. Accuracy 1½% DC and 3% AC; mirrored scale; diode overload-protected suspension movement.
2. 27 range V-O-M with single range switch minimizes error; DC polarity reversing switch.
3. 4 ohmmeter ranges with 4.4 ohms center scale.

RANGES

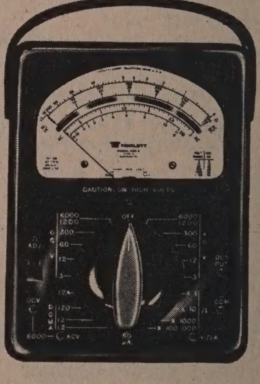
DC Volts: 0–2.5–10–50–250–1,000–5,000 (20,000 ohms per volt); 0–0.25 at 100 μA.
AC Volts: 0–3–10–50–250–1,000–5,000 (5,000 ohms per volt).
Ohms: 0–1K–10K–1 Meg–100 Megs (4.4 ohms center scale on low range).
DC Microamperes: 0–100 at 250 mV.
DC Milliamperes: 0–10–100–1,000 at 250 mV.
DC Amperes: 0–10 at 250 mV.
Decibels: −20 to +49 ("0" dB at 1 mW on 600 ohm line).
Output Volts (AC): 0–3–10–50–250 (5,000 ohms per volt).
Accuracy: ±1½% DC; ±3% AC. Diode protected suspension meter.
Scale Length: 4½".
Case: Molded, black, 5½" w. x 3^{11}⁄$_{32}$" d. x 7½" h.
Batteries: NEDA #210, 13F.

Triplett Model 630-APL—Complete with 48" leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each........ **$83.00**

Triplett Model 630-APLK—Similar to 630-APL with burn-out proof solid state overload protection. Net Each........ **$123.00**

MODEL 630-A V-O-M

1. Diode overload-protected V-O-M with suspension movement; accuracy 1½% DC and 3% AC.
2. 4 ohmmeter ranges with 4.4 ohms center scale.
3. Simplified mirrored scale; only 4 arcs for all 27 ranges.

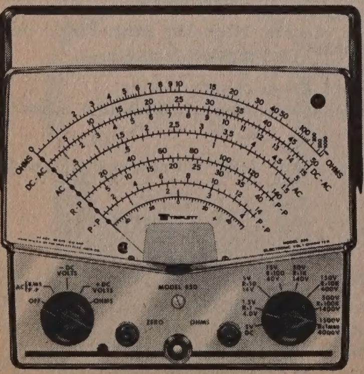


RANGES

DC Volts: 0–3–12–60–300–1,200–6,000 (20,000 ohms per volt).
AC Volts: 0–3–12–60–300–1,200–6,000 (5,000 ohms per volt).
Ohms: 0–1K–10K–1 Meg–100 Megs (4.4 ohms center scale on low range).
DC Microamperes: 0–60 at 250 mV.
DC Milliamperes: 0–1.2–12–120 at 250 mV.
DC Amperes: 0–12 at 250 mV.
Decibels: −20 to +51 ("0" dB at 1 mW on 600 ohm line).
Output Volts (AC): 0–3–12–60–300 (5,000 ohms per volt).
Accuracy: ±1½% DC; ±3% AC. Diode protected suspension meter.
Scale Length: 4⅜".
Case: Molded, black, 5½" w. x 3^{11}⁄$_{32}$" d. x 7½" h.
Batteries: NEDA #210, 13F.

Triplett Model 630-A—Complete with 48" leads, alligator clips, batteries and instruction manual. Shpg. Wt., 5 lbs. Net Each........ **$79.00**

Triplett Model 630—Similar to 630-A with accuracy of ±2% DC, ±3% AC. Net Each........ **$69.00**



MODEL 850 VTVM

1. 8" meter with six scales for easy readability.
2. 29-range VTVM with 11-megohm DC input resistance.
3. Color-coded scales for peak-to-peak measurements.

RANGES

DC Volts: 0–0.5–1.5–5–15–50–150–500–1,500 (Input resistance, 11 megohms).
AC rms Volts: 0–1.5–5–15–50–150–500–1,500 (Input impedance, min. 0.83 megohm).
Peak-to-Peak Volts: 0–4–14–40–140–400–1,400–4,000.
Ohms: 0–1K–10K–100K–1 Meg–10 Megs–100 Megs–1,000 Megs (10 ohms center scale on low range).
Accuracy: ±3% DC; ±3% AC. Electrical protection of meter against burn out.
Scale Length: 7".
Frequency: 15 Hz to 3 MHz.
Case: Molded, black, 7⅝" w. x 3¾" d. x 6^{7}⁄$_{16}$" h.
Battery: NEDA #814.

Triplett Model 850—Complete with 48" leads, alligator clips, battery and instruction manual. Shpg. Wt., 5 lbs. Net Each........ **$113.00**

TRIPLETT Test Instruments

MODEL 990 INDUSTRIAL ANALYZER

MAINTENANCE IN A CASE

1. Industrial analyzer . . . measures AC/DC volts, ohms, AC/DC current, temperature, dB and rpm.
2. Burn-out proof, solid state overload protection; DC polarity-reversing switch.
3. V-O-M (AC/DC) complete in one carrying case with all accessories.

RANGES

DC Volts: 0–2.5–10–50–250–1,000–5,000 (20,000 ohms per volt); 0–0.25 at 100 μA.
AC Volts: 0–3–10–50–250–1,000–5,000 (5,000 ohms per volt).
Ohms: 0–1K–10K–1 Meg–100 Megs (4.4-ohm center scale on low range).
DC Microamperes: 0–100 at 250 mV.
DC Milliamperes: 0–10–100 at 250 mV; 0–1,000 at 400 mV.
DC Amperes: 0–10 at 600 mV; 0–100 at 250 mV (accessory shunt).
AC Amperes: 0–6–12–30–60–120–300 (accessory adapter).
Decibels: −20 to +49 ("0" dB at 1 mW on 600-ohm line).
Output Volts (AC): 0–3–10–50–250 (5,000 ohms per volt).
Temperature: −50° F to +100° F; +40° F to +300° F.
RPM: 0–500–5,000.
Accuracy: Model 900 V-O-M, ±2% DC and ±3% AC; diode protected suspension meter with 4½″ scale length. Model 901 Tach/Gen., ±2%; temperature probe ±2° F. Model 10 AC Amp Adapter, ±5%; DC Amp Shunt, ±1%.
Model 900 Case: Molded, black, 5½″ w. x 3 11/32″ d. x 7½″ h.
Carrying Case: Black molded plastic, 17″ w. x 4½″ d. x 12″ h.
Batteries: NEDA #210, 13F.

Triplett Model 990—Complete with Model 900 V-O-M and 48″ leads, Model 901 Tach/Generator and 2 additional tips, Model 10 Clamp-on AC Ammeter Adapter, Model 101 Line Separator, Temperature Probe, DC Current Shunt, Model 611 leads, carrying case, alligator clips, batteries and instruction manual. Shpg. Wt., 10 lbs. Net Each..**$243.00**

MODEL 825 TEMPERATURE TESTER

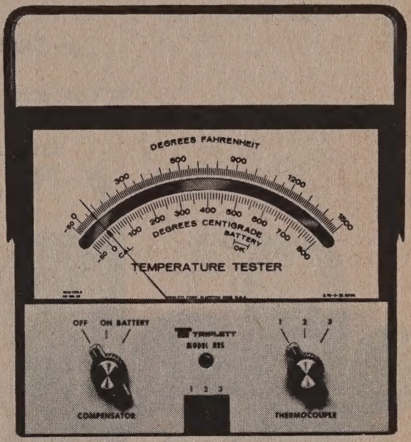
1. Measures −50° F to +1500° F and −50° C to +800° C.
2. Large easy to read 8″ dial with mirror scale.
3. Electrical compensation for ambient temperature.

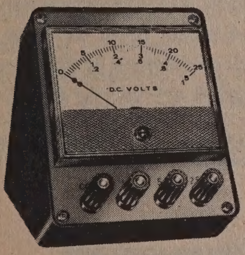
SPECIFICATIONS

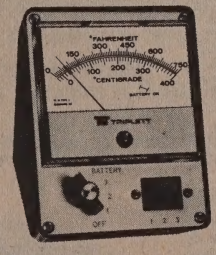
Ranges: −50° F to +1500° F; −50° C to +800° C.
Sensor Type: Thermocouple, type K (Chromel-Alumel*), 5 ohms (±1%) resistance.
Compensation: Electrical.
Accuracy: Better than ±2% of full scale reading. For more details contact factory.
Meter: Suspension movement with 6¾″ scale length.
Inputs: 3, switch selected.
Case: Molded, black, 7⅝″ w. x 4½″ d. x 6¾″ h.
Battery: NEDA 13F.

Triplett Model 825—Complete with 10-ft. thermocouple probe, battery and instruction manual. Shpg. Wt., 4½ lbs. Net Each..............**$104.00**

*Hoskins Mfg. Trademark.







G/P PORTABLE INSTRUMENTS

1. Wide clear view plastic meter, with Bar-Ring DC movements.
2. Overload protection on all models. (Diodes on DC, Fused AC.)
3. Unbreakable molded black plastic cases with aluminum panels.

- ±2% accuracy on DC and AC Iron Vane Types.
- ±3% accuracy on AC Rectifier Type and Ohms.
- ±3% or better accuracy on temperature.
- 3½″ Model 320-G panel instrument.
- Five-way binding posts or three switched inputs.
- DC movements diode protected.
- AC movements fuse protected.
- Temperature unit electrically compensated.
- Case molded, black, 3⅜″ w. x 4¼″ d. x 4¼″ h.

DC TYPE 320-G/P

Range	Net Each
0–1–5–25 V (1000 ohms/V)	$34.80
0–25–100–500 V (1000 ohms/V)	35.50
0–6–60–600 V (1000 ohms/V)	35.50
0–50 μA (2300 ohms resis.)	32.40
500–25–0–25–500 μA (6250 ohms resis.)	36.60
0–0.25–1–5 mA	33.80
0–25–100–500 mA	34.30
0–1–10–100 mA	34.30
0–1–5–25 A	34.80
0–50–100–250 mV*	34.30
0–3–15 A	31.30
0–10–50–250 μA (suspension)	66.40
40–0–40 μA (suspension) null meter (1700 ohms resis.)	45.60

*May be used with any of several standard switchboard shunts to extend range to higher currents.

AC IRON VANE TYPE 330-G/P

0–120–600 V (83 ohms/V) and 0–12 mA	$47.00
0–5–25 V (4 ohms/V) and 0–250 mA	35.00
0–30–120 V (17 ohms/V) and 0–60 mA	36.40
0–150 V (12 ohms/V)	27.90
0–1 A (3 ohms resis.)	26.40
0–5 A (.015 ohm resis.)	26.40
0–25 A (.002 ohm resis.)	26.40

AC RECTIFIER TYPE 350-G/P

Range	Net Each
0–6–60–600 V (1000 ohms/V)	$56.40

OHMMETERS TYPE 320-G/P

Includes battery and test leads.

0–1K–100K (10–1000 center scales) (1.5 V battery)	$38.50
0–1–100 meg (5K–500K ctr. scales) (30 V battery)	44.40

RF VOLTS TYPE 340-G/P AND WATTS TYPE 360-G/P

0–2.5 V (240 ohms/V)	$53.40
0–150 W (150 V, 2A max.)	56.50

TEMPERATURE TYPE 320-G/P

Suspension type; includes 5-ft. thermocouple probe, 1.5 volt C battery and instruction manual.

−150° F to +250° F; −100° C to +120° C	$62.00
0° F to +500° F; −20° C to +260° C	62.00
0° F to +750° F; −20° C to +400° C	62.00
0° F to +1000° F; −20° C to +540° C	62.00

ACCESSORIES

79-127 test leads for G/P series except temp. meters	$4.00
79-310 5-ft. thermocouple probe for temp. meters	9.40

Additional Portable Pyrometers on Page 433

TRIPLETT SOUND MEASURING INSTRUMENTS

MODEL 370 SOUND LEVEL METER—TYPE 3

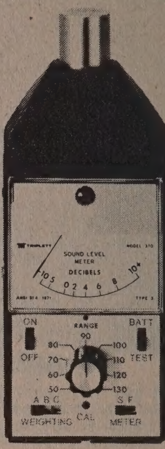
1. General purpose sound pressure level meter; meets or exceeds ANSI S1.4-1971 Type 3 for OSHA requirements.
2. Omni-directional ceramic microphone; selectable A, B, C weighted response.
3. "Fast" and "Slow" meter response; can be acoustically calibrated.

SPECIFICATIONS

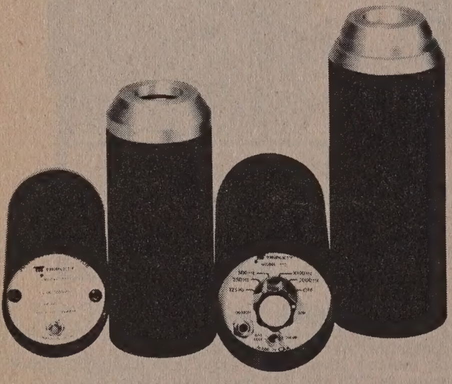
Measuring Range: 40 dB to 140 dB (ref. .0002 microbar) in 10 dB increments.
Weighting Network: A, B and C weighting in accordance with ANSI standard S1.4-1971 for Type 3 meters.
Microphone: Lead-Zirconate-Titanate Ceramic unit. 15/16" O.D.
Accuracy: Exceeds ANSI standard S1.4-1971 for Type 3 sound level meters.
Output: Approximately 100 mV rms into a 10K ohm load for full scale meter reading. Less than 10 ohms output impedance.
Calibration: Can be calibrated at frequencies from 125 Hz to 2000 Hz.
AC Output: Output jack supplied analog output signal of approximately 100 mV rms capable of being fed into external magnetic fed tape recorders, octave band analyzers or other similar analytical equipment.
Operating Temperature: 20° F to 125° F (−7° C to 50° C); temperature coefficient, +.02 dB/° F (+.036 dB/° C).
Storage Temperature: 0° F to 150° F (−18° C to 65° C) with battery removed.
Operating Humidity: 5% to 85% relative humidity.
Meter: Quasi rms response with fast and slow meter speeds; suspension type movement with 1.5" dial length.
Case: Flat black aluminum with high impact plastic cone; 3" w. x 2" d. x 7¼" h. Weight, 1 lb. with batteries.
Batteries: Two 9 volt NEDA 1604.

Triplett Model 370 (Type 3)—Complete with batteries and instruction manual. Net Each.......... **$250.00**

Triplett Model 375 (Type 2)—Similar to Model 370 above, except meets all ANSI S1.4-1971 requirements for Type 2 sound level meters. Complete with batteries and instruction manual. Net Each.......... **$325.00**



SOUND LEVEL CALIBRATORS



MODEL 372 MULTI-FREQUENCY CALIBRATOR

1. Acoustic calibrator generates 100 dB or 114 dB sound pressure level at ANSI preferred frequency levels of 125 Hz, 250 Hz, 500 Hz, 1000 Hz or 2000 Hz.
2. Three-position toggle switch selects 100 dB or 114 dB levels and battery check. Six position switch selects the five frequencies and turns unit on and off.
3. Ruggedized unit calibrates all Triplett sound level measuring units using pressure level of 110 dB or 114 dB.

SPECIFICATIONS

Frequencies: 125, 250, 500, 1000 and 2000 Hz ±3%.
Sound Pressure Level: 100 dB or 114 dB (ref. .0002 microbar).
Accuracy: ±0.3 dB at 500 Hz; ±0.5 dB at all other frequencies; measured at 73.5° F (23° C) and 760 mm Hg.
Temperature Coefficient: Between 0 and −.006 dB/° F (−0.01 dB/° C).
Operating Temperature: 32° F to 125° F (0° C to 50° C).
Operating Humidity: 5% to 85% relative humidity.
Microphone Size: For 1" and ½" outside diameter.
Case: Aluminum, 2¼" dia. x 5¾" lg. Weight, 1 lb. with batteries.
Batteries: One 9 volt NEDA 1600.

Triplett Model 372—Complete with pressure correction chart, battery, adapter for ½" microphone and instruction manual. Net Each.. **$240.00**

MODEL 371 ACOUSTIC CALIBRATOR

1. Generates 114 dB sound pressure level at ANSI preferred frequency level of 1000 Hz.
2. Single pushbutton simultaneously operates output signal and battery check light.
3. Ruggedized unit, calibrates all Triplett sound measuring units using sound pressure level of 14 dB.
4. Same specifications as Model 372, except Model 371 has one frequency output (1000 Hz ±3%).
5. Aluminum case, 2" dia. x 4⅝" lg.

Triplett Model 371—Complete with pressure correction chart, battery, adapter for ½" microphone and instruction manual. Net Each.. **$125.00**

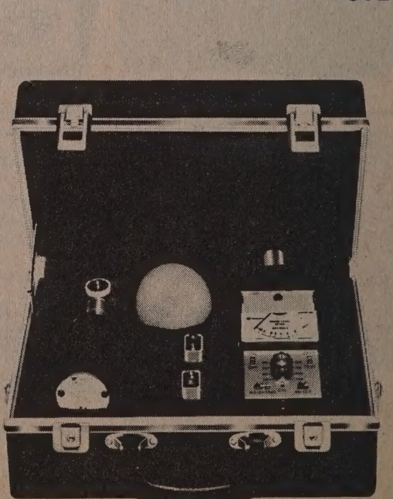
SOUND LEVEL KITS

Triplett Model 370-K1—Includes Model 370 sound level meter (type 3), Model 371 acoustic calibrator (1 frequency with adapter for ½" microphone), neck strap for Model 370, foam wind screen, molded plastic case, batteries, and instruction manual. Net Each.......... **$397.00**

Triplett Model 370-K2—Includes Model 370 sound level meter (type 3), Model 372 acoustic calibrator (five frequencies with adapter for ½" microphone), neck strap for Model 370, foam wind screen, molded plastic case, batteries and instruction manual. Net Each.......... **$512.00**

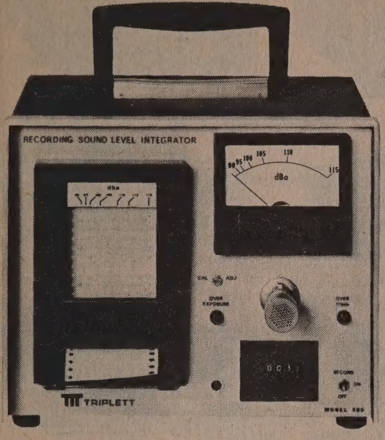
Triplett Model 375-K1—Includes Model 375 sound level meter (type 2), Model 371 acoustic calibrator (one frequency with adapter for ½" microphone), neck strap for Model 375, foam wind screen, molded plastic case batteries and instruction manual. Net Each.......... **$472.00**

Triplett Model 375-K2—Includes Model 375 sound level meter (type 2), Model 372 acoustic calibrator (five frequencies with adapter for ½" microphone), neck strap for Model 375, foam wind screen, molded plastic case, batteries and instruction manual. Net Each.......... **$587.00**



TRIPLETT SOUND MEASURING INSTRUMENTS

MODEL 380 SOUND LEVEL RECORDING INTEGRATOR



1. Records between 90 dB and 115 dB, percentage noise exposure on digital counter and noise level on strip chart to provide legal record for OSHA requirements.
2. Amber warning light glows when noise levels exceed 115 dB; red warning light indicates four digit counter readout has reached permissible noise limit.
3. Detachable, omni-directional, ceramic microphone; meets "A" weighted response requirements of ANSI S1.4-1971 standard.

SPECIFICATIONS

Measuring Range: 90 dB to 115 dB.
Weighting Network: "A" weighted response meets ANSI S1.4-1971 standard.
Microphone: Lead-Zirconate-Titanate Ceramic unit with 18″ chromium flexible gooseneck extension for microphone, 1⁵⁄₁₆″ O.D.
Accuracy (1000 Hz): Within ±1 dB of ideal smooth curve generated by plotting individual sound levels and corresponding permissible exposure stated in Department of Labor's Occupational Noise Standard.
90 dB Cutoff: Amplitude-sensitive switch disables integrator below 90 dB, but retains exposure accumulated between counts of digital indicator. Complete switching occurs within .5 dB of set 90 dB level.
115 dB Alarm: Alarm trips when sound level exceeds 115 dB for duration of 1 second or more. State of 115 dB alarm is displayed by amber panel indicator.
Exposure Readout: Four place digital counter counts at a rate that is a function of sound level. Red panel indicator glows on count of 1000.
Recorder: Hot pen continuous writing type stylus; 6″ per hour chart speed; 90 dB to 115 dB range; 75 ft./roll chart length; internal take-up roll for tape.
Calibration: Overall sensitivity can be acoustically calibrated by Models 371 or 372.
Operating Temperature: 32° F to 100° F (0° C to 38° C).
Operating Humidity: 5% to 85% relative humidity.
Meter: Suspension movement with 3.16″ dial length.
Case: Blue aluminum, 10½″ w. x 8½″ d. x 8¾″ h. Weight, 11 lbs.
Power Requirements: 115 VAC, 60 Hz at 1 amp max.

Triplett Model 380—Complete with instruction manual. Net Each.......... **$945.00**

OPTIONS AVAILABLE

AC Signal Output for Model 380. Provides continuing monitoring of sound level by means of an external AC VTVM oscilloscope. Net Each.......... **$30.00**

DC Output for Model 380. Provides rectified output for continuous monitoring of sound level by means of an external DC voltmeter. Net Each.......... **$30.00**

Relay for Model 380. Integral relay contacts close when overexposure light glows. Net Each.......... **$50.00**

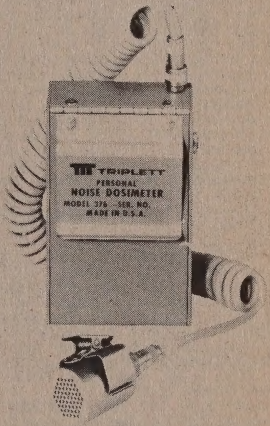
MODEL 376 PERSONAL NOISE DOSIMETER

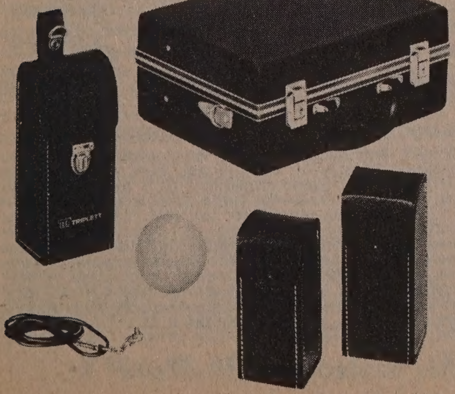
1. Shirt-pocket size, lightweight unit records noise exposures between 90 dB and 115 dB Displays percentage of allowable exposure on four place LED readout.
2. Automatically computes cumulative daily noise exposure; "A" weighted response meets ANSI S1.4-1971 standard.
3. Omni-directional, detachable, ceramic microphone on extension cable.

SPECIFICATIONS

Measuring Range: 90 dB to 115 dB.
Weighting Network: "A" weighted response meets ANSI S1.4-1971 standard.
Microphone: Lead-Zirconate-Titanate Ceramic unit connected to electronics by means of four foot detachable coiled cable, 1⁵⁄₁₆″ O.D.
Accuracy (1000 Hz): Within 1 dB of the ideal smooth curve generated by plotting individual sound levels and corresponding permissible exposures stated in Department of Labor's Occupational Noise Standard.
Output: AC analog output approximately 1.5 volts rms into 100K ohm load at 115 dB; unfiltered DC output approximately 1.2 volts into 100K load at 115 dB.
90 dB Cutoff: Amplitude-sensitive switch disables integrator below 90 dB, but retains exposure accumulated between counts of digital indicator. Complete switching occurs within .5 dB of set 90 dB level. Red panel indicator glows when instantaneous sound level exceeds 90 dB.
115 dB Alarm: Alarm trips and latches on when the sound level exceeds 115 dB for duration of 1 second or more. State of 115 dB alarm is displayed by red panel indicator.
Exposure Readout: Four place LED readout with 100% overrange.
Calibration: Overall sensitivity, 90 dB cutoff, and 115 dB alarm circuit can be acoustically calibrated from front panel.
Operating Temperature: 5° F to 125° F (−15° C to 50° C), wear inside protective clothing at temperature below 32° F.
Operating Humidity: 5% to 85% relative humidity.
Case: Blue aluminum, 2⅝″ w. x 1³⁄₁₆″ d. x 4½″ h. Weight, less than ¾ lb. including battery, microphone and cable.
Batteries: One 9 volt NEDA 1600.

Triplett Model 376—Complete with remote microphone, battery and instruction manual. Net Each.......... **$480.00**





ACCESSORIES

Triplett Number 10-2693—Leather carrying case for Models 370 and 375 (includes neck strap). Net Each.......... **$9.80**

Triplett Model 10-2694—Leather carrying case for Model 371. Net. **$5.30**

Triplett Model 10-2695—Leather carrying case for Model 372. Net. **$5.90**

Triplett Model 10-2712—Molded plastic case for sound level kits. Net Each.......... **$20.00**

Triplett Number 3206-56—Neck strap for Models 370 and 375. Net Each.......... **$0.50**

Triplett Number 12308—Wind screen (package of 4) for Models 370 and 375. Net per Package.......... **$10.00**

Triplett Number 10-2700—Microphone cap for Models 370 and 375. Net Each.......... **$0.20**

Triplett Number 156-1—Recorder chart paper for Model 380, 75 foot roll. Net per Roll.......... **$4.50**

Helping You Meet OSHA Noise Requirements

WESTON® DIGITAL PANEL INSTRUMENTS

MODEL 1230 DIGITAL PANEL METER

GENERAL SPECIFICATIONS

TTL Logic: 0 to +5 volt output. Parallel BCD output except during conversion which is identified by print command output, is available, when specified. BCD to drive 2 loads TTL (sink 3.2 mA).
Operating Temperature: 0–50° C.
Storage Temperature: −40° C to +70° C.

ELECTRICAL SPECIFICATIONS

Ranges available as below.

Range	Input Ohms	Weston No.	
		Without BCD	**With BCD**
0 ± 199.9 mV	100 meg	**1230-0274871**	**1230-0274900**
0 ± 1.999 V	100 meg	**1230-0274872**	**1230-0274901**
0 ± 19.99 V	5 meg	**1230-0274873**	**1230-0274902**
0 ± 199.9 V	5 meg	**1230-0274874**	*
0 ± 1000 V	5 meg	**1230-0274875**	*
0 ± 19.99 μA	10K	**1230-0274876**	*
0 ± 199.9 μA	1K	**1230-0274877**	*
0 ± 1.999 mA	100	**1230-0274878**	*
0 ± 19.99 mA	10	**1230-0274879**	*
0 ± 199.9 mA	1	**1230-0274880**	*

*Available on special order.

Temperature Coefficient: 100 ppm/° C, full scale.
Input Bias Current: 1 nA max.
Ratio Operation: External reference 1.0 nominal or 0.1 V ±20%. Automatic zero setting.

SPECIFICATIONS

Display: ±1999 Sperry gas discharge; 7 segment 0.55″ high; 7.5 readings/sec standard; amber Polaroid filter with sockets.
Common Mode Rejection: Greater than 80 dB at line frequency with 1K ohm unbalanced.
Power Required: 117/234 VAC ±10%, 4.7 watts, 50–60 Hz.
Size: Front, 4.00″ w. x 0.56″ d. x 1.75″ h.; behind panel, 4.25″ d.; panel cutout, 3.924″ w. x 1.682″ h. Weight, 1 lb.
Weston Model 1230 Digital Panel Meter—Without BCD.
List Price.......................................**$135.00***
Weston Model 1230 Digital Panel Meter—With BCD.
List Price.......................................**$140.00***

MODEL 1220/1221 BATTERY OR LINE OPERATED BIPOLAR DIGITAL PANEL METERS

Full 3½ digit bipolar digital panel meters utilize the Weston patented dual slope A/D conversion technique. All digital logic circuitry contained on a single MOS LSI plug-in 24-pin chip for added reliability. MOS LSI chip contains all logic circuitry, polarity sensing logic, comparator-to-sense threshold crossing, over range sensing logic, synchronization of the display throbing, and strobing and storage resistor. All logic circuitry is assembled on one socket; hence easily replaceable with another plug-in chip in case of failure. Features include LED readout plug-in type and instant accuracy with no warm-up time. Automatic blanking of unused digits in the readout. Special terminal provided that blanks out the readout when grounded; hence permits the design of "push-to-read" button on portable equipment to extend battery life. Fixed or remote programmed decimal points. Range changes easily accomplished. Easily attainable input vs. readout slope changes. Model 1220 is designed for battery operation. Model 1221 is designed for AC line operation. **Voltage Ranges (Input Impedance):** 0–100 mV (100 megs); 0–1 V (100 megs); 0–10 V (5 megs); 0–100 V (5 megs); 0–1000 (5 megs). **Current Ranges (Input Impedance):** 0–10 μA (10K); 0–100 μA (1K); 0–1 mA (100 ohms); 0–10 mA (10 ohms); 0–100 mA (1 ohm). **Accuracy:** ±0.1% of reading ±1 digit at 25° C ±10° C. **Overrange:** 100% (reads 1999) except on 1000 V range (stated accuracy applies to full overrange). **Readout:** 3½ digits, 7 segment LED. **Out-Of-Range-Indication:** Flashing "1" in MSD with blanking of remaining digits. **Operating Temperature:** 0–60° C (32–140° F). **Temperature Coefficient:** ±0.01% FS ±1 digit (±0.005% reading/° C). **Common Mode Rejection:** Greater than 120 dB for battery operation; 80 dB for line operation. **Normal Mode Rejection:** 30 dB at 60 Hz. **Sampling Rates:** Greater than 3/sec. **Response Time:** Less than 1.5 sec. **Power Required:** Model 1220, 5.5 VDC ±10%, 0.75 watts (4 Nicad "C" cells); Model 1221, 117/234 VAC ±10%, 50–400 Hz. **Size:** 2.83″ w. x 1.41″ h. x 2.55″ d. behind panel for Model 1220; 2.83″ w. x 1.41″ h. x 5.0″ d. behind panel for Model 1221. Weight, 4 oz. approx.

Weston Model 1220 DPM—Battery operation only.
List Price.......................................**$145.00***
Weston Model 1221 DPM—AC operation only. List. **155.00***
Weston Model 9790-0273883—Input PC board connectors for Models 1220/1221. List Price.......................**$4.00***

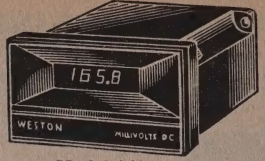
MODEL 1295 BI-POLAR DIGITAL PANEL METER

Bi-polar 3½ digit panel meter features dual slope A/D conversion technique for long term stability. All digital logic on a single 24-pin LSI MOS chip. Non-blinking display and 100% overrange (except 1000 V range). Automatic bi-polar operation and utilizes only 7 sq. in. of panel space. **Accuracy:** ±0.1% of reading, ±1 digit. **Overrange:** 100% (reads 1999). **Readout:** 7 segment LED's. **Operating Temperature Range:** 0°–60° C (32°–140° F). **Common Mode Rejection:** 100 dB with 1000 ohm unbalance at 60 Hz. **Normal Mode Rejection:** 30 dB at 60 Hz. **Sampling Rate:** More than 3 per second. **Response Time:** Less than 1.5 sec. **Power Required:** 117 VAC, 50–400 Hz; 230 VAC optional. **Size:** Front, 4.00″ w. x 0.56″ d. x 1.75″ h.; behind panel, 4.25″ d.; panel cut-out, 3.924″ w. x 1.682″ h. Weight, 13 oz. approx.

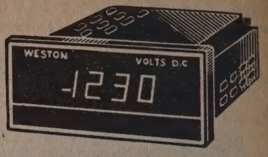
Weston Model 1295—Specify range. List Price......**$140.00***

Weston 1295-	DC Voltage Range	Input Ohms	Weston 1295-	DC Current Range	Input Ohms
0273561	0–100 mV	100 meg*	**0273556**	0–10 μA	10K
0273562	0–1 V	100 meg*	**0273557**	0–100 μA	1K
0273563	0–10 V	5 meg	**0273558**	0–1 mA	100
0273564	0–100 V	5 meg	**0273559**	0–10 mA	10
0273565	0–1000 V	5 meg	**0273560**	0–100 mA	1

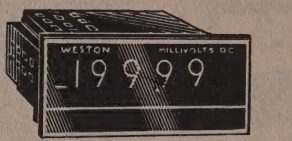
*Minimum



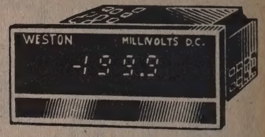
Model 1220



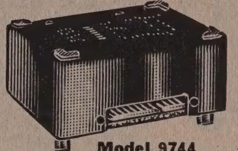
Model 1230



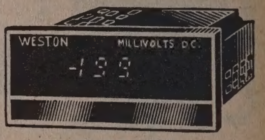
Model 1294



Models 1295, 1296



Model 9744



Model 1297

MODEL 1296 LIMITED BI-POLAR DIGITAL PANEL METER

Similar specifications and size as Model 1295, but accuracy is not guaranteed for negative inputs.

Weston Model 1296—Specify range. List Price......**$130.00***

Weston 1296-	DC Voltage Range	Input Ohms	Weston 1296-	DC Current Range	Input Ohms
0273601	0–100 mV	100 meg*	**0273596**	0–10 μA	10K
0273602	0–1 V	100 meg*	**0273597**	0–100 μA	1K
0273603	0–10 V	5 meg	**0273598**	0–1 mA	100
0273604	0–100 V	5 meg	**0273599**	0–10 mA	10
0273605	0–1000 V	5 meg	**0273600**	0–100 mA	1

*Minimum

MODEL 1297 BI-POLAR DIGITAL METER

Similar to Model 1295, but features 2½ digit panel meter.

Weston Model 1297—Specify range. List Price......**$125.00***

Weston 1297-	DC Voltage Range	Input Ohms	Weston 1297-	DC Current Range	Input Ohms
0273641	0–100 mV	100 meg*	**0273636**	0–10 μA	10K
0273642	0–1 V	100 meg*	**0273637**	0–100 μA	1K
0273643	0–10 V	5 meg	**0273638**	0–1 mA	100
0273644	0–100 V	5 meg	**0273639**	0–10 mA	10
			0273640	0–100 mA	1

*Minimum

MODEL 1294 4½-DIGIT NON-BLINKING METER

Standard features include: 1–2–4–8 BCD output; readout on plug-in Nixie† tubes replaceable from front of panel; circularly polarizing viewing window; zero and range adjustment accessible from front of panel; "repairable" non-potted PB boards; out-of-range indication; full storage display. 4½-digit bi-polar digital panel meter features a display of 19999 and 10 mV sensitivity. Utilizes TTL logic and unique time sharing circuitry that limits power consumption to less than 6 watts. Occupies only 7 sq. in. of panel space and can be interchanged with other Weston DPM's. **Accuracy:** ±0.05% full scale, ±1 digit. **Readings:** 5 per second, **Common Mode Rejection:** 80 dB at 60 Hz. **Normal Mode Rejection:** 40 dB at 60 Hz. **Response Time:** Less than 1 second. **Overrange:** 100% (reads 19999). **Power Required:** 117 VAC (±10%), 50–60 Hz, less than 6 watts; 220 VAC, 50 Hz optional. **Size:** Front, 4.00″ w. x 0.56″ d. x 1.75″ h.; behind panel, 4.25″ d.; panel cutout, 3.924″ w. x 1.682″ h. Weight, 2 lbs. approx.

†Reg. Burroughs Corp. trademark.

Weston Model 1294-0270600—0–100 mV at 10 megohms input.
List Price.......................................**$375.00***
Weston Model 1294-0270601—0–1 V at 10 megohms input.
List Price.......................................**$350.00***
Weston Model 1294-0270602—0–10 V at 10 megohms input.
List Price.......................................**$350.00***
Weston Model 1294-0270605—0–10 μA at 100 mV input.
List Price.......................................**$350.00***
Ask about 0–100 V, 0–1000 V, 0–100 μA, 0–1 mA, 0–10 mA and 0–100 mA meters, available on special order.

MODEL 9744 rms TRANSDUCER

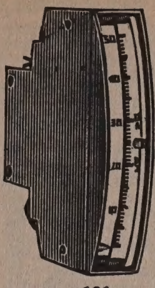
Low cost, all solid state single range device providing DC output signal proportional to rms of input signal. Five voltage ranges and four current ranges. Input impedance of 1 megohm on all voltage ranges makes it suitable for signal or power circuit applications. 0–1 VDC output is suitable for use with digital or analog indicating instruments and a wide range of control instrumentation. Less than 0.5% error on frequency range 40–10 kHz; less than 0.35% on power frequencies (50–400 Hz); no more than 1.5% on frequencies in the 30–20,000 Hz range is experienced on any kind of waveform applied. Generous 4:1 crest factor (peak/rms) assures accurate measurements on large signal peaks. **Size:** 4″ w. x 2.88″ d. x 1.94″ h. overall. Weight, less than 9 oz.

Weston Model 9744 rms Transducer—List Price.....**$150.00**

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, −5%; 10-24, −15%; 25 UP, −25%.

WESTON® THIN LINE PANEL METERS

- **COMPLETELY FLAT . . . CAN BE STACKED SIDE-BY-SIDE TO SAVE PANEL SPACE**
- **INLINE POINTER AND SCALE . . . PARALLAX ELIMINATED**
- **NEW SELF-SHIELDED MECHANISM**
- **ILLUMINATION (SELF-CONTAINED) ALSO AVAILABLE**
- **MEETS ASA C39.1 PERFORMANCE**



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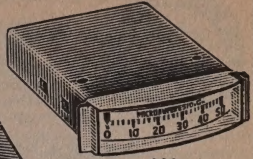

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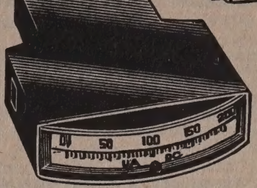

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MODELS 131 AND 231 EDGEWISE PANEL METERS

Model 131 is basically a 3½-inch flat edgewise meter offering many benefits not generally offered in this type of meter. To eliminate parallax normally associated with edgewise meters, an inline scale is standard; a red pointer increases readability. For those requiring lighting, self-contained illumination is available as an optional feature; bulbs are removable while meters are mounted in panel—even when stacked side-by-side. Designed to meet ASA C39.1 performance specifications. Incorporates Cormag® mechanism design for shielding purposes. The magnet is inside the moving coil and the resulting inherent shielding allows mounting on magnetic or non-magnetic panels without need for adjustment, as well as the ability to stack meters side-by-side without any interaction. Mechanism also has a shock absorption jewel arrangement to assure long life. For scale presentation approximately twice as wide. **Accuracy:** 2% of FS value for DC; 3% of FS value for AC rectifier type. **Scale Length:** 2.75″; anti-parallax inline scale. **Pointer:** Red lance type. **Movement:** Self shielded thin line Cormag mechanism. Shock mounted jewel arrangement. **Mounting:** Meter can be mounted either horizontally or vertically. Mounting clips fasten to meter behind panel—no screws show on front of panel. For stacking, thru holes are provided so stack can be bolted together. **Dielectric:** 1500 V rms. **Illumination:** Self-contained on request. **Size:** 3.437″ w. x 1.010″ h. x 3.921″ d. overall; panel cut out 2⁹⁄₁₆″ w. x ¹¹⁄₁₆″ h.

Model 231 is identical to above, but with wide face for improved readability.

DC INSTRUMENTS

No. 131- or 231-		Range	Scale Div.	Approximate Resistance	List Price*
Horiz.	Vertical				
1921010	....	0–10 V	50	5000 Ω/V	$24.40
1921025	....	0–25 V	50	5000 Ω/V	24.40
1921050	....	0–50 V	50	5000 Ω/V	24.40
1921100	....	0–100 V	50	5000 Ω/V	24.40
1921300	....	0–300 V	30	5000 Ω/V	24.40
4921001	4922001	0–1 mA	50	38 ohms	23.35
5921050	5922050	0–50 μA	50	2300 ohms	28.90
5921100	5922100	0–100 μA	50	900 ohms	25.20
5921200	....	0–200 μA	40	600 ohms	24.15
5921500	....	0–500 μA	50	134 ohms	23.85
5921750	5922750*	50–0–50 μA	50	900 ohms	25.20
2921001	....	0–1 A	50	0.05 ohm	24.40

*Available for Model 131 only.

AC INSTRUMENTS

No. 132- or 232-		Range	Scale Div.	Approximate Resistance	List Price*
Horiz.	Vertical				
1931150	....	0–150 V	30	2000 Ω/V	$29.70
1931300	....	0–300 V	30	2000 Ω/V	29.70

MODELS 121 AND 125 EDGEWISE PANEL METERS

Model 121 is a 2½″ flat edgewise meter utilizing a true flat Cormag mechanism design for shielding purposes. An inline scale is standard; eliminates parallax normally associated with edgewise meters. Red pointer increases readability. Front mounted zero corrector. **Accuracy:** 2% of FS value for DC; 3% of FS value for AC rectifier type. **Scale Length:** 1.9″; antiparallax inline scale. **Pointer:** Red lance type. **Movement:** Self shielded thin line Cormag mechanism. Shock mounted jewel arrangement. **Mounting:** Either horizontally or vertically. Mounting clips fasten to meter behind panel; no screws show on front of panel. For stacking, thru-holes are provided so stack can be bolted together. **Dielectric:** 2000 V rms. **Size:** 2.880″ w. x 1.010″ h. x 3.921″ d. overall; panel cut out, 2⁹⁄₁₆″ w. x ¹¹⁄₁₆″ h.

Model 125 is identical, but with wide face for best readability.

DC INSTRUMENTS

No. 121- or 125-		Range	Scale Div.	Approximate Resistance	List Price*
Horiz.	Vertical				
1921010	....	0–10 V	50	5000 Ω/V	$22.00
1921025	....	0–25 V	50	5000 Ω/V	22.00
1921050	....	0–50 V	50	5000 Ω/V	22.00
1921100	....	0–100 V	30*	5000 Ω/V	22.00
1921300	....	0–300 V	30*	5000 Ω/V	22.00
4921001	4922001	0–1 mA	50	39 ohms	20.95
4921005	....	0–5 mA	50	5.2 ohms	20.95
4921010	....	0–10 mA	50	2 ohms	20.95
4921025	....	0–25 mA	50	2 ohms	22.00
4921025‡	....	0–50 mA	50	2 ohms	22.00
4921100†	....	0–100 mA	50	5 ohms	22.00
4921150	....	0–150 mA	30	.33 ohm	22.00
4921250	....	0–250 mA	50	.20 ohm	22.00
4921500	....	0–500 mA	50	.10 ohm	22.00
5921050	5922050	0–50 μA	50	2300 ohms	26.50
5921100	5922100	0–100 μA	50	900 ohms	22.80
5921200	....	0–200 μA	40	600 ohms	21.50
5921500	....	0–500 μA	50	134 ohms§	21.25
5921750	5922750	50–0–50 μA	50	900 ohms	22.80
2921001	....	0–1 A#	50	.05 ohm	22.00

*50 for Model 125. †Available for Model 121 only. ‡Model 125 only. §125 ohms for Model 125. #External-shunt types (Model 125) for higher ranges are available; write for information.

AC INSTRUMENTS

No. 122- or 127-		Range	Scale Div.	Approximate Resistance	List Price*
Horiz.	Vertical				
1931150	....	0–150 V	30	2000 Ω/V	$27.05
1931300	....	0–300 V	30	2000 Ω/V	27.05

THIN LINE MODEL 111 SELF-SHIELDED PANEL METERS

Edgewise instrument using a flat Cormag mechanism for inherent shielding; permits mounting on magnetic or non-magnetic panels without adjustment. Can be stacked side-by-side without interaction. Shock absorption jewel arrangement assures long life. Designed to meet ASA C39.1 specifications. Mounts vertically or horizontally (specify) using mounting clips behind panel; no screws show on panel front; thru-holes provided for stacking. Red lance pointer. **Scale:** 1.25″ long. **Accuracy:** 2% FS, DC; 3% FS, AC rectifier type. **Size:** 1.810″ w. x .500″ h. x 2.440″ d. behind panel; fits 1.650″ x .500″ panel cutout.

AC (RECTIFIER TYPE) VOLTMETERS

Weston No. 112-		Range	Scale Div.	Approx. Resistance	List Price*
Horiz.	Vertical				
1931150	1932150	150 V	30	2000 Ω/V	$24.65

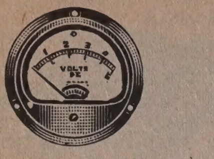
DC INSTRUMENTS

Weston No. 111-		Range	Scale Div.	Approx. Resistance	List Price*
Horiz.	Vertical				
5921050	5922050	50 μA	25	2300 Ω	$23.85
5921100	5922100	100 μA	20	900 Ω	20.40
5921200	5922200	200 μA	20	600 Ω	19.10
5921500	....	500 μA	25	134 Ω	18.80
5921750	5922750	50-0-50 μA	20	900 Ω	20.40
4921001	4922001	1 mA	20	39 Ω	18.55
4921005	....	5 mA	25	5.2 Ω	18.55
4921010	4922010	10 mA	20	2 Ω	18.55
4921025	....	25 mA	25	2 Ω	19.35
1921010	1922010	10 V	20	5000 Ω/V	19.35
1921025	....	25 V	25	5000 Ω/V	19.35
1921050	....	50 V	25	5000 Ω/V	19.35
1921100	....	100 V	20	5000 Ω/V	19.35
....	1922150	150 V	30	5000 Ω/V	19.35

★QUANTITY DISCOUNTS: LOTS OF 1-9, LIST; 10-24, —10%; 25-49, —15%

WESTON® PRECISION PANEL INSTRUMENTS

SERIES 201/301 ROUND PANEL INSTRUMENTS



Pacesetter 2½″ and 3½″ panel instruments for longer, better performance. **Features:** Spring-back jewels with locking nuts for fine adjustments; Alnico 5 magnets; Cormag® mechanism fully shielded from electrostatic effects; Bakelite§ cases, sealed against dust. Diecast parts in critical structural members assure complete interchangeability and permanent alignment. Designed for minimum power consumption, minimum response time. Cormag mechanism permits mounting on magnetic or non-magnetic panels without special adjustments. Affords excellent shielding from external magnetic fields and eliminates the possibility of intereffect of instruments in close proximity.

§Bakelite Corp. Trademark.

MODELS 201/301 DC METERS

Mechanism is DC Cormag self-shielded units and are suitable for use on most standard applications.

Model 201: Rated accuracy, 2% of full-scale value. Scale, 1.57″ (40 mm), core-magnet moving coil mechanism. Size: 2.68″ dia. (overall) x .31″ front of panel x 1.87″ back of panel. Mtg. hole, 2.20″ dia. **Model 301:** Rated accuracy, 2% of full-scale value. Scale, 2.46″ (60 mm), core-magnet moving coil mechanism. Size: 3.50″ dia. (overall) x .36″ front of panel x 1.81″ back of panel. Mtg. hole, 2.75″ dia.

DC VOLTMETERS (1000 OHMS/VOLT)

Range	Model 201 (2½″) Weston No. 201-	List Price*	Model 301 (3½″) Weston No. 301-	List Price*
1.5	....	....	1301114	$20.55
3	....	....	1301104	20.55
5	....	....	1301101	20.55
8	....	....	1301105	20.55
10	....	....	1301106	20.55
15	1301104	$19.40	1301107	20.55
30	1301105	19.40	1301108	20.55
50	1301106	19.40	1301102	20.55
100	....	....	1301111	20.55
150	1301108	19.40	1301112	20.55
200	....	....	1301113	21.40
300	1301111	20.00	1301103	21.40
500	1301112	20.55	1301115	21.40

DC AMMETERS

Self-contained shunts up through 50 amps; higher ranges require external shunting. MIL-S-61 shunts available on request.

1	2301101	$18.55	2301101	$20.00
1.5	....	....	2301105	20.00
2	....	....	2301102	20.00
3	2301103	18.55	2301103	20.00
5	2301104	18.55	2301104	20.00
10	2301105	18.55	2301106	20.00
15	....	....	2301107	21.40
20	2301107	20.00	2301114	21.40
30	2301108	20.00	2301108	21.40
50	2301110	20.00	2302101	21.40
30–0–30	....	....	2302113	21.40
50–0–50	....	....	2302102	21.40
100‡	2303101	18.55	2303101	20.00
150‡	....	....	2303105	20.00
200‡	....	....	2303102	20.00
300‡	....	....	2303103	20.00
500‡	....	....	2303104	20.00

‡External shunt type; price does not include 50 mV shunt.

DC MILLIAMMETERS

Ranges 40 mA and up are shunted; have approx. 100 mV drop.

1	....	....	4301111*	$20.00
1	4301101	$18.55	4301101†	20.00
2	....	....	4301105	20.00
3	....	....	4301106	20.00
5	....	....	4301107	20.00
10	4301103	18.55	....	....
15	....	....	4301102	20.00
20	....	....	4301109	20.00
50	4301107	18.55	4302101	20.00
100	4301108	18.55	4302102	20.00
200	....	....	4302103	20.00
300	....	....	4302108	20.00
500	4301110	18.55	4302104	20.00
1–0–1	4301111	18.55	4301110	20.00
10–0–10	....	....	4301112	20.00
50–0–50	....	....	4302110	20.00
100–0–100	4301112	18.55	4302106	20.00

Approx. ohm resistance: *27; †88.

DC MICROAMMETERS

20	....	....	5301107	$32.85
50	5301101	$26.75	5301104	27:90
100	5301102	22.60	5301101	23.75
200	5301103	19.40	5301105	20.55
500	5301104	19.40	5301106	20.55
10–0–10	....	....	5301110	32.85
50–0–50	5301106	22.60	5301109	23.75
100–0–100	5301107	19.40	5301102	20.55
500–0–500	....	....	5301103	20.00

★QUANTITY DISCOUNTS

1-9	10-24	25-49
List	List −10%	List −15%

MODELS 204/304 AC METERS

Mechanism is moving iron AC type, not shielded. **Model 204:** Rated accuracy, ±2% of full-scale. Scale, 1.57″ l. (40 mm), movable iron vane mechanism. Size: 2.68″ dia. (overall) x .31″ front of panel x 2.24″ back of panel. Mtg. hole, 2.20″ dia. **Model 304:** Rated accuracy, ±2% of full-scale. Scale, 2.13″ l. (54 mm), movable iron vane mechanism. Size: 3.50″ dia. (overall) x .36″ front of panel x 2.30″ back of panel. Mtg. hole, 2.75″ dia.

AC VOLTMETERS

25-125 Hz

Power consumption, 150 VAC range at 115 VAC, 0.65 watt at 60 Hz, 0.65 volt-ampere. Units are normally adjusted for use on frequencies 25 to 125 Hz; however, they may be adjusted for use on 400, 800 or 1600 or any specified frequency up to 2500 Hz for a nominal surcharge.

Range	Model 204 (2½″) Weston No. 204-	List Price*	Model 304 (3½″) Weston No. 304-	List Price*
10	1301103	$18.55	1301106	$19.40
15	1301106	18.55	....	....
30	....	....	1301108	19.40
100	....	....	1301111	19.40
130	....	....	1301112	20.00
150	1301101	19.10	1301101	20.00
300	1301104	19.10	1301115	20.00
500	....	....	1301117	24.40

AC AMMETERS

Power consumption, 5 ampere range at 5 amps, 0.125 watt at 60 Hz, 0.125 volt-ampere. For use on frequencies as specified.

25-500 Hz

1	2301104	$17.90	2301102	$19.05
3	....	....	2301105	19.05
5	2301101	17.90	2301101	19.05
10	2301107	17.90	2301107	19.05
15	2301102	17.90	2301108	19.05
20	2301108	17.90	2301109	19.05
30	2301109	17.90	2301110	19.05
50	2301103	17.90	2301111	19.05

25–500 Hz FOR USE WITH CURRENT TRANSFORMERS

Prices shown do not include Model 605 or Model 607 transformer.

Range, Amps	Amps Scale	(3½″) Weston No.	List Price*
5	0–200	304-2301113	$19.05
5	0–300	304-2301114	19.05

AC MILLIAMMETERS

Range	Model 304 (3½″) Weston No.	List Price*
100	304-4301103	$19.05
500	304-4301101	19.05

MODEL 308 THERMO-METERS

MODEL 308 THERMO-AMMETERS

Model 308: Power consumption, 1–4 amps varies from 0.2–0.4 amp, approximately 5 amps and above 0.2 watt per amp. Frequency error less than 2% up to 65 megahertz. Rated accuracy 2% of full scale. Scale, 2.36″ (60 mm). Thermocouple type.

Range, Amps	Model 308 (3½″) Weston No.	List Price*
1	308-2301101	$48.70
3	308-2301104	48.70
5	308-2301105	48.70
8	308-2301106	48.70
10	308-2301107	48.70
15	308-2301108	48.70

MODEL 308 EXPANDED SCALE THERMO-AMMETERS

Range, Amps	(3 ½″) Weston No. 308-	List Price*	Range, Amps	(3½″) Weston No. 308-	List Price*
1	2302101	$61.35	10	2302109	$61.35
5	2302103	61.35	15	2302110	61.35
8	2302104	61.35	20	2302111	61.35

WESTON® PANEL INSTRUMENTS

SERIES 201/301
ROUND
PANEL INSTRUMENTS
(CONTINUED)

Pacesetter 3½″ panel instruments for longer, better performance. **Features:** Spring-back jewels with locking nuts for fine adjustments; Alnico 5 magnets; Cormag® mechanism fully shielded from electrostatic effects; Bakelite§ cases, sealed against dust. Diecast parts in critical structural members assure complete interchangeability and permanent alignment. Designed for minimum power consumption, minimum response time. Cormag mechanism permits mounting on magnetic or non-magnetic panels without special adjustments. Affords excellent shielding from external magnetic fields and eliminates the possibility of inter-effect of instruments in close proximity.

§Bakelite Corp. Trademark.

MODEL 302 RECTIFIER TYPE AC INSTRUMENTS

For most standard applications. Accuracy within 3% F.S. on waveforms approximating the sine wave at ordinary room temperatures.

AC VOLTMETERS (1000 OHMS/VOLT)

Range	Scale Divisions	Weston No. 302-	List Price•
10	50	1301103	$28.45
150	75	1301108	28.45
300	60	1301109	29.35

AC MILLIAMMETER

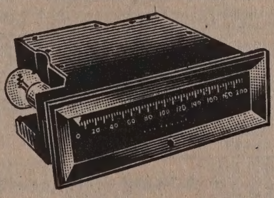
Range	Scale Div.	Approx. Resis.	Weston No. 302-	List Price•
1	50	470 ohms	4301101	$28.45

MODEL 306 DC MICROAMMETERS

DC type external magnet units, not shielded and are applicable for use where high sensitivities, special ballistic characteristics, etc., are needed. Same size and accuracy as Model 301.

Range	Scale Div.	Approx. Resis.	Weston No. 306-	List Price•
20	40	1480 ohms	5601104	$36.45
50	50	1175 ohms	5301107	32.35
100	50	660 ohms	5301102	29.70
200	40	55 ohms	5301101	29.70

MODEL 1201 FLAT-SCALE EDGEWISE PROJECTED MOVING POINTER METERS



First true, flat scale, edgewise instrument priced comparably to mechanical pointer types. Pointer is projected on the same plane as the scale divisions to eliminate parallax; projection path arranged for an essentially linear scale. Basic mechanism is Cormag® design for inherent self-shielding; unaffected by panel material. All-glass optical system, thermosetting plastic case and 10,000 hour lamp assure trouble-free service. Designed to meet ASA C39.1 specifications. Filters may be placed behind the scale so pointer will change color at a fixed point using up to two colors plus white on a single instrument; standard colors are red, green or amber. **Scale:** 4½″. **Accuracy:** 1% F.S. DC. **Lamp:** GE No. 6 operating at 5 V, 2.86 amps; 10,000 hours min. expected life. **Size:** 5 21/32″ w. x 2 1/32″ h. x 5 19/32″ d., overall.

DC INSTRUMENTS

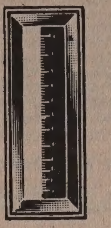
Weston Model	Range	Scale Div.	Approx. Resistance	List Price•
1201-1911010	10 V	100	1000 Ω/V	$88.10
1201-4911001	1 mA	100	18.8 Ω	84.20
1201-5911050	50 μA	100	2300 Ω	93.50
1201-5911100	100 μA	100	640 Ω	90.85
1201-5911750	50–0–50 μA	100	640 Ω	90.85

•QUANTITY DISCOUNTS

1-9	10-24	25-49
List	List −10%	List −15%

MODEL 1316 OPTICAL RIBBON INDICATOR

VERTICAL MOUNTING



First ribbon indicator for use with electronic systems. Ideal wherever simultaneous readoff of multiple parameters is necessary, as for temperature profiles, medical patient-station monitoring, inspection histograms, gauging liquid or material levels, or monitoring a roomful of machining operations. Optical projection eliminates parallax; scale can be changed freely without exposing mechanism. Flat design permits side-by-side mounting for group display; self-shielding (per ASA C39.1) eliminates interaction of units. Scale: 4½″ long; white figures and divisions on black background, red ribbon. **Accuracy:** 2% F.S. **Lamp:** No. 561 operating at 11 V, .8 amp AC or DC; 8,000 hrs. min. expected life. **Size:** 1.84″ w. x 5.80″ d. x 5.43″ h. behind panel; removable bezel is 2.26″ w. x .25″ th. x 6.00″ h. Wt., approx. 2 lbs. Panel cutout, 1.875″ w. x 5.50″ h.; for group display, allow 2.2″ of panel cutout width per meter for 2–4 meters, 2.25″ per meter for 5–10.

DC VOLTMETERS/MILLIVOLTMETERS

Weston No.	Range	Approximate Resistance, Ohms/Volt	List Price*
1316-9912050	0–50 mV	500	$97.00
1316-1912001	0–1 V	1000	96.50
1316-1912005	0–5 V	1000	96.50
1316-1912010	0–10 V	1000	96.50

DC MILLI/MICROAMMETERS

Weston No.	Range	Approximate Resistance, Ohms	List Price*
1316-5912050	0–50 μA	815.0	$97.00
1316-5912100	0–100 μA	184.0	95.85
1316-5912200	0–200 μA	131.0	95.85
1316-4912920	4–20 mA*	2.5	95.30
1316-4912950	10–50 mA*	1.0	95.30
1316-4912001	0–1 mA	13.8	95.30
1316-4912005	0–5 mA	10.0	95.30
1316-4912020	0–20 mA	2.5	95.30
1316-4912050	0–50 mA	1.0	95.30
1316-4912100	0–100 mA	0.5	95.30

*Suppressed zero.

MODEL 9960 SCALES

Fifty-division, captionless scales can be used to replace those integral with stock Series 1316 meters for readout in different units of measurement.

Scale Range	Weston No. 9960-	List Price*
0–1	0266933	$2.10
0–5	0266934	2.10
0–10	0266935	2.10
0–50	0266848	2.10
0–100	0266812	2.10

★QUANTITY DISCOUNTS

1-9	10-24	25-49
List	List −10%	List −15%

WESTON® PRECISION PANEL INSTRUMENTS

SERIES 1900 PANEL INSTRUMENTS

Mounting styles: Semi-flush, flush (with bezel) or recessed. Instruments are available with Bakelite• front or plastic front if desired (same price). 7½" sizes, plastic only. Gray or yellow colored plastic inserts with plastic fronts on Series 1920, 1930, 1940 and 1950, add **60c** to price. All items listed are stock. Non-stock items available on special order; write for complete information and prices. Scale arcs for both AC and DC meters 100°. **DC Meters:** Types 1946 (4½") and 1976 (7½") have DC external magnet mechanism, knife-edge pointer and mirror scale with 1% accuracy; 1976 available in ½% accuracy. All others come with Cormag® mechanism with 2% accuracy (except 1971, 1%); 1921, 2½" size; 1931, 3½"; 1941, 4½"; 1971, 7½". **AC Rectifier-Type Meters:** Have AC rectifier Cormag mechanism with 2% accuracy; 1922, 2½"; 1932, 3½"; 1942, 4½". **AC Iron-Vane Meters:** Iron-vane mechanism with 2% accuracy; 1924, 2½" size; 1934, 3½"; 1944, 4½"; 1954, 5".

•Bakelite Corp. trademark.

MILLIAMPERES
D.C.
WESTON

PLASTIC

MILLIAMPERES
D.C.
WESTON

BAKELITE

DC AMMETERS

	List Price*		
Range	Model 1921	Model 1931	Model 1941
1	$19.00	$19.60	$20.95
2	19.00	19.60	20.95
5	19.00	19.60	20.95
10	19.00	19.60	20.95
20		19.60	
25			20.95
30	19.00	19.60	20.95
100*	19.00		20.95
200*			20.95
500*		19.60	

*50 mV for use with external shunts.

DC MILLIAMMETERS

	List Price*		
Range	Model 1921	Model 1931	Model 1941
1	$19.00	$19.60	$20.95
5		19.60	20.95
10	19.00	19.60	
15			20.95
20		19.60	
50	19.00	19.60	20.95
100	19.00	19.60	
200	19.00	19.60	20.95
300	19.00	19.60	20.95
500	19.00	19.60	20.95

DC MICROAMMETERS

1% ACCURACY

Model 1946		Model 1971	
Range	List Price*	Range	List Price*
20	$29.65*	100	$35.70
50	37.80	200	34.65
100	36.75		

*2% accuracy.

DC MICROAMMETERS (CONT'D)

2% ACCURACY

	List Price*		
Range	Model 1921	Model 1931	Model 1941
50	$24.25	$24.85	$26.25
100	22.65	23.10	24.25
200	21.55	22.65	23.40
500	20.95	20.95	22.30
25–0–25			26.25
50–0–50	22.65	23.10	24.25
100–0–100	21.55	22.65	23.40
500–0–500	19.00		20.95

DC VOLTMETERS

	List Price*		
Range	Model 1921	Model 1931	Model 1941
5	$20.10	$20.70	$22.05
10	20.10	20.70	22.05
15	20.10	20.70	22.05
25	20.10	20.70	22.05
30	20.10	20.70	22.05
50	20.10	20.70	22.05
100		20.70	22.05
150	20.10	20.70	22.05
200	20.10		
300		20.70	22.05
500	20.10	20.70	

AC RECTIFIER-TYPE METERS

	List Price*		
Range	Model 1922*	Model 1932	Model 1942
150 V		$26.70	$28.15
1 mA	$25.10		

*3% accuracy.

AC IRON-VANE METERS

AC VOLTMETERS, 25–125 Hz

Models 1944 and 1954 available at fixed frequency of 400 Hz ±10% at $3.50 extra.

	List Price*			
Range	Model 1924	Model 1934	Model 1944	Model 1954
7.5			$20.95	
10		$20.10	20.95	
15			20.95	
25		20.10	20.95	
30			20.95	
50		20.10	20.95	
100			20.95	
150	$19.60	20.10	20.95	$26.70
300	19.60	20.10	20.95	26.70
500			20.95	

AC MILLIAMMETERS

10		$19.00		
200			$20.10	
500			20.10	

AC AMMETERS, 25–500 Hz

1		$19.00	$20.10	
2		19.00	20.10	
3		19.00		
5	$18.75	19.00	20.10	$25.95
10	18.75	19.00	20.10	
15	18.75			
20	18.75	19.00	20.10	
25		19.00	20.10	
30	18.75		20.10	
50	18.75	19.00	20.10	
100*	18.75	19.00	20.10	
200*		19.00		
300*		19.00		

*5 amp range for use with external transformer.

SERIES 1900T TAUT BAND PANEL METERS

Same as 1900, but with taut band mechanism. Up to four times the sensitivity of conventional types; no pivots, jewels or springs needed. 1936T (3½"), 1946T (4½") and 1956T (5½") have external DC magnet; all others employ DC Cormag mechanism. Accuracy, ±2% except as noted.

DC AMMETERS

	List Price*			
Range	Model 1931T	Model 1941T	Model 1941T*	Model 1951T*
1	$21.55	$22.90		
5	21.55	22.90	$30.85	
10	21.55		30.85	
20		22.90	30.85	
30	21.55	22.90		

DC MILLIAMMETERS

1	$21.55	$22.90	$30.85	$32.80
5	21.55	22.90	30.85	
10			30.85	
20			30.85	
50	21.55	22.90	30.85	
100			30.85	
200			30.85	
500		22.90	30.85	

Model 1971T—Range 1. Accuracy 1%. Self-shielding. List Price......**$34.75***

DC MICROAMMETERS

50	$27.30	$28.65		
100	25.60	26.70	$34.75	$38.05
200	24.25	25.95	34.20	36.65
500		24.50	32.25	

*1% accuracy; with knife-edge pointer and mirror scale.

DC MICROAMMETERS (EXT. MAG.)

	List Price*		
Range	Model 1936T	Model 1946T	Model 1956T
5	$41.65	$45.45	
10	36.40	40.25	$43.30
20	31.15	35.00	
50		43.60	
100		42.45	

DC VOLTMETERS

	List Price*			
Range	Model 1931T	Model 1941T	Model 1941T*	Model 1951T*
2			$31.95	
10			31.95	
15	$22.65		31.95	$33.90
30	22.65	$24.00	31.95	
50	22.65	24.00	31.95	
100	22.65			
150			31.95	
500	22.65		31.95	

NULL INDICATORS

Model 1936T—List Price......**$43.85***
Model 1946T—List Price...... **45.15***

2½" MICRO- AND MILLIAMMETERS

Range µA	1921T List*	Range, mA	1921T List*
50	$26.75	1	$20.95
100 or 50–0–50	24.85		

HALF-FRAME MOUNTING BEZELS

Half-frame bezels mount 1900 series meters so only the scale is visible. For use only with clear-plastic-front instruments. Flat black enamel finish; for panels ⅛" thick max.

Weston No.	For Models	List*
1909-0198486	1921, 2, 4	$2.00
1909-0198487	1931, 2, 4, 6, 8 or T	2.00
1909-0198488	1941, 2, 4, 6, 8 or T	2.00
1909-0198489	1951, 2, 4, 6, 8 or T	2.00
1909-0256375	1971, 6 or T	7.00

ILLUMINATION KITS

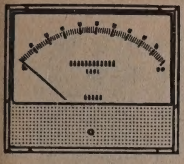
For use with plastic-front meters only. With half-frame bezel, 2 mounting brackets and socket for NEMA #47 lamp, not supplied.

245509	Series 1930	$5.25
245510	Series 1940	5.25
245511	Series 1950	5.75

★QUANTITY DISCOUNTS: LOTS OF 1-9, LIST; 10-24, —10%; 25-49, —15%

WESTON® PRECISION PANEL INSTRUMENTS

SERIES 2000 PANEL INSTRUMENTS



Choice of three sizes

- SNAP-IN COVERS FOR SCALE REPLACEMENT
- CORMAG® MECHANISM
- FLATTENED SCALE ARC
- TAUT-BAND OR PIVOT AND JEWEL MOVEMENT
- KNIFE-EDGE POINTER

Attractive panel meters are styled to complement the appearance of equipment, rather than dominate it. Flattened scale arc gives excellent readability. Convenient snap-in covers permit easy scale replacement; use of a simple tool for replacement guards against finger snap-off of covers. Cormag® mechanism uses specially treated Alnico V magnet for full shielding from magnetic effects and long term stability. Offers the best combination of high torque with a minimum response time and minimum power consumption. Meets ANSI C39.1 standard. Features excellent dust sealing, plus the option of superior moisture-resistant sealing where required in critical environmental conditions. Easily adaptable to external illumination. Pivot and jewel types have spring back jewels. Half bezel is available for rear-of-panel mounting. Zero corrector is accessible from front of panel through bezel; no need to cut separate panel hole.

SPECIFICATIONS

All models have knife-edge pointer and plain scale; mirror scale available.

Model	Size	Function	Accuracy, Full-Scale†	Scale Length
2021	2½″	DC	2%	2.13″
2022	2½″	AC Rect.	3% (60 Hz)	2.13″
2031	3½″	DC	2%	2.7″
2032	3½″	AC Rect.	3% (60 Hz)	2.7″
2041	4½″	DC	2%	3.7″
2042	4½″	AC Rect.	3% (60 Hz)	3.7″
2051	5½″	DC	2%	4.5″
2052	5½″	AC Rect.	3% (60 Hz)	4.5″

†Except 1% types listed below.

DIMENSIONS

Depth behind panel, 1.140″ (1.725″ including terminal stud).

Model	Width	Height	Panel Hole Dia.	Mounting Centers‡	
				W.	H.
2021	2.800″	2.400″	2.200″	1.880″	1.880″
2022	2.800″	2.400″	2.200″	1.880″	1.880″
2031	3.500″	2.980″	2.820″	2.250″	2.250″
2032	3.500″	2.980″	2.820″	2.250″	2.250″
2041	4.530″	4.050″	2.820″	4.000″	3.562″
2042	4.530″	4.050″	2.820″	4.000″	3.562″
2051	5.630″	4.490″	2.820″	5.250″	3.000″
2052	5.630″	4.490″	2.820″	5.250″	3.000″

‡Four mounting studs, .500″ long.

PIVOT AND JEWEL METERS

DC MICROAMMETERS

Range	Resis., Ohms	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
50	2500	5841050	$24.25	$24.85	$26.25	$32.70
100	2300	5841100	22.65	23.10	24.25	#
200	850	5841200	#	#	23.40	22.90
50–0–50	2300	8888001	22.65	23.10	24.25	30.55

DC MILLIAMMETERS

Range	Resis., Ohms	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
1	85	4841001	$19.00	$19.60	$20.95	$25.85
2	16	4841002	#	#	#	#
5	9	4841005	#	#	20.95	#
10	2.2	4841010	19.00	19.60	#	#
20	1.6	4841020	#	#	#	#
50	2.0	4841050	19.00	19.60	20.95	#
100	1.0	4841100	19.00	19.60	#	#
200	0.5	4841200	19.00	#	#	#
300	0.33	4841300	19.00	#	20.95	#
500	0.2	4841500	#	19.60	20.95	#

DC AMMETERS

Range	Approx. Voltage Drop	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
1	50 mV	2841001	$19.00	$19.60	$20.95	$26.70
2	50 mV	2841002	#	#	20.95	#
5	50 mV	2841005	19.00	19.60	20.95	26.70
10	50 mV	2841010	#	19.60	#	26.70
25	50 mV	2841025	19.00	19.60	20.95	#
50	50 mV	2841050	19.00	19.60	20.95	#
100†	....	8841100	19.00	19.60	20.95	#

†50 mV for use with external shunts.

DC VOLTMETERS

Range	Ohms/ Volt	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
5	1000	1841005	$20.10	#	#	#
10	1000	1841010	20.10	$20.70	$22.05	#
25	1000	1841025	#	20.70	#	#
50	1000	1841050	20.10	20.70	22.05	#
150	1000	1841150	20.10	20.70	22.05	#
200	1000	1841200	20.10	#	#	#
300	1000	1841300	20.10	20.70	22.05	#

AC VOLTMETERS (RECTIFIER TYPE)

Range	Ohms/ Volt	Weston No.*	List Price*			
			Model 2022	Model 2032	Model 2042	Model 2052
15	1000	1841015	#	#	#	#
30	1000	1841030	#	#	#	#
75	1000	1841075	#	#	#	#
150	1000	1841150	#	$26.70	#	#
300	1000	1841300	#	#	#	#

*Complete Weston No. consists of Model number (2021, 2032, etc.) followed by suffix indicated in table; e.g., 2021-4841001.
#Non-stock item.

TAUT-BAND METERS

DC MICROAMMETERS (2% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
50	950	5842050	$26.75	$27.30	$28.65	#
100	845	5842100	24.85	25.60	26.70	#
200	275	5842200	23.95	24.25	25.95	#
500	60	5842500	22.95	#	24.50	#
50–0–50	845	8888004	24.85	25.60	#	#
100–0–100	275	8888005	23.95	#	#	#
500–0–500	16.5	8888006	#	#	#	#

DC MICROAMMETERS (1% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
100	845	5812100	....	....	$34.75	$38.05
200	275	5812200	....	....	34.20	36.65

DC MILLIAMMETERS (2% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
1	16.5	4842001	$20.95	$21.55	$21.55	$28.35

DC MILLIAMMETERS (1% ACCURACY)

Range	Resis., Ohms	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
1	16.5	4812001	....	....	$30.85	$32.80

DC VOLTMETERS (1% ACCURACY)

Range	Ohms/ Volt	Weston No.*	List Price*			
			Model 2021	Model 2031	Model 2041	Model 2051
50	1000	1812050	#	#	$31.95	#

VU METERS

Type A scale stresses the level in "VU" units for monitoring wire lines.

Scale Type	Weston No.*	List Price*		
		Model 2022	Model 2032	Model 2042
Type 30 A	3841001	$33.10	$33.60	$35.00

#NON-STOCK ITEMS

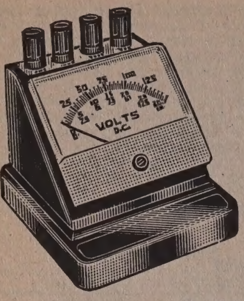
Series 2000 panel meters are available in a variety of ranges in addition to those listed above, as non-stock items. Pivot and jewel meters are available to read DC microamps, AC microamps and AC milliamps. Taut-band meters are available to read DC amps, DC milliamps, AC and DC volts, AC milliamps and AC microamps. Write for complete information and prices.

★QUANTITY DISCOUNTS

Lots of 1–9	Lots of 10–24	Lots of 25–49
List	List −10%	List −15%

WESTON® PRECISION TEST INSTRUMENTS, CURRENT TRANSFORMERS

SERIES 2930 LAB/PRODUCTION BENCH TESTERS



Well known Weston 1900 Series meters mounted in a sloped panel for ease of reading. Spring back jewels with locking nuts for fine adjustment. Large scale is readable at a distance. Color coded for DC and AC (yellow plastic insert for DC, red for AC). Zero corrector. High impact resistant plastic case. Null indicators have knife edge pointer and mirror dot at null. Others have lance pointer. DC testers have self-shielded Cormag® mechanism; AC, rectifier type shielded mechanism. Null indicators have external critical damping resistance of 50K (35K for 2936-4721060). **Accuracy:** ±2%. **Size:** 4.21″ w. x 4.73″ d. x 3.46″ h.

DC BENCH TESTERS

Weston Model	Range	Sensitivity	Scale Division	List Price*
2931-1722054	150/15/1.5 V	1000Ω/V	75	**$47.50**
2931-1722053	30/15/3 V	1000Ω/V	60	**47.50**
2931-1722052	30/3/1.5 V	1000Ω/V	60	**47.50**
2931-2721057	30/3/1.5 amps	....	60	**70.50**

AC BENCH TESTERS

Weston Model	Range	Sensitivity	Scale Division	List Price*
2932-1722063	300/150/30 V	1000Ω/V	60	**$53.50**
2932-1722062	150/15/3 V	1000Ω/V	75	**53.50**
2934-2722065	30 amps	.00056Ω	60	**34.50**
2934-2722064	5 amps	.016Ω	50 (0–100)† 75 (0–150)†	**34.50**

†Double scale for use with external accessories (eliminates interpolation problems).

NULL INDICATORS

Weston Model	Scale	μA/Div.	Moving Coil Resis., Ohms	End Scale Sensitivity	List Price*
2931-4721059	30–0–30	2	1200, ±20%	60–0–60μA#	**$32.50**
2936-4721060	30–0–30	1	2000, ±20%	30–0–30μA#	**45.00**

#±2%.

Weston Model 187269-901 Two Terminal Assembled Base—Includes base, terminals, internal leads from terminals to meter. Meter not supplied. List Price........................**$8.50***

CURRENT TRANSFORMERS

MODEL 461
CURRENT TRANSFORMERS

Used with AC instruments. Four self-contained primary ranges are brought out to binding posts. A secondary short circuiting switch is provided. Black molded case. **Core Opening:** 2.12″ dia. **Size:** 7.97″ x 6.63″ x 2.75″. **Weight:** Type 1, 8 lbs. Type 2, 8.4 lbs.

Type 1: Primarily used for ammeter applications.

Type 2: Primarily used for wattmeter applications.

Type 5: Similar to Type 2 except for additional ranges.

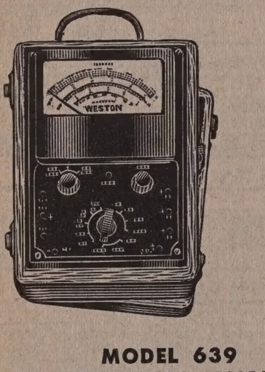
Ranges in Amperes	Type	Weston No.	List Price*
800/400/200/100/50/20/10 Pri. to 5 Sec.	1	**461-9901001**	**$229.00**
800/400/200/100/50/20/10 Pri. to 5 Sec.	2	**461-9902001**	**287.50**
1000/500/250/100/50/25/10 Pri. to 5 Sec.	1	**461-9901002**	**229.00**
1000/500/250/100/50/25/10 Pri. to 5 Sec.	2	**461-9902002**	**287.50**
500/250/100/50/25/10/5/2.5/1/0.5 Pri. to 5 Sec.	5	**461-9902003**	**304.50**

MODEL 327
CURRENT TRANSFORMERS

Units employ special nickel-alloy cores, making them ideal for laboratory as well as industrial usage. Type 2 differs from Type 1 in that it provides maximum precision. **Size:** 9.93″ x 8.38″ x 3″. Inserted primary opening, 2.85″ dia. Weight (approx.), 12.5 lbs.

Ranges in Amperes	Type	Weston No.	List Price*
1200/600/400/300/200/100/50/20/10 Pri. to 5 Sec.	1	**327-9901001**	**$338.50**
1200/600/400/300/200/100/50/20/10 Pri. to 5 Sec.	2	**327-9902001**	**458.00**

MODEL 779 PORTABLE ANALYZER



Model 779 is an ultra-sensitive 26-range portable analyzer. It covers 5 DC voltage ranges at a sensitivity of either 1000 or 20,000 ohms per volt. Fully AC temperature compensated. Precision resistors throughout the circuit. Servicemen and technicians find it ideal for measurement of tube circuits, as in electronic receivers, transmitters and electronic control equipment: For television and wire communications systems; power level in decibels in high fidelity and other audio equipment, public address systems, telephone or speech lines; maintenance of electronic control and alarm systems; checking leakage of condensers; measuring resistance in all types of circuits. A highly useful instrument because of its compact size and portability. It is supplied in a sturdy oak case designed to withstand heavy wear. The oak cover is removable. Convenient carrying handle. Standard leads. **DC Voltage:** 2.5, 10, 50, 250 and 1000 volts. **AC Voltage:** 2.5, 10, 50, 250 and 1000 volts. **DC Current:** 0.1, 1, 10, 50 and 250 mA and 1 and 10 amps. **Decibels:** −14 to +2 substantially flat to 10,000 Hz; −2 to +14 substantially flat to 10,000 Hz; +12 to +28 substantially flat to 10,000 Hz; +26 to +42 substantially flat to 3000 Hz; +38 to +54 substantially flat to 1000 Hz, (6 milliwatts, 500 ohms, zero level). **Ohms:** 0–3000, 0–30,000, 0–300,000 and 0–30 megohms. **Accuracy:** AC, ±3%; DC ranges, ±2%, 1,000 volt range ±3%; ohms, ±2% of arc length. **Size:** 6⅜″ x 9⅛″ x 4⅞″. Wt., 6 lbs.

Weston Model 779 Type 8 Analyzer—List Price.... **$291.00**

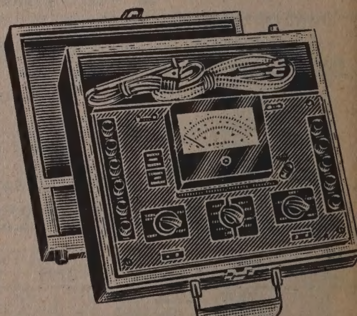
MODEL 639
AC INDUSTRIAL ANALYZER
(NOT ILLUSTRATED)

Accurate self-contained power analyzer for use in general industrial testing and installation work. Measures AC current and voltage in single or polyphase circuits, as well as power factor in 3 phase balanced circuits. Uses 4″ by 4½″ instruments. Voltmeter, ammeter and power factor meter accurate to 1%. Wattmeter within 2%. For measuring instantaneous current surges such as motor starting currents, the ammeter has an adjustable pointer stop. Scale Length: 3.5″. Size: 18⅞″ w. x 6⅞″ d. x 10⅞″ h. Weight, 32 lbs.

Weston Model 639-9900002 Type 2—3-phase, 3-wire. **Voltage:** 600/300/150 v. **Current:** 125/25/5 amps. **Watts:** 100/50/25/20/10/5/4/2/1 kw. **Power Factor:** .30 lag through unity to .80 lead. **Frequency:** 25–125 Hz. List Price.......**$1285.00**

MODEL 785 (TYPE II) INDUSTRIAL CIRCUIT TESTER

28 PRACTICAL SELF-CONTAINED RANGES



DC Volts—100 mv direct for use with external shunts and 1/10/50/200/500/1000 volts (20,000 ohms per volt). Accurate within ±2% to 500 volts, ±3% at 1000 volts.

AC Volts—5/15/30/150/300/750 volts (1000 ohms per volt). Accurate within ±3%.

DC Current—50 microamperes, 1/10/100 ma, 1/10 amps. Accurate within ±2%. Higher ranges and full scale reading with 100 mv external shunts.

AC Current—.5/1/5/10 amperes. Accurate within ±3% on 60 cycles. Higher ranges with external current transformers.

Resistance—3000/30,000/300,000 ohms, 3/30 megohms, full scale. 25/250/2,500/25K/250K ohms center scale. Self-contained batteries. Accurate within ±2% of linear arc length.

Size: 13″ x 12½″ x 5½″. Approx. weight, 13½ lbs.

Weston Model 785-9900008 Wood—In polished wood carrying case. List Price.. **$302.50**

Weston Model 785-9900008—In steel case for bench use. List Price........**$264.50**

★QUANTITY DISCOUNTS: LOTS OF 1-5, LIST; 6-14, —5%; 15–24, —10%; 25 UP, —15%

WESTON® FREQUENCY COUNTERS, PROGRAMMABLE TIMER & SCALER

MODELS 1253, 1254 AND 1255

FREQUENCY COUNTERS

All solid state IC designed frequency counters feature high input sensitivity and wide frequency range. All three models (1253, 1254, 1255) feature: Separate 1 megohm/15 pF and 50 ohm inputs; 7 digit LED type readouts; external clock BNC input terminal for frequency ratio measurements; leading zeros automatically blanked; 1 MHz time base (TCXO on 1254 and 1255); front panel reset button; four time base switch positions give resolution to 0.1 Hz; overrange indicator and strong metal case with carrying handle/positive detent tilt stand; 120/240 VAC, 50/60 Hz operation standard; shipping weight, 10 lbs.

MODEL 1253 200 MHz FREQUENCY COUNTER

Model 1253 provides accuracy and stability enough for most general design and testing applications. Seven digits of easily read LED's plus automatic leading zero blanking makes the 1253 a leader in its price class. **Frequency Range:** "A" input, 1 Hz to 65 MHz; "B" input, 10 MHz to 200 MHz (1 Hz to 230 MHz typical). **Time Base Type:** 1 MHz crystal. **Long Term Stability:** One part in million/mo.; 7.5 parts in million/yr. Front panel rotary switch allows fast selection of time bases. Carrying handle quickly locks into any of three positions, providing a handy tilt stand.

Weston No. 1253-0275040 200 MHz Counter—List. . .**$625.00***

MODEL 1254 200 MHz PROGRAMMABLE COUNTER

Model 1254 features the same high input sensitivity and wide frequency range of Model 1253, together with very high stability TCXO (temperature controlled) time base allowing precise measurements. Model 1254 also incorporates complete remote programming capability. Inputs allow total external manual or computer control of range, input select (either high or low impedance input), reset or count inhibit, using standard TTL-level logic. Outputs are seven digits of BCD frequency information. Overrange flag, decimal points, print command and 5 volt reference and ground to drive all remote programming inputs. Internal 5 volt supply eliminates the need for external TTL-level supply in remote programming mode. **Frequency Range:** "A" input, 1 Hz to 65 MHz; "B" input, 10 MHz to 200 MHz (1 Hz to 230 MHz typical). **Long Term Stability:** 1 part in 10 million/mo.; 1 part in million/yr. **Time Base Type:** 1 MHz TCXO. TCXO is factory set to ±0.1 Hz and can easily be field recalibrated to this tolerance. Carrying handle quickly locks into any of three positions, providing a handy tilt stand.

Weston No. 1254-0275041 200 MHz Programmable Counter—List Price. **$795.00***

MODEL 1255 600 MHz PROGRAMMABLE COUNTER

High performance counter with the features of Model 1254. Extremely stable TCXO time base (same specifications as 1254) and complete remote programming capability. Model 1255 provides a self-contained frequency range to 600 MHz (prescaled by 10) for measurements capability well into the UHF region. Frequency ranges on the 50 ohm input can be selected by front panel switch: 10 MHz to 200 MHz direct counting and 40 MHz to 600 MHz prescaled. Carrying handle quickly locks into any of three positions, providing a handy tilt stand.

Weston No. 1255-0275042 600 MHz Counter—List. . .**$975.00***

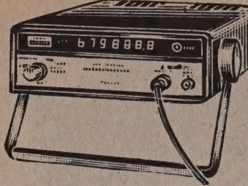
MODEL 1251 PROGRAMMABLE TIMER

Compact, lightweight time measuring device for measuring time intervals, period, period average, events (totalizing), scaled events and frequency ratio. Both start (A) and stop (B) inputs are internally switch-selected to allow for measuring zero-crossing or TTL-level signals. **Input Impedance:** 1 megohm shunted by less than 50 pF. **Maximum Input Voltage:** ±50 VDC referenced to ground for either or both sides of input. **Sensitivity:** Zero crossing mode, 100 mV rms; TTL/relay mode, TTL compatible. **Minimum Pulse Width:** Zero crossing mode, 100 nsec at 300 mV p-p; TTL/relay mode, 50 nsec at TTL levels. **Range:** Time A-B, 0.1 μsec to 9999.9 sec; period average, 50 nsec to 9999.9 sec; events, 1 to 99999. **Resolution:** Time A-B, 100 msec to 100 nsec; period average, 100 nsec/number of periods averaged. **Accuracy:** ±1 count ± time base accuracy ± trigger error (start/stop). **External Oscillator Input Range:** DC to 12.5 MHz. **Readout:** Five 7-segment LEDs plus 3 incandescent lamps and 2 decimal points for range indication and overrange. **Time Base:** Frequency, 10 MHz; aging rate, less than 5 ppm/yr.; line voltage stability, less than ±1 part in 10 million for 10% line variation; temperature stability, ±5 ppm 10° C to 40° C ambient referenced at 25° C. **BCD Output:** Rear panel connector for 5 digits of BCD; overrange flag; completion flag; 5 volt reference (at 1000 ohms); ground and range programming inputs; max. cable length, 18″. Connect a TTL-compatible digital printer to back for automatic recording. **Fuse:** 125 volt, ¼ amp slow blow; 250 volt, ⅓ amp slow blow. **Power Required:** 105–125 volts, 50/60 Hz, 23 watts (210–250 volts by changing internal switch and fuse). **Size:** 6¾″ w. x 9¹⁄₁₆″ d. x 2¼″ h. Weight, 4½ lbs.

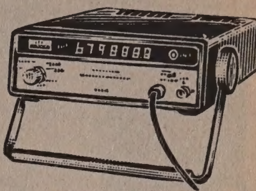
Weston No. 1251-0275038 20 MHz Timer—List. **$495.00***

★QUANTITY DISCOUNTS

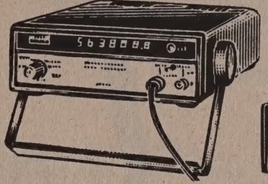
Qty.	Discount	Qty.	Discount	Qty.	Discount
1–4	None	5–9	5%	10 Up	15%



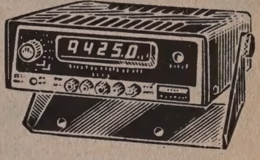
Model 1253



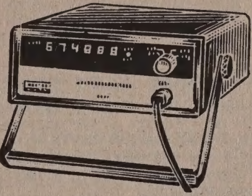
Model 1254



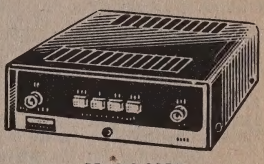
Model 1255



Model 1251



Model 1252



Model 1259

MODEL 1252
AUTO-RANGING FREQUENCY COUNTER

Compact, lightweight counter designed for frequency measurements from less than 5 Hz to beyond 30 MHz. Front panel range switch allows selection of two preset gate intervals and Auto-Range. This unique function automatically determines the correct range for maximum resolution without overranging the instrument. In two manual range positions LSD remains valid even though MSD is out of display range. All solid state IC design. Automatic blanking of redundant zeros. **Input Frequency Range:** 5 Hz to 30 MHz min. **Input Sensitivity:** 10 mV rms. **Input Impedance:** 1 megohm shunted by greater than 15 pF. **Maximum Input Voltage:** 200 V rms. **Oscillator Frequency:** Time base, 1 MHz; external, DC to 2 MHz. **Oscillator Settability (Time Base):** ±0.1 ppm. **Time Base Oscillator Temperature Stability:** ±10 ppm max. 0 to 40° C ambient. **External Oscillator Sensitivity:** TTL or 2.5 V rms from 50 ohm source. **External Oscillator Protection:** −5 V peak to +10 V peak. **Manual Ranges (Gate Interval):** kHz, 1 sec; MHz, 10 msec. **Auto Ranges (Gate Interval):** kHz, 10 sec; kHz, 1 sec; MHz, 100 msec; MHz, 10 msec (dependent on incoming signals). **Display Time:** 200 msec plus gate interval. **Fuse:** 125 volt, ¼ amp slow blow; 250 volt, ⅛ amp slow blow. **Power Required:** 105–130 V, 50/60 Hz, 20 watts max. (210–260 volt, 50/60 Hz by changing internal jumper wires). **Size:** 7¼″ w. x 10½″ d. x 2¾″ h. (less handle). Weight, 4¾ lbs. Rugged compact design and exceptional design make Model 1252 ideal for scientist, engineer, hobbyist, service technician or for field use. Carrying handle converts to tilt stand for convenience.

Weston No. 1252-0275039 Auto-Ranging Frequency Counter—List Price. **$295.00***

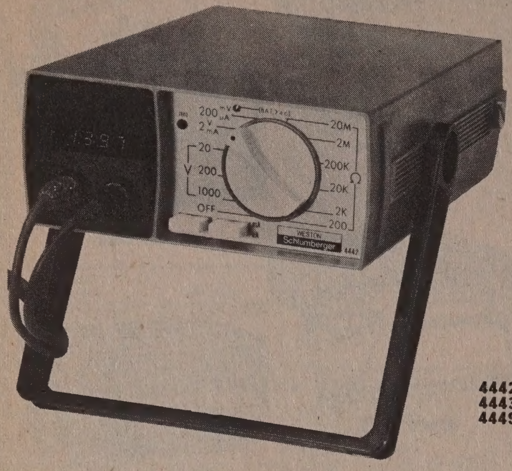
MODEL 1259 600 MHz SCALER

Model 1259 extends the useful range of any counter with more than 100 kHz capability. Includes hybrid circuit amplifier for good response and high sensitivity, 600 MHz decade counter and emitter coupled logic circuit. Built-in power supply with integrated circuit regulator for improved reliability. No sensitivity adjustment and pushbutton selected scales make Model 1259 extremely easy to use. **Input Frequency Range (Divided By 1):** Sine or square wave of 10 MHz to 100 MHz. **Input Frequency Range (Divided By 10):** Sine wave, 40 MHz to 600 MHz (typical 15 MHz to 600 MHz); square wave, 10 MHz to 600 MHz. **Input Frequency Range (Divided by 100):** Sine wave, 40 MHz to 600 MHz (typical 15 MHz to 600 MHz); square wave, 10 MHz to 600 MHz. **Input Amplitude:** 50 mV rms minimum; 2 volts rms maximum (to maintain 2:1 VSWR); protected to 5 volts rms. **Input Impedance:** 50 ohms with less than 2:1 VSWR from 10 MHz to 600 MHz and less than 2 volts rms input voltage, AC coupled. **Output Amplitude:** 1 volt peak-to-peak. **Output Impedance:** 50 ohms, AC coupled. **Power Required:** 120 volts, 50/60 Hz, 7 watts. May be changed to 240 volts with internal switch and change of fuse. **Size:** 6¾″ w. x 9¹⁄₁₆″ d. x 2¼″ h.

Weston No. 1259-0275043 600 MHz Prescaler—List. .**$455.00***

WESTON® DIGITAL TEST INSTRUMENTS

MODEL 4442 DIGITAL MULTIMETER



4442,
4443,
4449

1. Low cost, 3½ digit, solid state portable multimeter for lab or field use.
2. Up to 12 hours of continuous use on self contained batteries or 117 VAC operated.
3. LED readouts, dual slope high impedance, bi-polar A/D converter for excellent accuracy and long term stability.
4. Single MOS LSI plug-in chip for all logic circuitry.
5. Automatic blanking of unused digits, overload protection with spare fuses.
6. Overrange indicated by blinking "1" in "thousands" place with polarity and decimal on; balance of digits blanked out except LSD.

RANGES

DC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–1000 volts.
AC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–1000 volts.
DC Current: 0–1.99 μA; 0–1.999 mA.
AC Current: 0–199.9 μA; 0–1.999 mA.
Resistance: 0–199.9–1.999K–19.99K–199.9K–1.999M–19.99M ohms.
Conversion Rate: Approx. four per second.
Common Mode Rejection Ratio: 80 dB (approaches infinity on battery).
Normal Mode Rejection Ratio: 38 dB.
Temperature: 25° C ±3° C with guaranteed accuracy (operable from 0° to 50° C—derate accuracy).
Power Required: Four "C" size nickel cadmium cells (supplied); 115 VAC, 50–400 Hz.
Size: 5.45″ w. x 7″ d. x 2.25″ h. Weight, less than 2½ lbs.

Weston Model 4442 Digital Multimeter—Includes test probes and 117 VAC battery charger/AC converter. List Price . . . **$275.00***

Weston Model 4443 Digital Multimeter—Similar to Model 4442, but reads only DC current and voltage, and resistance. Ranges same as Model 4442. List Price **$250.00***

Weston Model 4449 Digital Multimeter—Same specifications as Model 4442, except AC line operated only. List Price. **$250.00***

MODEL 4440 PORTABLE DIGITAL MULTIMETER

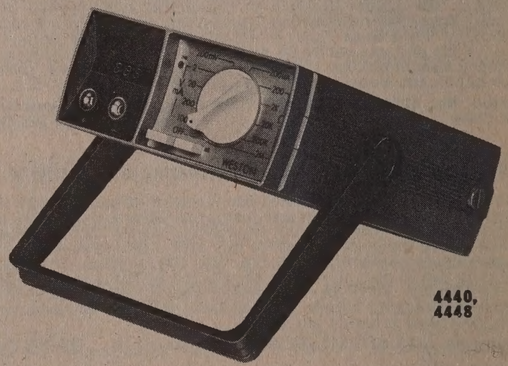
1. Lightweight, shock-proof, 3½ digit solid state multimeter for field use.
2. Single MOS LSI plug-in IC chip for all logic circuitry.
3. Overload protection by resistor diode network, fuses, or both.
4. Non-blinking LED readouts; automatic blanking of all unneeded digits except "1" in thousands place.
5. Dual-slope high-impedance bipolar A/D converter.

RANGES

DC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–999 volts.
AC Volts: 0–199.9 mV; 0–1.999–19.99–199.9–999 volts.
DC Current: 0–199.9 μA.
AC Current: 0–199.9 μA.
Resistance: 0–199.9–1.999K–19.99K–199.9K–1.999M ohms.
Display: 1999 non-blinking; 0.19″ character size.
Conversion Rate: Approx. 4 per second.
Common Mode Rejection: 80 dB.
Normal Mode Rejection: 35 dB.
Temperature: 15° C to 35° C (10° C to 50° C with derated accuracy).
Power Required: Rechargeable or standard "C" batteries or 115 VAC, 50–400 Hz.
Size: 5.45″ w. x 7.25″ d. x 2.25″ h. Weight, less than 2½ lbs.

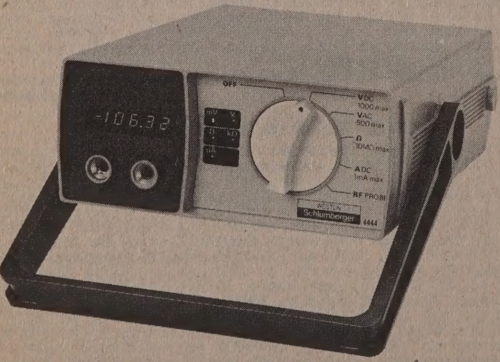
Weston Model 4440 Digital Multimeter—Comes with four Nicad "C" cells and battery charger. High impact molded plastic case. List Price. **$250.00***

Weston Model 4448 Digital Multimeter—Same specifications as Model 4440, except AC line operated only. List Price. **$220.00***



4440,
4448

MODEL 4444 AC/DC AUTO RANGING DIGITAL MULTIMETER



1. Designed for production testing and lab use.
2. Patented triple slope technique in A/D converter gives a digital dynamic range of six digit bits.
3. Specially designed integrated circuits MOS LSI which is an equivalent of 1500 transistor gates.
4. Bright and clear 4½ digit LED display.
5. Fully automatic decimal point, polarity and units presentation.
6. Overrange indicated by "1" in "ten thousands" position.
7. Fully floating input.

RANGES

AC Volts: 0–100 mV; 0–1–10–100–500 volts.
DC Volts: 0–100 mV; 0–1–10–100–1000 volts.
DC Current: 0–10–100 μA; 0–1 mA.
Two Terminal Resistance: 0–1K–10K–100K–1M–10M ohms.
Input Sensitivity: 0–1–10–100 nA for DC current; 0–10–100 μV, 0–1–10–100 mV for all others.
Common Mode Rejection: Greater than 120 dB at DC rejection; greater than 130 dB at 60 Hz rejection.
Normal Mode Rejection: Greater than 60 dB at 60 Hz.
Readings/Second: Greater than 3/sec on DC and ohms; greater than 2/sec on AC.
Temperature Range: Operating, 0° to +45° C; storage, −30° C to +70° C.
Power Required: 117/234 VAC (10%–15%), 50/60 Hz.
Size: 5.45″ w. x 7″ d. x 2.25″ h. Shipping Weight, less than 2½ lbs.

Weston Model 4444 Digital Multimeter—Lightweight carrying case available as optional. List Price. **$575.00***

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, —5%; 10-24, —15%; 25 UP, —25%

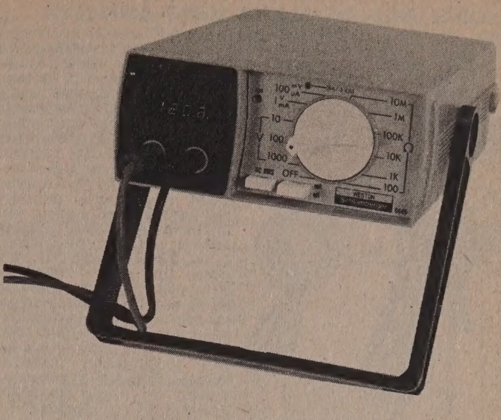
WESTON® DIGITAL TEST INSTRUMENTS

MODEL 4445 TRUE RMS DMM AC/DC MULTIMETER

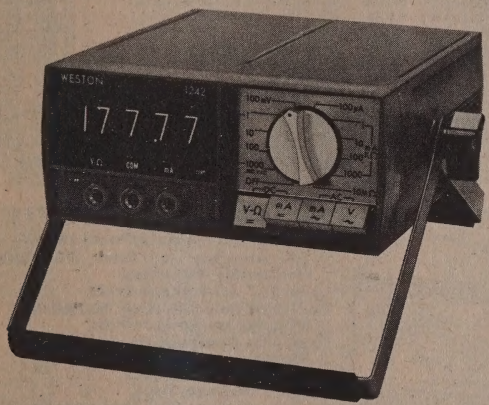
1. Handles odd wave shapes anywhere/anytime.
2. True RMS AC measurements.
3. Fully overload protected—fuse externally replaceable. Shockproofed.

RANGES

DC Volts: 0–100 mV; 0–1–10–100–1000 volts.
AC Volts: 0–100 mV; 0–1–10–100–1000 volts.
DC Current: 0–100 μA; 0–1 mA.
AC Current: 0–100 μA; 0–1 mA.
Ohms: 0–100–1K–10K–100K–1M–10M ohms.
Display: 1999, -1999 (non-blinking), 0.19″ character size; leading zero blanking—LSD never blanked; automatic polarity.
Conversion Rate: Approx. 4/sec.
Crest Factor (Peak/rms) Value: 4:1 at FS (except where limited by maximum input).
Overrange: 100% (reads 1999) except on 1000 volt range.
Common Mode Rejection Ratio: 80 dB (approaches infinity on battery).
Normal Mode Rejection Ratio: 38 dB.
Temperature: 25° C ±3° C with guaranteed accuracy (operable from 0° C to 50° C—derate accuracy).
Power Required: 4 "C" size nickel cadmium cells or 115 VAC, 50–400 Hz.
Size: 5.45″ w. x 7″ d. x 2.25″ h. Shipping Weight, less than 2½ lbs.
Weston Model 4445 Digital Multimeter—Comes with test probes and 117 VAC battery charger. Optional input shunts available. List Price.......................................**$450.00***



MODEL 1242 DIGITAL AC/DC MULTIMETER



1. Full 4½ digit bipolar digital multimeter features dual slope integration for excellent accuracy and long term stability.
2. Overload protection by resistor diode network, fuses, or both.
3. Carrying handle serves as an adjustable tilt stand.

RANGES

DC Volts: 0–0.1–1–10–100–1000 V with ±0.05% reading accuracy.
AC Volts: 0–100 mV; 0–1–10–100–500 volts with ±0.2% reading accuracy.
DC Current: 0–100 μA; 0–1–10–100 mA with ±0.15% reading accuracy.
AC Current: 0–100 μA; 0–1–10–100 mA with ±0.35% accuracy.
Resistance: 0–1000–10K–100K–1M–10M ohms.
Operating Temperature: 10° C to 40° C.
Overrange: 100% except 1000 VDC and 500 VAC ranges.
Common Mode Rejection: Greater than 80 dB at 60 Hz with 1000 Ω
Normal Mode Rejection: 40 dB at 60 Hz.
Readings: 10 per second (non-blinking display).
Humidity: 85% at 36° C.
Vibration: 5–10 Hz for 1 hr. at 0.4 G; 10–50 Hz for 11 msec at 2 G.
Shock: 50 G on three axes.
Power Required: 115 or 230 VAC, 50–400 Hz, 8.5 watts.
Size: 7″ w. x 7.9″ d. x 3″ h. Weight, 4½ lbs.
Weston Model 1242 Digital Multimeter—List Price.**$595.00***
Weston Model 1243 BCD Digital Multimeter—Has all the features of Model 1242, plus an isolated BCD output in parallel form, compatible with TTL logic at rear of the instrument. Input data, polarity, overrange and decimal point information, as well as functions and ranges set up the range switch, are made available as binary coded output. List Price................**$695.00***
Weston Model 9740-0269562 Leather Carrying Case—For Models 1242 and 1243. List Price.............................**$19.50***

MODEL 1240 DIGITAL AC/DC MULTIMETER

1. Compact multimeter with 26 ranges; single range selector and feather touch function switch.
2. Overload protection through a resistor diode network or fuses.
3. Out-of-range indication with flashing light and polarity indication.
4. High impact glass filled thermoplastic case for shock resistance.

RANGES

DC Volts: 0–0.2–2–20–200–1000 V with ±0.1% reading accuracy.
AC Volts: 0–200 mV; 0–2–20–200–500 volts with 0.5% reading accuracy.
DC Current: 0–200 μA; 0–2–20–200 mA; 0–2 amps.
AC Current: 0–200 μA; 0–2–20–200 mA; 0–2 amps.
Resistance: 0–200–2K–20K–200K–2M–20M ohms.
Temperature Range: 10° C to 40° C.
Common Mode Rejection: 80 dB at 60 Hz with 1000 Ω unbal..
Normal Mode Rejection: 35 dB at 60 Hz.
Readings: 5 per second (non-blinking display).
Humidity: 85% at 36° C.
Vibration: 5–10 Hz at 1 hour at 0.4 G; 10–50 Hz at 11 msec at 2 G.
Shock: 50 G on three axes.
Power Required: 115 or 230 VAC, 50–400 Hz, 6 watts.
Size: 7″ w. x 7.9″ d. x 3″ h.
Weston Model 1240 Digital Multimeter—List Price.**$394.50***
Weston Model 1241 Digital Multimeter—Similar to Model 1240. but reads only DC volts and resistance. List Price. .**$289.00***
Weston Model 9740-0269562 Leather Carrying Case—For Models 1240 and 1241. List Price...............................**$19.50***

WESTON
1240
+1990
V-Ω
COM
mA
OFF
DC
AC
200
2K
20K
200K
2M
20M
V-Ω
mA
mA
V

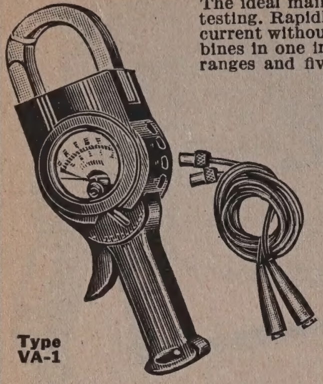
ACCESSORIES FOR SERIES 1240 AND 4440

Weston No.	Description	List*
9970-0271962	High voltage probe, less resistor	$19.00
9970-0272890	990 megohm resistor for 50 kV probe	4.75
9740-270520	Battery pack for 1240, 1241	99.60
9740-270145	Globe gel/cell for 1240, 1241	30.00
9970-0271961	RF probe 0–30 V, 50 MHz for 4440, 4442, 4443, 4445, 1240, 1241	19.50
9740-0273751	Input shunt 2 mA for 4440, 4442, 4443, 4445	16.00
9740-0273752	Input shunt 20 mAfor 4440, 4442, 4443, 4445	16.00
9740-0273753	Input shunt 200 mA for 4440, 4442, 4443, 4445	16.00
9740-0273754	Input shunt 2000 mA for 4440, 4442, 4443, 4445	16.00

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, —5%; 10-24, —15%; 25 UP, —25%

WESTON® PRECISION TEST INSTRUMENTS

MODEL 633 AC CLAMP VOLT-AMMETER



Type VA-1

The ideal maintenance tool for on-the-job testing. Rapidly measures AC voltage and current without breaking the circuit. Combines in one instrument three AC voltage ranges and five AC current ranges, completely covering voltages and current most frequently encountered. Dependable magnetic circuit; rugged Bakelite* case; non-shatterable glass; easily read double scale; pear-shaped pointer; adjustable pointer stop; six-position range and selector switch; safety-type trigger. 1000/250/100/25/10 amperes full scale; 700/350/175 volts full scale. Flexible leads supplied. Well damped movement. Complete instrument insulated for 750-volt use. For conductors up to 2″ in diameter.

Weston Model 633—Type VA-1. List Price.... $184⁵⁰*

Clamp Ammeter Type A—Similar to above except not provided with voltage features or regularly equipped with adjustable pointer stop.

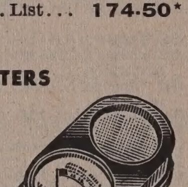
Type A-1—500/250/100/50/25/10 amps. List Price.. $174⁵⁰*

Type A-2—1000/500/250/100/25/10 amps. List Price $174.50*

Type A-3—2000/1000/500/250/100/50 amps. List... 174.50*

*Registered Bakelite Corp. trademark.

MODEL 703 SIGHTMETERS



A light measuring instrument for checking lighting in offices, etc. Indicate instantly the true foot-candle rating of lighting when equipped with Viscor® color filters since they have the same color-response as the human eye. These units are pocket-size and anyone may use them. Place them on a table, desk, chair, etc., or hold them in your hand in whatever position desired. Indicates instantly whether or not the light is adequate for a particular seeing task. They are invaluable aids for the promotion of better sight through the use of better light. Ideal tools in the sale of home lighting equipment and fixtures such as lamps and reflectors. Range may be extended by a factor of 10 through the use of the special multiplier disc over the sensitive cell. Scale length, 1.43″. **Size:** 4⅝″ x 2⅝″ x 1⁵⁄₁₆″. Weight, 10 oz.

Weston Model 703 Type 3A Sightmeter—Measures 0–75 foot-candles. Less filters. List Price.......................$90.50*

Weston Model 703 Type 7 Sightmeter—Sightmeter described, with a range of 0–100 foot-candles, including the Viscor and cosine correction filters for accurate readings. List Price....$120.00*

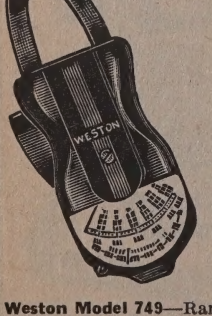
Weston Model 703 Type 8 Sightmeter—Measures 0–30 foot-candles and comes with Viscor filter. List Price.....$116.50*

Weston Model 703 Type 51 Sightmeter—Measures 0–150 foot-candles. With ultraviolet-transparent quartz filter, black background scale with fluorescent characters and pointer. List Price....................................$166.00*

Weston Model 9924 Multiplier Disc—For use with Type 3A and Type 6A Sightmeters. Merely snaps in place and reduces light reaching cell to 1/10. List Price.........................$6.00

Weston Model 9959 (No. 74472) Carrying Case—Carrying case of fine leather for use with above meters. List Price........$6.00

MODEL 749 AC POCKET CLAMP VOLT-AMMETER

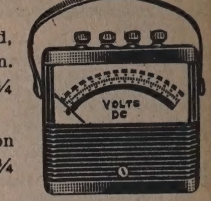


Designed particularly for the electrician, serviceman, engineer and motor repair shop. Contains six current ranges and three voltage ranges quickly readable from any angle on one, large-size scale. Supplied complete with carrying case, voltage test leads with insulated battery clips and three accessory probes. Accurate within ±3%. **Size:** 7½″ x 3″ x 1¼″. Approx. Wt., 14 oz. Accommodates conductors up to 1″ round or 1¾″ x ⅜″ rectangular. Large, smooth-action trigger; positive action range selector switch; shatterproof wrap-around plastic window; only one scale for all ranges; bright red pointer for easy reading (scale length, 2.36″). Uses new shock-mounted core magnet mechanism. Fully insulated for 750-volt service. Sturdy carrying case with convenient lead compartment. Precision-ground face provides positive jaw contact. Lightweight, compact, handfitting design, easily slipped into pocket. Satin-finish black Bakelite* case.

Weston Model 749—Ranges 300/150/60/30/15/6 amps AC; 600/300/150 VAC. Complete with carrying case, leads, and three accessory probes. List Price $60⁷⁵*

Weston Model 9886 Plug-In Adapter—Provides a single or 10-loop conductor for current measurements. Rated 250 volts AC, measures current to 25 amperes on "Direct Reading"; up to 10 amperes for "Amperes Divided by 10" connection. List..$7.50*

MODELS 901 AND 904 INSTRUMENTS



Scale, 5½″. Size, 7½″ x 7¼″ x 3⅝″.

Model 901 DC Instruments: Self-shielded, permanent magnet, moving coil operation. Rated accuracy, 0.25% F.S. Weight, 3¾ lbs. approx.

Model 904 AC Instruments: Movable iron type. Accuracy, 0.5% F.S. Weight, 4¾ lbs. approx.

MODEL 901 DC INSTRUMENTS

Weston No. 901-	Meter	Range	*	List Price*
2904001	DC Amps	50 mV/20/5/2 amps	100	$268.00
1905001	DC Volts†	750/300/150/75/30/15/3	150	295.00
4905001	DC Milliam.	1K/500/200/100/50/20/10	100	278.00
4905002	DC Milliam.	100/50/20/10/5/2/1	100	278.00

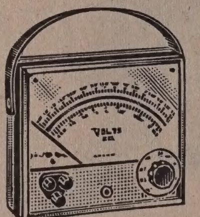
*Scale division. †5000 ohms/volt.

MODEL 904 AC INSTRUMENTS

Weston No. 904-	Meter	Range	‡	List Price*
2905001	AC Amps	200/100/50/20/10/5/2	100	$359.00
2905002	AC Amps	50/20/10/5/2/1	100	348.50
2901001	AC Amps	5 amps	100	253.00
1904005	AC Volts	750/300/150*	150	260.00
1906001	AC Volts	750/300/150/75/30/15/7.5/3	150	400.00
1903001	AC Volts	300/150	150	241.50
1904003	AC Volts	600/300/150*	150	260.50
1904005	AC Volts	750/300/150*	150	260.50
4902001	AC Milliam.	150/75	150	286.50
4902003	AC Milliam.	300/150	150	286.50

*Non-locking key on high range, which is for intermittent duty only. ‡Scale division.

MODELS 911-912 PORTABLE MULTI-RANGE TESTER



- **Combination Portable/Panel Instrument, ±1% Accuracy on Most DC Ranges, Horizontal Mounting.**
- **Large 7.2″ Mirrorback Scale.**
- **Cormag® Self-Shielding Mechanism, with Spring-Back Jewels.**
- **Long-Life Components, Including Weston Vamistor® Precision Metal-Film Resistors.**
- **Rugged Compact Case.**
- **No Special Adapters Necessary for Panel Mounting.**
- **Large, Sure-Grip Knob on Range Switch.**

Moderately-priced, multi-range instrument designed as a portable unit which is easily converted to a panel or switchboard mounting assembly. All that need be done for panel mounting is to unscrew the rubber feet, remove the steel case, and mount. Clear, plastic front permits natural illumination to blanket the scale. Marking graduations are clearly definable; the knife-edge pointer and mirror scale, along with a mechanism accurate to 1% of full scale, provides fast, easy, and accurate readings. Unit is self-shielded with Cormag mechanism. **Accuracy:** ±1% of full scale on DC voltmeters and milliammeters (±2% of full scale on 300 and 1000 VDC); ±2% full scale on rectifier type AC voltmeters 10–300 volts; ±3% of full scale on rectifier type AC voltmeters for 1000 V range and the 3 V range above mid-scale. **Case Design:** Clear plastic front; heavy-duty, gray-finished steel case. Handle may be swung under instrument so that it may be tilted for easy reading. **Binding Post:** Screw type with captive heads for use with all types of leads. Triangular base allows greater torque when attaching leads. Spaced, ¾″ for plug-type leads. Cross hole is located so that fine wire will not be cut. **Size:** 7½″ x 6½″ x 2⅜″.

Weston Model 911 DC Voltmeter—Ranges, 1000/300/100/30/10/3/1 VDC. 20,000 ohms/volt. List... $103⁰⁰*

Weston Model 911 DC Ammeter—Ranges, 10/3/1 amps; 300/100/30/10 milliamps. 10 amp range has 100 mV drop; 10 mA range 50 mV drop. These are suggested ranges for use with external shunts. List Price............... $103⁰⁰*

Weston Model 911 DC Milliammeter—Ranges, 100/30/10/3/1/.3/.1 milliamps. 100 mA range 500 mV drop; 0.1 mA range 250 mV drop. List Price................... $103⁰⁰*

Weston Model 912 AC Voltmeter—Ranges, 1000/300/100/30/10/3 VAC. 5,000 ohms/volt. List Price.. $117⁵⁰*

Weston Model 912 AC Ammeter—Ranges, 5/2/1 amps; 500/200/100/50 mA. Accuracy: 2% FS. 60–400 Hz, sine. List..$117.50*

MODEL 614 FOOT-CANDLE METERS

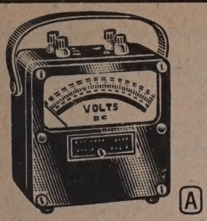
Ideal for general commercial lighting surveys where wide ranges of light values exist. Fully self-contained, no outside power o batteries required. **Scale Length:** 2.37″. **Size:** 7⅝″ x 3⅜″ x 2¼″. Weight, 1 lb., 13 oz.

Weston No. 614-9960001—Viscor filtered 0–60/120/600 foot-candles; for visual correction for color. List Price....$291.50

Weston No. 614-9960002—Viscor and cosine correction filtered 0–100/250/500 foot-candles; for visual correction for color and direction. List Price.............................$299.50

★QUANTITY DISCOUNTS: LOTS OF 1-5, LIST; 6-14, —5%; 15-24, —10%; 25 UP, —15%

WESTON® PRECISION TEST INSTRUMENTS



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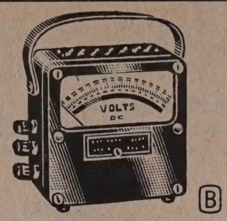


B

MODEL 931 DC INSTRUMENTS (FIG. A)

Compact, light weight and accurate within ½ of 1%. Hand calibrated mirror scales and knife-edge pointers eliminate parallax errors. Scale length 4.04″. Self-shielded permanent magnet moving coil. Size, 5¼″ x 5″ x 3¼″. Approx. Weight, 2 lbs.

DC VOLTMETERS

1000 OHMS/VOLT

Weston No. 931-	Range	Scale Division	List Price*
1901003	50	100	$140.50
1901002	150	150	140.50
1905003	30/7.5/3	150	164.00
1905002	75/30/7.5	150	164.00
1905001	150/15/3	150	164.00
1905005	300/150/3	150	164.00
1905006	750/300/150	150	164.00

5000 OHMS/VOLT

Weston No. 931-	Range	Scale Division	List Price*
1906002	75/30/7.5	150	$182.50
1906004	150/15/3	150	182.50
1906006	300/150/3	150	182.50
1906005	500/100/10	100	182.50
1906001	750/300/150	150	182.50

DC MILLIAMMETERS

Weston No. 931-	Range	Scale Division	List Price*
4904005	3/0.3/0.03	150	$179.50
4904004	15/1.5/0.15	150	179.50
4904003	150/15/1.5	150	160.50
4904002	1500/150/15	150	160.50
4904001	3000/300/30	150	160.50

DC MICROAMMETERS

Weston No. 931-	Range	Scale Division	List Price*
5901003	100	100	$160.50
5902002	30	150	182.50
5902003	100	100	182.50
5902001	200	100	160.50

DC AMMETERS (SELF-CONTAINED TO 50 AMPS)

Scale Division: 100 (150 for ranges of 1.5, 3 A and their multiples).

Weston No. 931-	Range, Amps	List Price*	Weston No. 931-	Range, Amps	List Price*
2902007	5/0.5/0.05	$165.00	2902013	50/5/0.5	$165.00
2902008	5/2.5/0.5	165.00	2902002	50/10/2	165.00
2902006	10/1/0.1	165.00	2902001	50/20/5	165.00
2902009	10/5/1	165.00	2902004	50/25/10	165.00
2902003	15/3/1.5	165.00			

MODEL 432 DC AND SINGLE-PHASE AC WATTMETERS (FIG. A)

Electrodynamometer accurate within ½ of 1%. Power consumption: Potential circuit at 115 volts, 60 Hz, 1.2 watts, 1.2 volt-amperes; current circuit at 5 amperes, 60 Hz, 0.65 watt, 0.68 volt-ampere. Scale 4.04″ l. Scale Division: 75, unless otherwise noted. Size, 5¼″ x 5″ x 3¼″. Weight, 3¼ lbs., approx.

DC AND SINGLE PHASE 25-125 Hz

Weston No. 432-	Volts		Amps		Watts		List Price*
	Nor.	Max.	Nor.	Max.	High	Low	
9901001	150/75	200/100	1	1.5	150	75	$311.00
9901005	150/75	200/100	5	7.5	750	375	311.00
9901002	300/150	400/200	1	1.5	300	150	311.00
9901006	300/150	400/200	5	7.5	1.5 kw	.75 kw	311.00
9901008	300/150	400/200	10	15	3 kw	1.5 kw	311.00
9901010†	300/150	400/200	20	30	6 kw	3 kw	311.00
9901011	300/150	400/200	50	75	15 kw	7.5 kw	311.00
9902005	150/75	200/100	10/5	15/7.5	1500/ 750	750/ 375	311.00
9902003*	200/100	260/130	5/2.5	7.5/3.75	1000/ 500	500/ 250	311.00
9902004	300/150	400/200	5/2.5	7.5/3.75	1500/ 750	750/ 375	311.00
9902007	300/150	400/200	10/5	15/7.5	3/ 1.5 kw	1.5/ .75 kw	311.00

DC AND SINGLE PHASE 25-1000 Hz

Weston No. 432-	Volts Nor.	Volts Max.	Amps Nor.	Amps Max.	Watts High	Watts Low	List Price*
9902013	300/150	400/200	5/2.5	7.5/3.75	1500/ 750	750/ 375	$337.00
9901015	300/150	400/200	5	7.5	1.5 kw	.75 kw	337.00

Scale Div.: *100; †60.

MODEL 433 AC INSTRUMENTS (FIG. B)

Movable iron type, horizontal operation, shielded from external magnetic fields. Well compensated for temperature changes. **Power Consumption:** 150 V range at 115 volts, 60 Hz, 2.5 watts, 2.5 VA. **Rated Accuracy:** .75%. **Frequency Coverage:** Alternating current at frequencies from 25 to 1000 Hz available. **Self-Contained Ranges:** Single, double and triple up to 750 volts. **Range Extension:** Higher ranges obtained with multipliers or by using Model 311 Potential Transformer in connection with a 150 volt range. **Size:** 3¼″ x 5″ x 5¼″. Weight, 2½ lbs., approx.

AC VOLTMETERS

25-125 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
1901005	150	5300	150	$152.00
1901008	250	18,200	125	152.00
1902011	10/5	24/12	100	154.50
1903001	20/10	116/58	100	154.50
1903002	30/15	336/168	150	154.50
1903004	60/30	850/425	150	154.50
1903007	150/75	5300/2680	150	154.50
1903009	300/150	22,000/11,000	150	154.50
1905001	450/300/150	33,000/22,000/11,000	150	182.00
1906002†	600/300/150	44,000/22,000/11,000	150	182.00
1906003†	750/300/150	55,000/22,000/11,000	150	182.00

†Has extension on case for additional resistance.

25-1000 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
1901007	150	....	150	$173.00
1903008	150/75	....	150	176.50
1903010	300/150	....	150	176.50
1906001	600/300/150	....	150	202.50
1907001‡	750/300/150	....	150	249.00

‡Includes necessary external Model 9990, Type 52 resistance box.

AC AMMETERS

Similar to Fig. A in appearance. **Power Consumption:** 5 amps range at 5 amps, 60 Hz, 0.50 watt 0.52 VA. Single, double and triple ranges cover frequencies 25–500 Hz. Higher frequency coverage available. Triple range instruments have internal current transformer. All have two binding posts, double and triple range instruments have range selector switch. For ranges above 50 amps, Model 461 Current Transformer, Type 1 with 5 amps instrument is recommended.

25-500 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
2901001	1	0.48	100	$143.00
2901002	5	0.020	100	143.00
2901005	15	0.0038	150	143.00
2903004	2/1	0.12/0.48	100	165.00
2903001	5/2.5	0.02/0.08	100	165.00
2903005	10/5	0.0083/0.028	100	165.00
2903006	20/10	0.004/0.0108	100	165.00
2906002	3/1.5/0.75	0.18/0.43/0.59	150	227.00
2906001	5/2.5/1	0.13/0.26/0.37	100	227.00
2906005	10/5/1	0.030/0.070/0.37	100	227.00
2906006	10/5/2.5	0.030/0.060/0.075	100	227.00
2906007	15/7.5/1.5	0.023/0.044/0.19	150	227.00
2907001	20/5/2	0.040/0.19/0.30	100	227.00
2908001	30/7.5/3	0.0090/0.036/0.040	150	227.00
2909001	50/20/5	0.0084/0.0011/0.020	100	227.00
2909002	50/20/10	0.0073/0.0080/0.010	100	227.00

AC MILLIAMMETERS

Double ranges cover 25–1000 Hz. Double range instruments have range selector switch. Frequency span to 2500 Hz within ¾% accuracy possible.

25-500 Hz

Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
4903005	150/75	30/120	150	$163.00
4903002	300/150	6.4/26	150	163.00
4903006	500/250	1.6/6.6	100	163.00

25-1000 Hz

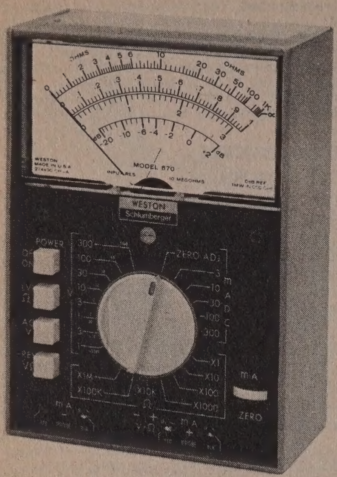
Weston No. 433-	Range	Approximate Resistance, Ohms	Scale Div.	List Price*
4903001	100/50	....	100	$171.00
4903003	500/250	....	100	171.00

★QUANTITY DISCOUNTS

1-5	6-14	15-24	25 Up
List	List −5%	List −10%	List −15%

NOTE: ONLY THE MOST COMMON RANGES ARE LISTED. OTHER RANGES AND MODELS ON REQUEST.

WESTON® PRECISION TEST INSTRUMENTS



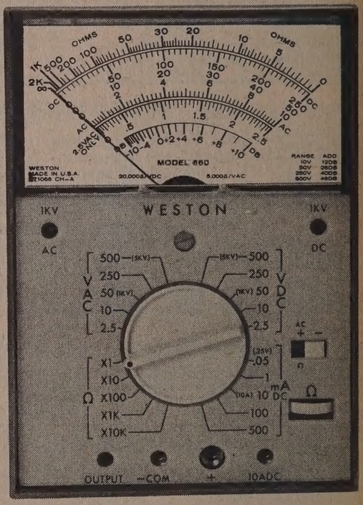
MODEL 670 "IN-CIRCUIT" TESTER

1. FET VOM offers "In-Circuit" DC current measurements on printed circuit boards without breaking connections.
2. Also measures AC/DC volts, conventional "series" DC current, normal power and low power ohms.
3. Automatic polarity and LED annunciators.
4. Overload protection with external fuse replacement.
5. Self storing handle and a special ruggedized taut-band mechanism.

RANGES

DC Millivolt: 0–100–300 mV.
DC Volts: 0–1–3–10–30–100–300 volts.
AC Millivolts: 0–100–300 mV.
AC Volts: 0–1–3–10–30–100–300 volts.
DC Milliamps: 0–3–10–30–100–300 milliamps.
Ohms: RX1 (10 ohms center scale)/RX10/RX100/RX1K/RX10K/RX100K/RX1 megohms; 7 normal and 7 low power ranges.
dB Scales: −40 to −18/−30 to −8/−20 to +2/−10 to +12/0 to +22/+10 to +32/+20 to +42/+30 to +52.
Accuracy: 2% DC volts; 3% AC volts; 5% DC current; 3% (of arc) ohms.
Sensitivity: 11.1 megohms DC, 10 megohms (100 pF) AC.
Power Required: 115 VAC, 60 Hz.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs.
Weston Model 670-2745080 "In-Circuit" Tester—Comes with line cord, standard probes and the special "In-Circuit" current probes. List Price.................. **$249.50***

MODEL 660 VOM

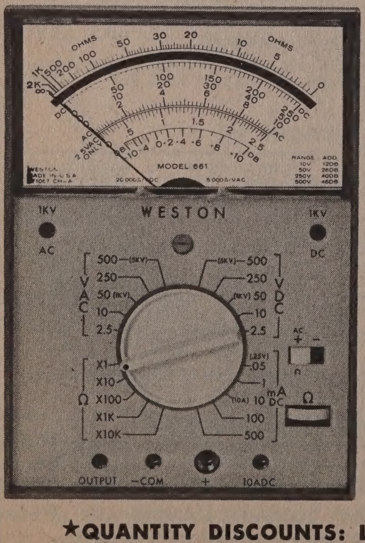


1. Completely drop-proofed; custom ruggedized self-shielded taut-band mechanism.
2. Diode protected meter movement; special calibrated scales for dB measurements.
3. 1% precision resistors used in all critical circuits.
4. Temperature compensated; polarity reversal switch.
5. Single range switch—full range coverage.
6. Externally replaceable fuse.

RANGES

DC Millivolts: 0–250 mV.
DC Volts: 0–2.5–10–50–250–500–1000 volts.
AC Volts: 0–2.5–10–50–250–500–1000 volts.
VAC Output: 0–2.5–10–50–250 volts.
DC Microamps: 0–50 μA.
DC Milliamps: 0–1–10–100–500 mA.
DC Amps: 0–10 amps.
Ohms: RX1 (0–2K) 20 ohms center/RX10 (0–20K) 200 ohms center/RX100 (0–200K) 2000 ohms center/RX1000 (0–2 megs) 20K ohms center/RX10K (0–20 megs) 200K ohms center.
dB Scales: −10 to +10/+2 to +22/+16 to +36/+30 to +50/+36 to +56. Measured with 1 mW on 600 ohm line.
Accuracy: 2% DC (1.5% on 50 μA range); 3% AC.
Sensitivity: 20,000 ohms/VDC; 5000 ohms/VAC.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 660-2714010 VOM—List Price.......................... **$68.00***

MODEL 661 HIGH ACCURACY VOM



1. Completely drop-proofed; custom ruggedized self-shielded taut-band mechanism.
2. Mirror scale for greater accuracy.
3. ½% precision resistors used in all critical circuits.
4. Diode protected meter movement; special calibrated scales for dB measurements.
5. Temperature compensated; polarity reversal switch.
6. Externally replaceable fuse—full range coverage.

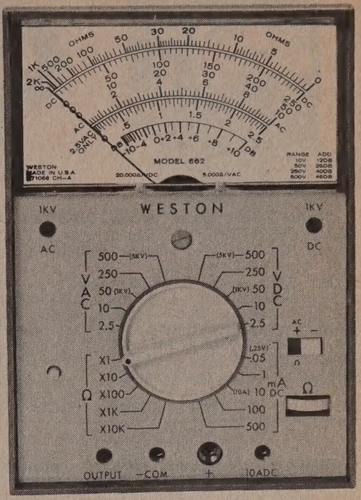
RANGES

DC Millivolts: 0–250 mV.
DC Volts: 0–2.5–10–50–250–500–1000 volts.
AC Volts: 0–2.5–10–50–250–500–1000 volts.
VAC Output: 0–2.5–10–50–250 volts.
DC Microamps: 0–50 μA.
DC Milliamps: 0–1–10–100–500 mA.
DC Amps: 0–10 amps.
Ohms: RX1 (0–2K) 20 ohms center/RX10 (0–20K) 200 ohms center/RX100 (0–200K) 2000 ohms center/RX1000 (0–2 megs) 20K ohms center/RX10K (0–20 megs) 200K ohms center.
dB Scales: −10 to +10/+2 to +22/+16 to +36/+30 to +50/+36 to +56. Measured with 1 mW on 600 ohm line.
Accuracy: 1% DC; 2% AC.
Sensitivity: 20,000 ohms/VDC; 5000 ohms/VAC.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 661-2714020 High Accuracy VOM—List Price............... **$76.50***

★QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, −5%; 10-24, −15%; 25 UP, −20%.

WESTON® PRECISION TEST INSTRUMENTS

MODEL 662 OVERLOAD-PROTECTED VOM

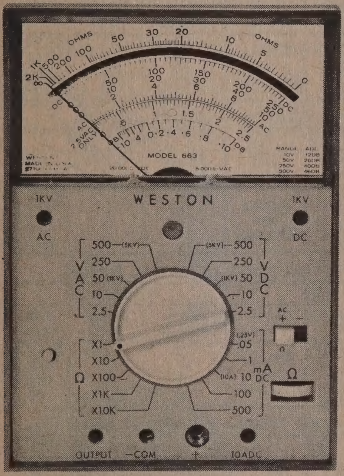


1. Completely drop-proofed; custom ruggedized self-shielded taut-band mechanism.
2. Resettable overload relay circuit—externally replaceable fuse.
3. 1% precision resistors used in all critical circuits.
4. Diode protected meter movement; special calibrated scales for dB measurements.
5. Temperature compensated; polarity reversal switch.
6. Full range coverage.

RANGES

DC Millivolts: 0–250 mV.
DC Volts: 0–2.5–10–50–250–500–1000 volts.
AC Volts: 0–2.5–10–50–250–500–1000 volts.
VAC Output: 0–2.5–10–50–250 volts.
DC Microamps: 0–50 μA.
DC Milliamps: 0–1–10–100–500 mA.
DC Amps: 0–10 amps.
Ohms: RX1 (0–2K) 20 ohms center/RX10 (0–20K) 200 ohms center/RX100 (0–200K) 2K ohms center/RX1000 (0–2 megs) 20K ohms center/RX10K (0–20 megs) 200K ohms center.
dB Scales: −10 to +10/+2 to +22/+16 to +36/+30 to +50/+36 to +56. Measured with 1 mW on 600 ohm line.
Accuracy: 2% DC (1.5% on 50 μA range); 3% AC.
Sensitivity: 20,000 ohms/VDC; 5000 ohms/VAC.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 662-2714030 Overload-Protected VOM—List Price* **$101.50***

MODEL 663 HIGH ACCURACY OVERLOAD-PROTECTED VOM



1. Completely drop-proofed; custom ruggedized self-shielded taut-band mechanism.
2. Resettable overload relay circuit—externally replaceable fuse.
3. Mirror scale for greater accuracy.
4. ½% precision resistors used in all critical circuits.
5. Diode protected meter movement—special calibrated scales for dB measurements.
6. Temperature compensated; polarity reversal switch.

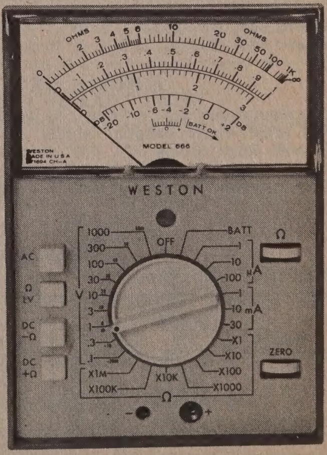
RANGES

DC Millivolts: 0–250 mV.
DC Volts: 0–2.5–10–50–250–500–1000 volts.
AC Volts: 0–2.5–10–50–250–500–1000 volts.
VAC Output: 0–2.5–10–50–250 volts.
DC Microamps: 0–50 μA.
DC Milliamps: 0–1–10–100–500 mA.
DC Amps: 0–10 amps.
Ohms: RX1 (0–2K) 20 ohms center/RX10 (0–20K) 200 ohms center/RX100 (0–200K) 2000 ohms center/RX1000 (0–2 megs) 20K ohms center/RX10K (0–20 megs) 200K ohms center.
dB Scales: −10 to +10/+2 to +22/+16 to +36/+30 to +50/+36 to +56; measured with 1 mW on 600 ohm line.
Accuracy: 1% DC; 2% AC.
Sensitivity: 20,000 ohms/VDC; 5000 ohms/VAC.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 663-2714040 High Accuracy Overload-Protected VOM—List . **$110.00***

MODEL 666 SOLID STATE CIRCUIT TESTER VOM

1. Designed for semiconductor circuit troubleshooting.
2. Ten megohms input impedance.
3. Completely drop-proofed custom ruggedized self-shielded taut-band mechanism.
4. Differential pair FET input to high gain IC operational amplifier.
5. Input reversal switch.
6. Frequency and temperature compensated.

RANGES



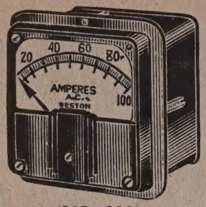
DC Millivolts: 0–100–300 mV.
DC Volts: 0–1–3–10–30–100–300–1000 volts.
AC Millivolts: 0–100–300 mV.
AC Volts: 0–1–3–10–30–100–300–1000 volts.
DC Microamps: 0–1–10–100 μA.
DC Milliamps: 0–1–10–30 mA.
AC Microamps: 0–1–10–100 μA.
AC Milliamps: 0–1–10–30 mA.
Ohms: RXL/RX10/RX100/RX1K/RX10K/RX100K/RX1 megohms; 7 normal and 7 low power ranges.
dB Scales: −40 to −18/−30 to −8/−20 to +2/−10 to +12/0 to +22/+10 to +32/+20 to +42/+30 to +52/+40 to +62.
Accuracy: 2% DC volts; 3% AC volts; 3% DC current; 4% AC current.
Sensitivity: 10 megohms DC; 10 megohms (100 pF) AC; current circuit 100 mV drop.
Size: 5″ w. x 2¼″ d. x 7″ h. Weight, less than 2 lbs. (batteries included).
Weston Model 666-2714060 Solid State Circuit Tester VOM—List Price.... **$139.00***

SERIES 660 ACCESSORIES

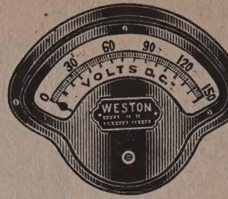
Weston No.	Description	List Price*
9970-0271958	Standard leather carrying case	$16.00
9970-0272160	Super leather case; velvetine lining	19.50
9970-0272028	Protective cover flap (not for 666)	4.50
9970-0271961	RF probe 0–30 V; 50 MHz	19.50
9970-0271962	High voltage probe (less resistor)	19.00
9970-0271959	900-meg resistor for probe (50 kV)	4.75
9970-0271960	495-meg resistor for probe (25 kV)	4.75
9970-0272890	990-meg resistor for 50 kV probe (for 666 only)	4.75
9970-0271961	RF probe, 10 kHz to 50 MHz (for Model 666 only)	19.50

★**QUANTITY DISCOUNTS: LOTS OF 1-4, LIST; 5-9, −5%; 10–24, −15%; 25 UP, −20%**

WESTON® SWITCHBOARD INSTRUMENTS



610, 921



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MODEL 610 AND MODEL 921 GROUPS

Model 610: ±1% full scale accuracy. Flush type, black Bakelite* fronts, flat dials and without internal illumination. Scale Length: 3.5″. Size: 4″ x 4½″.

Model 921: ±1%, full scale accuracy. Flush type, all-steel cases with embossed fronts, flat dials, glass windows and without internal illumination. Scale Length: 5.12″. Size: 6.63″ x 6.88″.

Both 610 and 921 models can be supplied with clear plastic fronts and "in-line" pointer and dial at no extra charge. Internal illumination feature also available; write for information.

*Bakelite Corp. trademark.

DC VOLTMETERS—1000 OHMS/VOLT

	List Price*			List Price*	
Range	**Model 610**	**Model 921**	**Range**	**Model 610**	**Model 921**
6 V	Prices on Request	$135.00	150 V	Prices on Request	$135.00
10 V		135.00	200 V		135.00
15 V		135.00	300 V		135.00
25 V		135.00	500 V		150.00
50 V		135.00	600 V		155.00
75 V		135.00	750 V		170.00
120 V		135.00			

DC AMMETERS—SELF-CONTAINED

Model 921—Ranges: 10 A, 15 A, 25 A, or 50 A.
List Price, Any Range.......................... **$135.00***

DC AMMETERS—EXTERNAL SHUNT TYPE

50 mv DC ammeters designed for use with external 50 mv switchboard shunt to obtain the scale reading listed. Prices include one pair of Model 9958, 5′ shunt leads, 0.065 ohm. External shunt not supplied. Can also be supplied for use with leads of higher resistance, up to 1.5 ohms at extra cost.

Model 610—Range In Amps: 1, 5, 10, 15, 20, 25, 50, 75, 100, 150, 200, 300, 500, 600, 750, 1000, 2000 or 3000. **Prices on Request**

Model 921—Range In Amps: 75, 100, 150, 200, 300, 400, 500, 600, 750, 1000 or 2000. List Price, Any Range.......... **$135.00***

AC VOLTMETERS

Frequencies: 25–125 Hz. Where potential transformers are used, the instrument will be scaled in terms of transformer primary (specify).

	List Price*			List Price*	
Range	**Model 610**	**Model 924**	**Range**	**Model 610**	**Model 924**
150 V*	Prices on Request	$130.00	500 V	Prices on Request	$170.00
250 V*		130.00	600 V		170.00
300 V*		130.00	750 V		170.00

*Self-contained; all others external resistor box type.

AC AMMETERS

Frequencies: 25–500 Hz. Maximum self-contained range 50 amps. For higher ranges use 5-amp instrument with Weston Current Transformer.

Model 610—Range: 1, 2, 5, or 10 A. **Prices on Request**

Model 924—Range: 1, 2, 5, or 10 A. List Price...... **$130.00***

SINGLE ELEMENT WATTMETERS AND VARMETERS

For use on direct and alternating current from 25 to 125 Hz (Model 925 to 500 Hz).

FOR DC AND SINGLE PHASE AC WATTS

	Model 610			Model 925		
Volts	**Max. Amps**	**Scale Watts**	**List Price**	**Max. Amps**	**Scale Watts**	**List Price***
100–150	1.5	100	Prices on Re-quest	2	150	$260.00
100–150	3	200		4	300	260.00
100–150	7.5	500		10	500	260.00
100–150	15	1 kW		20	1 kW	260.00
200–300	1.5	200		2	300	260.00
200–300	3	500		4	600	260.00
200–300	7.5	1 kW		10	1 kW	260.00
200–300	15	2 kW		20	2 kW	260.00
400–600*	7.5	2 kW		10	2 kW	305.00
600–750*	7.5	3 kW		10	3 kW	305.00

FOR SINGLE PHASE VARS (610 AND 925)

Any of the single phase wattmeters listed above can be supplied to indicate vars on single phase 100–125 and 200–250 V circuits.
110-125 or 200-250 V Reactor Box Only—List Price. . **$175.00***

FOR THREE-PHASE, THREE-WIRE WATTS

A single phase AC wattmeter can be used to measure the power in a balanced three-phase, 3-wire system by means of an external Y-Box. Write for complete information.

POLYPHASE WATTMETERS AND VARMETERS

Frequencies: 25–125 Hz (Model 926 to 500 Hz). Can be scaled for use with transformers or supplied with zero center, or with zero mark at any other location on the scale.

TWO-ELEMENT WATTMETERS—5 AMPS, NORM.

	Model 610			Model 926		
Volts	**Max. Amps**	**Scale kW**	**List Price**	**Max. Amps**	**Scale kW**	**List Price***
100–150	7.5	1	Prices on Request	10	1	$350.00
200–300	7.5	2		10	2	350.00
400–600*	7.5	4		10	4	390.00
600–750*	7.5	6		10	6	390.00

2-ELEMENT VARMETERS—5 AMPS, NORM.

	Model 610			Model 926		
Volts	**Max. Amps**	**Scale Kvars**	**List Price**	**Max. Amps**	**Scale Kvars**	**List Price***
100–150	7.5	1	Prices on Request	10	1	$360.00
200–300	7.5	2		10	2	360.00
400–600*	7.5	4		10	4	400.00
600–750*	7.5	6		10	6	400.00

2½-ELEMENT WATTMETERS—5 AMPS, NORM.

	Model 610			Model 926		
Volts	**Max. Amps**	**Scale kW**	**List Price**	**Max. Amps**	**Scale kW**	**List Price***
100–150	7.5	1.5	Prices on Request	10	1.5	$360.00
200–300	7.5	3		10	3	360.00
400–600*	7.5	6		10	6	400.00
600–750*	7.5	10		10	10	400.00

2½-ELEMENT VARMETERS—5 AMPS, NORM.

	Model 610			Model 926		
Volts	**Max. Amps**	**Scale Kvars**	**List Price**	**Max. Amps**	**Scale Kvars**	**List Price***
100–150	7.5	1	Prices on Request	10	1	$360.00
200–300	7.5	2		10	2	360.00
400–600*	7.5	4		10	4	400.00
600–750*	7.5	6		10	6	400.00

*Self-contained; all others external resistor box type.

Models 610 and 921 Group **Frequency Meters** and **Power Factor Meters** are also available. Call for information.

MODELS 271 AND 273 FAN-SHAPED DC SWITCHBOARD INSTRUMENTS

Permanent magnet, moving coil type. **Rated Accuracy:** ±1%, full scale. **Scale Length:** Model 271, 5.8″; Model 273, 7.32″. **Overall Size:** Model 271, 7⅞″ w. x 6¼″ h. x 1¾″ above, 1½″ behind panel; Model 273, 9⁵⁄₁₆″ w. x 7¹³⁄₃₂″ h. x 2¹⁄₁₆″ above, 1½″ behind panel. **Weight:** Model 271, 4 lbs.; Model 273, 5 lbs.

DC VOLTMETERS

Resistance: 1,000 ohms/volt.

	List Price*			List Price*	
Range	**Model 271**	**Model 273**	**Range**	**Model 271**	**Model 273**
10 V	$110.00	$125.00	75 V	$110.00	$125.00
15 V	110.00	125.00	150 V	110.00	125.00
20 V	110.00	125.00	250 V	110.00	125.00
30 V	110.00	125.00	300 V	110.00	125.00
50 V	110.00	125.00			

DC AMMETERS

External shunt type. To attain the scale reading listed below, an appropriate external 50 mV switchboard shunt must be used. Prices include one pair of Model 9958 5′ shunt leads only (.065 ohm, P/N 8986), external shunt not supplied; information on request. **Scale Readings Available:** 5, 10, 15, 25, 50, 75, 100, 150, 200, 300, 400, 500, 600, 750, 1000, 1500, 2000 or 3000 amps.
Model 271—List **$115.00***. **Model 273**—List **$120.00***

DC MICROAMMETERS AND MILLIAMMETERS

Ranges of 30 mA (25 mA for Model 273) and up are shunted and have a drop of approx. 50 mV.

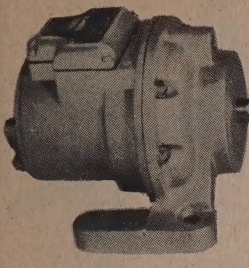
	List Price*			List Price*	
Range	**Model 271**	**Model 273**	**Range**	**Model 271**	**Model 273**
100 μA	$155.00	$185.00	25 mA	$115.00	$120.00
200 μA	145.00	160.00	50 mA	115.00	120.00
500 μA	135.00	150.00	100 mA	115.00	120.00
1 mA	125.00	130.00	200 mA	115.00	120.00
5 mA	125.00	130.00	300 mA	115.00	120.00
10 mA	125.00	130.00			

★**QUANTITY DISCOUNTS.** In Lots of 1-24, **None; 25-49, 20%; 50-99, 32%.**

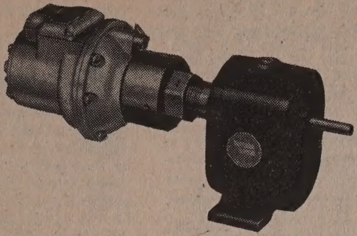
Specify the following when ordering: Model, range, AC or DC, scale (indicate any special marking if required), transformer ratio (if applicable). For wattmeters and varmeters, add the following: Voltage (max.), amps (norm.), frequency, phase and wire, connection diagram (letter and number).

SPECIAL RANGES AND DIALS TO YOUR SPECIFICATIONS FROM OUR INSTRUMENT LABS

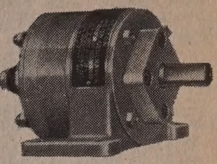
WESTON® Tachometers



Model 750
Type A



Model 750, Type M2
With Barbour Stockwell Gear Box



Model 758
Type AB

MODEL 750 DC GENERATOR—TYPE A

Commutator segments are made from specially hardened, non-corrosive alloy for exceptional long life. Self-lubricating brushes are carried in a self-aligning holder. No lubrication required, under normal operation, for 15,000 hours running time or approximately three years. Rigid die-cast dustproof aluminum mounting base and housing. Has ⅜″ dia. shaft extension for direct coupling drive, pulley or spur gear and two binding posts. Recommended for general light duty applications. **Max. Speed:** 5,000 rpm. **Torque:** Starting, 1.0 oz.-in.; Running 1.0 oz.-in. at 1,000 rpm. **Voltage Output:** 6 V, ±1% at 1,000 rpm. **Current Drain:** 50 mA, max. **Internal Resistance:** 20 ohms. **Size:** 3″ w. x 4.66″ d. x 2.87″ h. **Weight:** 1.7 lbs. **Mounting:** Base. **Shaft:** ⅜″ dia. x .71″ lg.

Weston Model 750-9901000 Type A—List Price.....**$135·71***

MODEL 750 DC GENERATOR—TYPE M2

Similar to above but is standard S.A.E. ⅞″ screw type steel mounting with $^{3}/_{16}$″ drive dog. Oil seal has been eliminated to reduce torque burden. Recommended for use with a low torque gear box such as Barbour Stockwell Gear Box above right. For direct coupling drive only. **Size:** 3″ w. x 5.61″ d. x 2.91″ h. **Weight:** 1.8 lbs. **Shaft:** $^{3}/_{16}$″ dia. x .47″ lg. Other specifications see Type A above.

Weston Model 750-9906001 Type M2—List Price....**$163·80***

MODEL 9933 BARBOUR STOCKWELL GEAR BOXES

Small light-weight gear boxes. Standard S.A.E. tachometer outlets on one side and $^{9}/_{32}$″ shaft on the other. For use with Model 750 Type M2 Generators where a step-up in speed is required. **Step-Up Ratio:** 1:10. **Starting Torque:** 20 oz.-in.

Weston Model 9933-9900001—List Price.............**$56·18***

MODEL 758 AC GENERATOR—TYPE AB

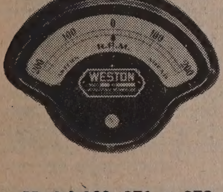
Temperature compensated output is proportional to the speed. No lubrication required under normal operation for 15,000 hours running time or about three years. Max. speed is 5,000 rpm, but may be used up to 10,000 rpm under special conditions. Rigid cast bronze base mounting. Light weight dustproof aluminum alloy housing. Has ½″ dia. shaft extension for spur gear, chain and sprocket, pulley, or direct coupling drive, and two binding posts. Recommended for general light duty applications. **Torque:** Starting, 2.5 oz.-in.; running, 2.5 oz.-in. at 1,000 rpm. **Weight:** 2.89 lbs.

Weston Model 758-9901000 Type AB—List Price.....**$96·08***

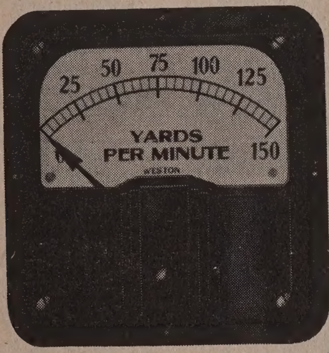
BINDING POST COVER BOXES

Weston Model 9933-0143156—For Model 750 Type A Generator. Has ½″ N.P.T. opening suitable for flexible conduit connection. List Price.....................................**$6·56***

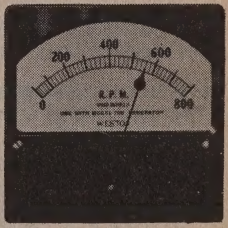
Weston Model 9933-0143157—For Model 758 Type AB Generator. Has ½″ N.P.T. opening suitable for flexible conduit connection. List Price.....................................**$6·56***



Model 269, 271 or 273



Model 919, 921 or 921-RD



Model 961 or 961-RD

AC AND DC TACHOMETER INDICATORS

DC or Rectifier type AC voltmeters calibrated in terms of various units such as rpm, minutes baking time, miles/hr., gallons/min., Hz, etc. No specially calibrated connecting leads are required for connection of normal length. One, two or up to 25 indicators may be operated from the same generator with all giving direct indication simultaneously. Supplied with single range zero left indication. Available in zero right, suppressed zero or with multiple ranges. DC indicators also available in zero center indication. All indicators are equipped with zero correctors and are temperature compensated. Dust and moisture resistant. Enclosed in steel cases except Models 961, 961-RD and 961-FD. Suffix **"DC"** indicates DC type; **"RD"**, AC; **"FD"**, frequency responsive. **Accuracy: 1%** FS, 269-DC, 271-DC, 273-DC, 921-DC; **1½%**, 269-RD, 271-RD, 273-RD, 921-RD; **2%**, 961-DC; **2½%**, 961-RD.

SWITCHBOARD (FAN SHAPED) INDICATORS

Available in three models: 269, 271 and 273. DC, AC or frequency responsive. Enclosed in drawn steel cases with long easily read scales and are similar in construction, varying only in size and scale length.

SWITCHBOARD (6″ RECTANGULAR) INDICATORS

Models 921 (DC), 921-RD (AC) and 921-FD (Frequency Responsive). Drawn steel cases with black finish. Flush or surface mounting. Easy to read even from a distance. Internal illumination can be provided at a nominal surcharge.

4″ PANEL INDICATORS

Models 961 (DC), 961-RD (AC) and 961-FD (Frequency Responsive). Flush type rectangular Bakelite* cases especially suitable for small panels. When ordering, specify panel material and thickness.

MODEL 919 DC RATIO METER

Rectangular 6″ drawn steel case matches Model 921 line instruments.

TACHOMETER INDICATOR MODELS

Case	Scale Lg.	Wt., Lbs.	DC Voltage		AC Voltage		AC Frequency	
			Model	Price*	Model	Price*	Model	Price*
Surf.	4″	1.5	269	Prices on Request	269-RD	Prices on Request	269-FD	Prices on Request
Surf.	5.8″	3.8	271		271-RD		271-FD	
Surf.	7.3″	5.0	273		273-RD		273-FD	
Surf.	5.1″	6.0	919		....		....	
Surf.	5.12″	7.0	921		921-RD		921-FD	
Flush	5.1″	6.0	919		....		....	
Flush	5.12″	7.0	921		921-RD		921-FD	
Flush	3.17″	1.0	961		961-RD		961-FD	

★QUANTITY DISCOUNT SCHEDULE

Quantity	Tachometer Generators and Accessories	Tachometer Indicators Only
1–9	List Price	Prices and Discounts on Request
10–24	10% off (Multiplier .9)	
25–49	15% off (Multiplier .85)	
50–99	20% off (Multiplier .8)	

*Registered Bakelite Corp. trademark.

WESTON® Thermometers

MODELS 4303, 4313—3″ DIAMETER

Rugged, stainless steel, bimetal thermometers featuring in-line pointer and scale to eliminate parallax error. External recalibration adjustment permits meter to be recalibrated without removing cover. **Specifications:** 3″ dia. stainless steel cover; 18-8 stainless steel threaded ½″ N.P.T. connecting nut. All stainless steel welds used at plug and case ends, assuring high resistance to corrosion. Accurate within ±1% of range of entire scale. Scale length, 6″.

MODEL 4303 (FIG. A)

Range, Degrees	List Price* (Specify Stem Length)				
	2½″	4″, 6″	9″, 12″	15″, 18″	24″
−100 to 100 F	#	#	$16.80	#	#
−40 to 120 F	$15.50	$15.00	16.80	#	$22.00
25 to 125 F	15.50	15.00	16.80	#	#
0 to 200 F	15.50	15.00	16.80	$20.00	22.00
20 to 240 F	15.50	15.00	16.80	20.00	22.00
50 to 300 F	15.50	15.00	16.80	20.00	22.00
50 to 400 F	15.50	15.00	16.80	#	#
50 to 500 F	15.50	15.00	16.80	20.00	#
150 to 750 F	15.50	15.00	16.80	#	#
200 to 1000 F	15.50	15.00	16.80	20.00	22.00
−100 to 50 C	#	#	#	#	#
0 to 50 C	15.50	15.00*	#	#	#
−50 to 100 C	#	#	#	#	#
0 to 100 C	15.50	15.00	16.80	#	#
−10 to 110 C	15.50	15.00	#	#	#
0 to 150 C	15.50	15.00	#	#	#
0 to 200 C	15.50	15.00	#	#	#
0 to 300 C	15.50	15.00	#	#	#
100 to 400 C	#	15.00	#	#	#

MODEL 4313 (FIG. B)

Range, Degrees	2½″	4″, 6″	9″, 12″	15″, 18″	24″
−100 to 100 F	#	#	#	#	#
−40 to 120 F	$25.50	$25.00	#	#	#
25 to 125 F	25.50	25.00	#	#	#
0 to 200 F	25.50	25.00	#	#	#
20 to 240 F	25.50	25.00	#	#	#
50 to 300 F	25.50	25.00	#	#	#
50 to 400 F	25.50	25.00	#	#	#
50 to 500 F	25.50	25.00	$27.00	#	#
150 to 750 F	#	25.00	#	#	#
200 to 1000 F	#	25.00	#	#	#
−100 to 50 C	#	#	#	#	#
−50 to 100 C	#	#	#	#	#
0 to 100 C	#	25.00	#	#	#
−10 to 110 C	#	25.00	#	#	#
0 to 150 C	#	25.00	#	#	#
0 to 200 C	#	25.00	#	#	#
0 to 300 C	#	25.00	#	#	#
100 to 400 C	#	#	#	#	#

*Stocked in 4″ only. #Non-stock items; available on special order.

MODELS 4503, 4513—5″ DIAMETER

Same as Models 4303 and 4313 except 5″ dia. head, 10″ scale length.

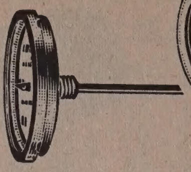
MODEL 4503 (FIG. A)

Range, Degrees	2½″	4″, 6″	9″, 12″	15″, 18″	24″
−100 to 100 F	#	#	#	#	#
−40 to 120 F	#	$22.25	$24.00§	#	#
25 to 125 F	#	22.25	24.00	#	#
0 to 200 F	$22.75	22.25	24.00	$27.00	#
20 to 240 F	22.75	22.25	24.00	27.00	$29.09
50 to 300 F	22.75	22.25	24.00	#	#
50 to 400 F	22.75	22.25	24.00	#	#
50 to 500 F	22.75	22.25	24.00	27.00	#
150 to 750 F	#	22.25	24.00	#	#
200 to 1000 F*	#	22.25	24.00§	#	#
−100 to 50 C	#	#	#	#	#
0 to 50 C	#	#	#	#	#
−50 to 100 C	#	22.25†	#	#	#
0 to 100 C	#	22.25	24.00	27.00	#
−10 to 110 C	#	22.25	24.00§	#	#
0 to 150 C	#	22.25	24.00	#	#
0 to 200 C	#	22.25	24.00	#	#
0 to 300 C	#	#	24.00	#	#
100 to 400 C	#	#	24.00	#	#

MODEL 4513 (FIG. B)

Range, Degrees	2½″	4″, 6″	9″, 12″	15″, 18″	24″
−100 to 100 F	#	#	#	#	#
−40 to 120 F	#	#	#	#	#
0 to 200 F	$33.50	$33.00	$35.00	#	#
20 to 240 F	33.50	33.00	35.00§	#	#
50 to 300 F	33.50	33.00	35.00§	#	#
50 to 400 F	#	33.00	#	#	#
50 to 500 F	#	33.00	35.00•	#	#
150 to 750 F	#	33.00	#	#	#
200 to 1000 F*	#	#	35.00	#	#
−100 to 50 C	#	#	#	#	#
−50 to 100 C	#	#	#	#	#
−10 to 100 C	#	33.00	#	#	#
0 to 100 C	#	33.00	#	#	#
0 to 150 C	#	33.00	#	#	#
0 to 200 C	#	#	#	#	#
0 to 300 C	#	#	#	#	#
100 to 400 C	#	#	#	#	#

*Not recommended for continuous operation above 800° F. †Stocked in 4″ only. §9″ only. •12″ only. #Non-stock items; available on special order.



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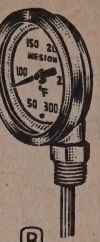

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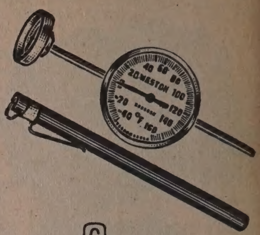


C

MODELS 2281 AND 2282
GENERAL PURPOSE THERMOMETERS

Model 2281: General industrial thermometers equipped with 18-8 stainless steel, ¼″ diameter stem and threaded ¼″ National Pipe Thread connection nut. Can be supplied with ⅜″ or ½″ NPT connection nut at extra charge. Standard lengths listed below include threads. Intermediate stem lengths available on special order.

Model 2282: General testing thermometers supplied with 18-8 stainless steel, .142″ dia. stem, without connection nut. Standard length 8″ including hub. Other stem lengths available on special order. **Head** (Both models): 2″ dia., 18-8 stainless case and bezel. Standard glass window. **Scale Length** (Both models): 4½″. **Accuracy:** Within 1% for Model 2281 and ½% for Model 2282 of range over entire scale.

MODEL 2281 (FIG. A)

Range, Degrees	List Price* (Specify Stem Length)				
	2½″	4″, 6″	9″, 12″	18″	24″
−100 to 100 F	#	#	#	#	#
−40 to 120 F	$13.00	$12.60	#	#	#
25 to 125 F	#	12.60	$15.00•	#	#
0 to 200 F	13.00	12.60	15.00	#	#
20 to 240 F	13.00	12.60	15.00•	#	#
50 to 300 F	13.00	12.60†	15.00	#	#
50 to 400 F	13.00	12.60	#	#	#
50 to 500 F	13.00	12.60	15.00§	#	#
150 to 750 F	13.00	12.60	15.00§	#	#
200 to 1000 F	#	12.60‡	15.00§	#	#
−100 to 50 C	#	#	#	#	#
0 to 50 C	#	#	#	#	#
−50 to 100 C	#	#	#	#	#
0 to 100 C	13.00	12.60‡	#	#	#
−10 to 110 C	#	#	#	#	#
0 to 150 C	13.00	#	#	#	#
0 to 200 C	13.00	#	#	#	#
0 to 300 C	#	#	#	#	#
100 to 400 C	#	#	#	#	#

MODEL 2282—8″ STEM ONLY

Ranges, Degrees	List Price*	Range, Degrees	List Price*
−100 to 40 C	#	−100 to 100 F	#
0 to 50 C	#	25 to 125 F	$12.00
−50 to 100 C	#	−40 to 160 F	#
−10 to 110 C	#	0 to 180 F	12.00
0 to 100 C	#	0 to 220 F	12.00
0 to 150 C	#	50 to 250 F	#
0 to 250 C	#	50 to 300 F	12.00
−100 to 540 C −150 to 1000 F	$17.00*	50 to 400 F	12.00
		50 to 500 F	12.00
−100 to 260 C −150 to 500 F	14.50▲		

*Scale calibrated in both °C and °F; with .25″ dia. stem. ▲ Scale calibrated in both °C and °F. †Stocked in 4″ only. ‡6″ only. §9″ only. •12″ only. #Non-stock items; available on special order.

MODEL 2292 BIMETAL POCKET THERMOMETER WITH EXTERNAL ADJUSTMENT (FIG. C)

Ideal for spot checking. Includes plastic case with attached pocket clip. Head, 1″ dia. with 18-8 stainless steel case and bezel, plastic window; head temps. should not exceed 220° F. Metal scale plate has permanent black figures and markings. Spiking stem, 5″ long x .142″ dia. made of 18-8 Type 304 stainless steel. Inserts easily into meat, food or other semi-solid material. **Accuracy:** Within ½% of range over entire scale. **Scale Length:** 2.1″. Case also serves as handle for thermometer. Thermometer can be recalibrated externally by immersing stem in controlled temperature bath and turning hex nut until pointer indicates correct temperature. **Specify range when ordering.**

Weston Model 2292 Pocket Thermometer—Ranges: −40 to 160° F or 25 to 125° F. List Price........................**$12.00***

Weston Model 2292 Pocket Thermometer—Ranges: 0–220° F; 50 to 500° F; 0 to 150° C or 0–250° C. List Price........**$12.00***

★QUANTITY DISCOUNTS

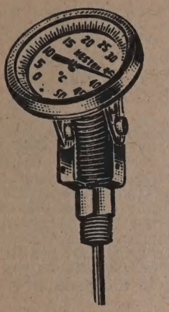
Specify Model, Range and Stem Length when ordering.

Description	Discount, Lots of		
	1-24	25-49	50 Up
Bimetal Thermometers	List	−20%	−25%
Thermometer Wells	List	−10%	−10%

WESTON® BIMETAL THERMOMETERS

MODELS 4304 AND 4504 UNIVERSAL ANGLE THERMOMETERS

● REMOVABLE FRONTS ● 3′ AND 5′ SIZES ● STAINLESS STEEL CONSTRUCTION
● HELIARC WELDED ● PIVOTED YOKE ● EXTERNAL CALIBRATION ● ±1% ACCURACY



Unique, highly dependable, fully adjustable 3-inch Model 4304 and 5-inch Model 4504 universal angle thermometer can be mounted for viewing at any angle. Dial can be twisted or tilted on the stem for ease of installation. Highly engineered thermometer features all stainless steel construction with heavy gauge stainless steel bellows; external calibration and removable fronts. A minimum of set screw adjustment combined with simple design which virtually eliminates pointer shift. Pivoted yoke is stronger and more rigid than eccentric gear linkages. Bimetal element designed to assure long term stability and accuracy. All Heliarc welded. **Accuracy:** Within ±1% of range over entire scale. Range of 25° to 125° F and 0° to 50° C also available on special order; prices on request.
*Patent pending.

3′ MODEL 4304

Prices are for thermometers with fixed connection ½″ NPT. For union connection ½″ NPT, specify and add **$6.75** to price given. Specify range and stem length when ordering.

Range, Degrees	°/Div.	List Price*			
		2½″ Lg. Stem	4″ Lg. Stem	6″ Lg. Stem	9″ or 12″ Lg. Stem
−100 to 100 F	2	**	**	**	**
−40 to 120 F	1	**	**	**	**
0 to 200 F	2	$28.75	$28.75	$28.75	**
20 to 240 F	2	28.75	28.75	28.75	**
50 to 300 F	2	**	28.75	**	**
50 to 400 F	5	**	28.75	28.75	**
50 to 500 F	5	**	28.75	28.75	**
150 to 750 F	10	**	**	28.75	**
200 to 1000 F†	10	**	**	28.75	**
−100 to 50 C	1	**	28.75	**	**
−50 to 100 C	1	**	28.75	**	**
0 to 100 C	1	**	28.75	**	**
−10 to 110 C	1	**	28.75	**	**
0 to 150 C	1	**	28.75	**	**
0 to 200 C	2	**	28.75	**	**
0 to 300 C	5	**	28.75	**	**
100 to 400 C	5	**	28.75	**	**

†Not recommended for continuous operation above 800° F.
**Non-stock item; available on special order.

5′ MODEL 4504

Prices are for thermometers with fixed connection ½″ NPT. For union connection ½″ NPT, specify and add **$6.75** to price given. Specify range and stem length when ordering.

Range, Degrees	°/Div.	List Price*			
		2½″ Lg. Stem	4″ Lg. Stem	6″ Lg. Stem	9″ or 12″ Lg. Stem
−100 to 100 F	2	**	**	**	**
−40 to 120 F	1	**	$34.00	$34.00	$36.00
0 to 200 F	2	**	34.00	34.00	36.00
20 to 240 F	2	$34.00	34.00	34.00	36.00
50 to 300 F	2	**	34.00	34.00	36.00
50 to 400 F	5	**	34.00	34.00	36.00
50 to 500 F	5	**	34.00	34.00	36.00
150 to 750 F	10	**	**	**	36.00
200 to 1000 F*	10	**	**	**	36.00
−100 to 50 C	1	**	**	**	**
−50 to 100 C	1	**	**	**	**
0 to 100 C	1	**	34.00	34.00	36.00†
−10 to 110 C	1	**	**	**	**
0 to 150 C	1	**	**	34.00	**
0 to 200 C	2	**	34.00	34.00	**
0 to 300 C	5	**	34.00	34.00	**
100 to 400 C	5	**	**	**	**

*Not recommended for continuous operation above 800° C.
†Available in 9″ length stem only. **Non-stock item; available on special order.

MODELS 4304 AND 4504 18′ AND 24′ STEM LENGTH

Centigrade thermometers are available on special order only. same ranges available as listed above for other stem lengths.

Range, Degrees	°/Div.	List Price* Model 4304		List Price* Model 4504	
		15″or18″ Lg.Stem	24″ Lg. Stem	15″or18″ Lg.Stem	24″ Lg. Stem
−100 to 100 F	2	**	**	**	**
−40 to 120 F	1	**	**	**	**
0 to 200 F	2	**	**	**	**
20 to 240 F	2	**	**	$38.00	**
50 to 300 F	2	**	**	**	**
50 to 400 F	5	**	**	38.00	**
50 to 500 F	5	**	**	38.00	**
150 to 750 F	10	**	**	38.00	**
200 to 1000 F*	10	**	**	38.00	**

*Not recommended for continuous operation above 800° F.
**Non-stock item; available on special order.

MODEL 2284 MIRROBAND® PRECISION TESTING THERMOMETERS

Feature mirror scale and knife-edge pointer to eliminate parallax error. Completely encased in welded stainless steel except for the scale glass. Head, 2″ dia. with 18-8 type 304 stainless steel, .142″ dia. stem. Standard length is 8″. **Accuracy:** Within ½% of range over the entire scale.

Weston Model 2284 Mirroband® Thermometer—Ranges: 25 to 125° F; −20 to 100° F; 0 to 220° F; 50 to 250° F; 50 to 500° F; −10 to 110° C; 0 to 250° C. Specify range. List Price. . **$13.00***

MODELS 4360 AND 4370 NAVY TYPE THERMOMETERS

Bimetal thermometers meet MIL-T-17244C specifications.

Complete information, prices and quantity discounts available on request.

MODEL 9966 WELLS FOR MODELS 4360 AND 4370

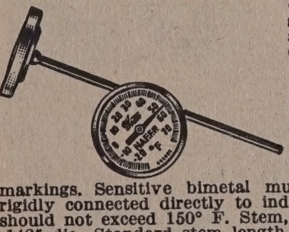
Complete information, prices and quantity discounts available on request.

★QUANTITY DISCOUNTS

Specify Model, Range and Stem Length when ordering.

Description	Discount, Lots of		
	1-24	25-49	50 Up
Bimetal Thermometers	List	−20%	−25%
Thermometer Wells	List	−10%	−10%

MODEL 2261 BIMETAL TESTING THERMOMETER



Completely encased in stainless steel for protection against acids and gases. Ideal for use as meat or food testing thermometer, with addition of spike stem. Available for internal oven use at continuous high temperatures. Head, 1¾″ dia. with 18-8 stainless steel case and bezel. Pointer and metal scale plate designed for easy reading with permanent black figures and markings. Sensitive bimetal multiple wound helix element is rigidly connected directly to indicating needle. Plastic window should not exceed 150° F. Stem, 18-8 Type 304 stainless steel, .142″ dia. Standard stem length, 8″ including hub; other stem lengths are available. **Scale Length:** 3.4″. **Accuracy:** Within ½ of 1% over entire scale range. Specify range when ordering.

Range, Degrees	List Price*	Range, Degrees	List Price*
−100 to 100 F	$10.00	50 to 500 F	$10.00
25 to 125 F	10.00	−100 to 40 C	10.00
−40 to 160 F	10.00	0 to 50 C	10.00
0 to 180 F	10.00	−50 to 100 C	10.00
0 to 220 F	10.00	−10 to 110 C	10.00
50 to 250 F	10.00	0 to 100 C	10.00
50 to 300 F	10.00	0 to 150 C	10.00
50 to 400 F	10.00	0 to 250 C	10.00

MODEL 2261 SPIKE STEM THERMOMETERS

Stem length, 5″ or 8″. **Single Range:** −40 to 160° F, 0 to 180° F, 0 to 220° F or 25 to 125° F. Any range listed, 5″ or 8″ stem. List Price. **$11.00***

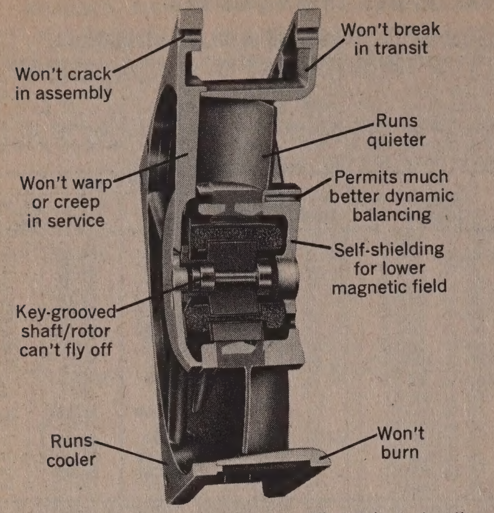
MODEL 2261 PLASTIC WINDOW THERMOMETERS

8″ stem length. **Single Range:** 25 to 125° F, 0 to 180° F or 0 to 220° F. Specify range. List Price. **$12.00***

Note: All Weston Thermometers can be supplied with plastic windows at extra charge.

PAMOTOR
ONE OF THE PURDY GROUP OF COMPANIES

Miniature Metal Fans


Won't crack in assembly
Won't break in transit
Runs quieter
Won't warp or creep in service
Permits much better dynamic balancing
Self-shielding for lower magnetic field
Key-grooved shaft/rotor can't fly off
Runs cooler
Won't burn

All-metal construction —nine ways better!

PAMOTOR FANS FOR EFFICIENT COOLING AND HIGH RELIABILITY

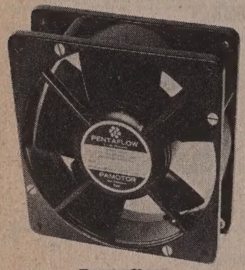
- **All metal construction**
- **Low noise level**
- **Long operating life without maintenance**
- **Low operating temperature**

Pamotor fans designed for high reliability and long life. All metal, non-flammable construction provides extra strength and durability. No cracking, creeping or warping to cause lock-up or bearing failure. Special moisture-resistant finish prevents corrosion or other deterioration from high humidity or extreme temperature variations. Pamotor fans will operate dependably throughout life of the equipment they cool. Housings and venturies aerodynamically designed for maximum air flow with minimum air turbulence to provide more efficient airstream characteristics and reduced noise levels. Speech interference level (SIL) is characteristically 5 dB to 10 dB below that of competitive designs with comparable air flow.

PENTAFLOW™ MINIATURE FANS

- **Premium grade**
- **5 year warranty**

For custom-designed professional-grade instrumentation and equipment; in permanently installed systems requiring optimum performance and absolute dependability for many years; field-replacements or retrofit units for original-equipment fans that have proved to be unreliable, too noisy or inefficient.



Pentaflow

TYPES AND SPECIFICATIONS

Pamotor Number	Voltage VAC	Frequency Hz	Air Flow cfm	SIL dB	Nominal Size, Inches
4500P	115	50/60	115	37.5	4½ x 4½ x 1½
4600P	115	50/60	120	39.8	4½ x 4½ x 1½
8500P	115	50/60	43	28.8	3⅛ x 3⅛ x 1½*

*Standard mounting dimensions for EIA 3½" rack panels.

WEIGHT AND PRICING

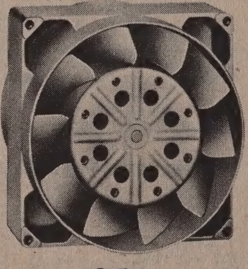
Pamotor Number	Wt., Oz.	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
4500P	20	$18.80	$17.15	$15.85	$14.40	$13.50
4600P	20	20.60	18.75	17.35	16.55	15.85
8500P	18½	20.60	18.75	17.35	16.55	15.85

INDUCTION-TYPE GENERAL PURPOSE FANS

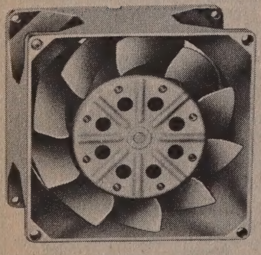
TYPES AND SPECIFICATIONS

Pamotor Number	Voltage VAC	Frequency Hz	Cap. μF	Input Power Watts	Air Flow cfm	Speed rpm	SIL dB
900	24–42	50/60	5.6	2.5	25–34	1750*	24*
1000A	115	60	6.0	24	125	3500	43
1110	115	400	0.5	30	110	3720	50
1300	220	50	2.0	26	110	3400	43
2000	115	60	4.0	25	130	3500	41.6
2050	220	50	2.0	26	116	2900	41.6
2110	115	400	0.5	30	135	3720	50
3000	115	60	4.0	15	65	3180	33.5
3050	220	50	1.0	14	58	2760	33.4

*At 24 VAC.

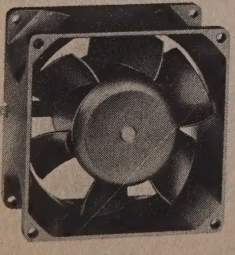


Series 1000A-1500



Series 2000-2500

Series 900



Series 3000

SIZE, WEIGHT AND PRICING

Following pricing does not include the cost of applicable capacitor where required. See below for Pamotor capacitor number and pricing.

Pamotor Number	Size, Inches	Wt., Lbs.	Net Each, Lots of		
			1-9	10-24	25-49
900	3 dia. x 1½ d.	⅜	$14.05	$12.80	$11.60
1000A	4½ sq. x 2 d.	2⅝	29.05	26.25	23.65
1110	4½ sq. x 2 d.	2½	61.25	55.35	49.80
1300	4½ sq. x 2 d.	2⅝	29.05	26.25	23.65
2000	4½ sq. x 2 d.	21⁄16	29.05	26.25	23.65
2050	4½ sq. x 2 d.	21⁄16	31.30	28.50	25.90
2110	4½ sq. x 2 d.	2	61.25	55.35	49.80
3000	3½ sq. x 2 d.	13⁄16	27.00	24.60	22.30
3050	3½ sq. x 2 d.	13⁄16	27.00	24.60	22.30

CAPACITORS FOR INDUCTION-TYPE FANS

Capacitors supplied are either Sprague oval can type or German stud mount (final suffix **G**). When ordering 4 μF or 6 μF capacitors, specify desired type.

Pamotor Number	For Models	Cap. μF	Net Each, Lots of		
			1-9	10-24	25-49
1004	1000A	6.0	$2.75	$2.50	$2.25
1004G	1000A	6.0	4.20	3.95	3.70
1005	2000, 3000	4.0	2.75	2.50	2.25
1005G	2000, 3000	4.0	4.20	3.95	3.70
1006	1300, 2050	2.0	2.75	2.50	2.25
1009	3050	1.0	2.25	2.00	1.90
1009G	3050	1.0	2.90	2.65	2.55
1010	1110, 2110	0.5	2.25	2.00	1.90
1011	900	5.6	1.75	1.60	1.45

PAMOTOR
ONE OF THE PURDY GROUP OF COMPANIES

Miniature Metal Fans

SHADED-POLE TYPE GENERAL PURPOSE FANS

TYPES AND SPECIFICATIONS

All models are available in 220 V 50/60 Hz versions.

Pamotor No.	Voltage VAC	Frequency Hz	Input Power Watts	Air Flow cfm	Speed rpm	SIL dB	Size, Inches
1500S	115	60	27	105	3300	44	4½ sq. x 2 d.
1550S	220	50	27	90	2800	44	
2500S	115	60	27	115	3300	45.4	
2550S	220	50	27	95	2800	45.4	
4500C	115	60	19	115	2900	37.5	4½ sq. x 1½ d.
4506*	115	60	19	115	2900	37.5	
4550C	230	50	18	115	2900	37.5	4½ sq. x 1½ d.
4556*	230	50	18	115	2900	37.5	
4600	115	60	20	120	3100	39.8	4½ sq. x 1½ d.
4650	220	50	18	103	2650	39.8	
4700†	115	60	20	65	2800	37	4⅛ dia. x 1½ d.
4750†	220	50	17	65	2500	37	
4800	115	50/60	10	70	1900	18	4½ sq. x 1½ d.
5500S	115	60	40	140	3250	41.8	4½ sq. x 2 d.
	115	50	43	118	2750	41.8	
7500S	115	60	40	265	3300	40.6	6 dia. x 2 d.
7506*	115	60	40	265	3300	40.6	
7550S	230	50	38	265	3250	40.5	6 dia. x 2 d.
7556*	230	50	38	265	3250	40.6	
8500C	115	60	13	43	3200	28.8	3⅛ sq. x 1½ d.‡
8506*	115	60	13	43	3200	28.8	
8550	230	50	14	43	3200	28.8	3⅛ sq. x 1½ d.‡
8556*	230	50	14	43	3200	28.8	

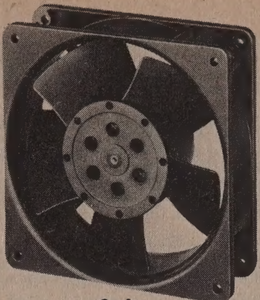
*High-temperature, ball-bearing versions. †Without venturi; saves space and weight when equipment cooled serves as housing. ‡Standard mounting dimensions for EIA 3½" rack panels.

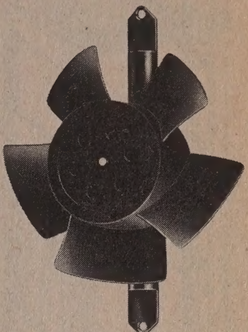
WEIGHT AND PRICING

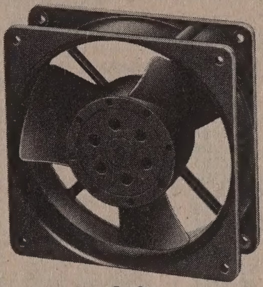
Pamotor Number	Wt., Lbs.	Net Each, Lots of				
		1-9	10-24	25-49	50-99	100-249
1500S	2⅝	$25.35	$23.05	$21.20	$20.35	$19.50
1550S	2⅝	25.35	23.05	21.20	20.35	19.50
2500S	2¹⁄₁₆	25.35	23.05	21.20	20.35	19.50
2550S	2¹⁄₁₆	25.35	23.05	21.20	20.35	19.50
4500C	1¼	14.30	13.00	11.95	11.45	10.95
4506	1¼	26.25	23.90	22.00	21.15	20.25
4550C	1¼	14.30	13.00	11.95	11.45	10.95
4556	1¼	26.25	23.90	22.00	21.15	20.25
4600	1⁵⁄₁₆	17.35	15.80	14.55	13.95	13.40
4650	1⁵⁄₁₆	17.35	15.80	14.55	13.95	13.40
4700	1	14.05	12.80	11.80	11.30	10.85
4750	1	14.05	12.80	11.80	11.30	10.85
4800	1¼	15.95	14.50	13.30	12.75	12.25
5500S	2³⁄₁₆	32.80	29.90	27.50	26.40	25.30
7500S	2¾	40.35	36.75	33.80	32.45	31.15
7506	2¾	63.65	58.00	53.35	51.25	49.10
7550S	2¾	40.35	36.75	33.80	32.45	31.15
7556	2¾	63.65	58.00	53.35	51.25	49.10
8500C	1³⁄₁₆	16.40	14.90	13.70	13.15	12.60
8506	1³⁄₁₆	27.10	24.65	22.70	21.80	20.90
8550	1³⁄₁₆	16.40	14.90	13.70	13.15	12.60
8556	1³⁄₁₆	27.10	24.65	22.70	21.80	20.90

ACCESSORIES

Pamotor Number	Description	For Series	Net, 1-499
5501	Brackets (pair)	2000, 2110, 2500C, 4500C, 4600C, 5500S	$0.30
5502	Filter		2.00
5503	Screen assembly		2.80
5504	Fingerguards	As above, also 4700	1.60
5505	Plug and cord	4500C, 4600C, 4800	.60
5506	Fingerguards	7500S	3.30
5507	Fingerguards	1000A, 1110, 1300, 1500	.95
5508	Fingerguards	8500C	.85
5509	Air straightener	7500S	3.50
5511	Adapter ring	7500S	1.85


Series 4500


Series 4700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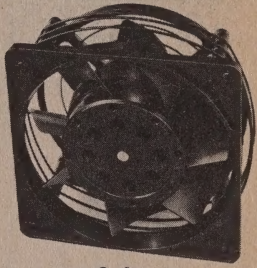
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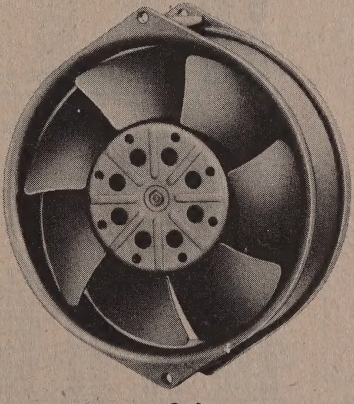
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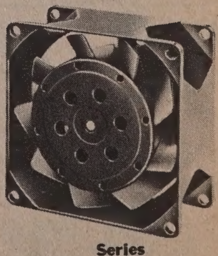
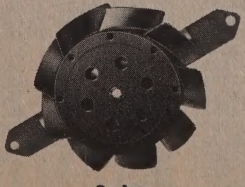
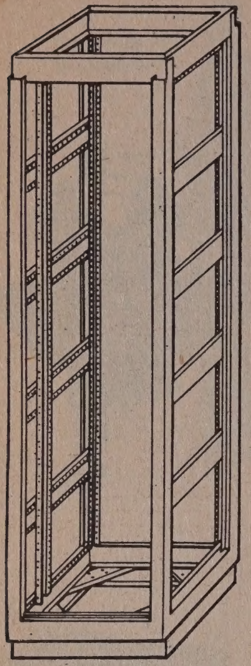

Series 8500C


Series 8700

BUD Series “60” Cabinet Racks



Ⓐ **Upright Rack**

Scientifically designed to meet all requirements for human needs as well as component physical specifications; the most practical cabinet rack developed for either a single piece of equipment or a large instrumentation system. Very economical to the user, units are shipped fully assembled and ready for immediate use.

Basic frame welded in a solid unit composed of 14-gauge cold-rolled steel channels. Sides have “U” braces with perforated channels for fastening vertical adjustable mounting rails. Rails also support other types of equipment such as brackets, shelves, slides, etc. Eliminates need of drilling holes in the rack. Sides and rear door made of 18 gauge steel. Door may be mounted to open left or right. Vertical channel, 4″ wide, welded to door to prevent vibration or whip. Two pairs of panel mounting rails are supplied; fully adjustable. Panels may be mounted in front and rear at the same time. Front rails drilled and tapped 10-32 W.E. spacing. Rear rails are drilled according to universal spacing.

All Series Sixty enclosures may be quickly combined with each other to create units of any desired width as shown in the Add-A-Rack series. In addition, such accessories as desk tops, turrets, drawers, slides, sloping panel supports and front door are easily installed.

Standard finishes are textured baked enamel over primer. Specify two-tone gray by adding suffix **GGY.** For two-tone blue, add suffix **BBY** to order number. Standard Bud relay rack panels are available for the Series Sixty racks in light gray and light blue; when ordering, add suffix **GY** for gray; **BY** for blue.

UPRIGHT CABINET RACKS (FIG. A)

Completely assembled 19″ racks with sides, rear door and top. Standard units have plain sides and door and solid top. For greater ventilation, order units with louvered sides and rear door and solid top. Width, 24 1/16″. Inside depth 20½″ clear on all units with 22″ outside depth; 24″, all others. Top opening 18 5/16″ w. x 17″ d. on units with 22″ outside depth; 18 5/16″ w. x 20½″ d., all others. **Specify Color When Ordering:** Add suffix **GGY** to number for gray; suffix **BBY** for blue.

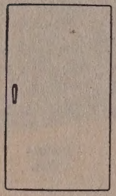
COMPLETE 19″ RACKS WITH PLAIN SIDES AND DOOR

Bud No.	Height	Outside Depth	Panel Space	Weight, Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2300	29⅝″	22″	21″	118	$139·60	$125·65	$111·70
60-2301	40⅛″	22″	31½″	156	172·75	155·50	138·20
60-2302	50⅝″	22″	42″	173	191·80	172·60	153·45
60-2303	61⅛″	22″	52½″	197	213·10	191·80	170·50
60-2304	69⅞″	22″	61¼″	220	236·80	213·10	189·45
60-2305	78⅝″	22″	70″	235	263·05	236·75	210·45
60-2306	87⅜″	22″	78¾″	265	287·20	258·50	229·75
60-2307	29⅝″	25½″	21″	156	164·85	148·35	131·90
60-2308	40⅛″	25½″	31½″	176	191·50	172·35	153·20
60-2309	50⅝″	25½″	42″	185	212·80	191·50	170·25
60-2310	61⅛″	25½″	52½″	211	236·25	212·65	189·00
60-2311	69⅞″	25½″	61¼″	240	262·50	236·25	210·00
60-2312	78⅝″	25½″	70″	256	291·60	262·45	233·30
60-2313	87⅜″	25½″	78¾″	267	318·25	286·45	254·60

30″ deep racks also available; prices on request.

COMPLETE 19″ RACKS WITH LOUVERED SIDES AND DOOR

Bud No.	Height	Outside Depth	Panel Space	Weight, Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2700	29⅝″	22″	21″	118	$145·05	$130·55	$116·05
60-2701	40⅛″	22″	31½″	156	180·15	162·15	144·10
60-2702	50⅝″	22″	42″	173	201·85	181·65	161·50
60-2703	61⅛″	22″	52½″	197	230·65	207·60	184·50
60-2704	69⅞″	22″	61¼″	220	251·10	226·00	200·90
60-2705	78⅝″	22″	70″	235	278·80	250·90	223·05
60-2706	87⅜″	22″	78¾″	265	302·85	272·55	242·30
60-2707	29⅝″	25½″	21″	156	170·95	153·85	136·75
60-2708	40⅛″	25½″	31½″	176	206·40	185·75	165·10
60-2709	50⅝″	25½″	42″	185	229·80	206·80	183·55
60-2710	61⅛″	25½″	52½″	211	255·55	230·00	204·45
60-2711	69⅞″	25½″	61¼″	240	283·95	255·55	227·15
60-2712	78⅝″	25½″	70″	256	315·40	283·85	252·30
60-2713	87⅜″	25½″	78¾″	267	343·80	309·40	275·05



Ⓑ **Plain Door**

ACCESSORIES FOR UPRIGHT CABINET RACKS

ACCESSORY DOORS

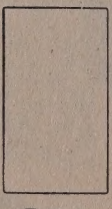
Doors are interchangeable; may be used for front or rear of rack; mount to open either left or right.

FOR 19″ PANEL SPACE

Width, 18 15/16″.

Plain Type (Fig. B) Bud No.	Net Each, Lots of 1-2	3-4	5-7	Ht.	Fits Rack With Panel Space of	Wt., Lbs.	Louvered Type (Fig. C) Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-2340	$23.35	$21.00	$18.70	21 7/16″	21″	8	60-2540	$26.65	$24.00	$21.30
60-2341	28.80	25.90	23.05	31 15/16″	31½″	11½	60-2541	33.15	29.85	26.50
60-2342	31.90	28.70	25.50	42 7/16″	42″	15½	60-2542	36.85	33.15	29.50
60-2343	35.55	32.00	28.45	52 15/16″	52½″	19	60-2543	40.60	36.55	32.50
60-2344	39.25	35.35	31.40	61 11/16″	61¼″	22¼	60-2544	45.40	40.85	36.30
60-2345	45.90	41.30	36.70	70 7/16″	70″	25½	60-2545	50.40	45.35	40.30
60-2346	47.55	42.80	38.05	79 3/16″	78¾″	29	60-2546	55.05	49.55	44.05

Ⓒ **Louvered Door**



Ⓓ **Plain Side**

ACCESSORY SIDES

Width, 22″ except 60-2567–60-2573, 25½″. Sold in pairs only.

Plain Type (Fig. D) Bud No.	Net Each Pair, Lots 1-2	3-4	5-7	Ht.	Fits Rack With Panel Space of	Wt., Lbs.	Louvered Type (Fig. E) Bud No.	Net Each Pair, Lots 1-2	3-4	5-7
60-2560	$34.75	$31.30	$27.80	26 55/64″	21″	12½	60-2580	$ 41.05	$36.95	$32.85
60-2561	45.85	41.25	36.70	37 23/64″	31½″	17½	60-2581	54.10	48.70	43.30
60-2562	53.40	48.05	42.70	47 55/64″	42″	21	60-2582	64.45	58.00	51.55
60-2563	61.65	55.50	49.30	58 23/64″	52½″	26¼	60-2583	75.75	68.20	60.60
60-2564	67.95	61.15	54.35	67 7/64″	61¼″	30	60-2584	83.55	75.20	66.85
60-2565	74.85	67.35	59.90	75 55/64″	70″	34	60-2585	92.70	83.45	74.15
60-2566	85.80	77.20	68.65	84 39/64″	78¾″	38	60-2586	97.65	87.90	78.10
60-2567	43.80	39.40	35.05	26 55/64″	21″	14½	60-2587	48.10	43.30	38.50
60-2568	57.30	51.55	45.85	37 23/64″	31½″	20	60-2588	61.50	55.35	49.20
60-2569	66.25	59.65	53.00	47 55/64″	42″	24	60-2589	73.20	65.90	58.55
60-2570	76.95	69.25	61.55	58 23/64″	52½″	29½	60-2590	85.05	76.55	68.05
60-2571	84.25	75.85	67.40	67 7/64″	61¼″	34½	60-2591	93.10	83.80	74.50
60-2572	93.75	84.40	75.00	75 55/64	70″	39	60-2592	102.55	92.30	82.05
60-2573	98.70	88.85	78.95	84 39/64″	78¾″	43½	60-2593	108.00	97.20	86.40

Ⓔ **Louvered Side**

BUD Series “60” Cabinet Racks

ACCESSORIES FOR UPRIGHT CABINET RACKS (CONT'D)

ACCESSORY PERFORATED TOP

Width, 21¹⁵⁄₁₆″.

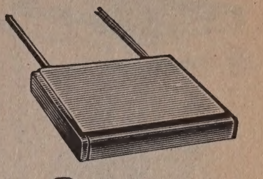
Bud No.	For Panel Space	Depth	Fits Upright Rack	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2370	19″	17″	With overall depth of 22″	6	$ 9.55	$8.60	$7.65
60-2371	19″	20½″	With overall depth of 25½″	7	10.05	9.05	8.05

SERIES SIXTY DESK TOP (FIG. F)

May be used in connection with any Series Sixty enclosure. Furnished completely assembled with antique white Formica* surface. Fastens to panel mounting rails by two pre-drilled channels. Will support in excess of 200 lbs. Surface 24¹⁄₁₆″ wide, 19½″ deep, 3¹⁄₁₆″ high. Available in three colors. **Specify Color:** Add suffix **GG** for gray; **BB** for blue; **HG** for gray hammertone.

Bud No.	Fits Series Sixty	Support Channel	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2360	With 22″ depth	21⁹⁄₃₂″ long	22	$50.50	$45.45	$40.40
60-2362	With 25½″ depth	24²⁵⁄₃₂″ long	23	52.05	46.85	41.65

*Registered Synthane Corp. trademark.



Ⓕ Desk Top

INCLINED PANEL CABINET RACKS (FIG. G)

Completely assembled with sides, rear door and solid top. Available in two combinations of plain or louvered sides and rear door. **Specify Color When Ordering:** Add suffix **GGY** to number for gray; **BBY** for blue.

COMPLETE 19″ RACKS WITH PLAIN SIDES AND DOOR

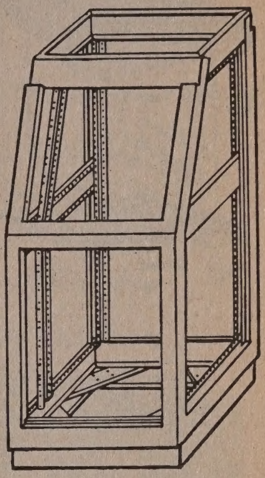
Size, 50⅝″ h. x 24¹⁄₁₆″ w. x 22″ d., outside; 20½″ d., clear inside. Weight, 165 lbs.

Bud No.	Incline Panel Height	Vertical Panel Height	Top Opening, W. x D.	Net Each, Lots of 1-2	3-4	5-7
60-2330	10½″	29¾″	18⁵⁄₁₆″ x 11⁵³⁄₆₄″	$209.35	$188.40	$167.50
60-2331	15¾″	24½″	18⁵⁄₁₆″ x 10¹⁄₃₂″	221.80	199.60	177.45
60-2332	17½″	22¾″	18⁵⁄₁₆″ x 9²⁷⁄₆₄″	221.80	199.60	177.45

30″ deep racks also available; prices on request.

COMPLETE 19″ RACKS WITH LOUVERED SIDES AND DOOR

Bud No.	Incline Panel Height	Vertical Panel Height	Top Opening, W. x D.	Net Each, Lots of 1-2	3-4	5-7
60-2730	10½″	29¾″	18⁵⁄₁₆″ x 11⁵³⁄₆₄″	$224.80	$202.30	$179.85
60-2731	15¾″	24½″	18⁵⁄₁₆″ x 10¹⁄₃₂″	238.00	214.20	190.40
60-2732	17½″	22¾″	18⁵⁄₁₆″ x 9²⁷⁄₆₄″	238.00	214.20	190.40



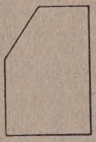
Ⓖ Inclined Panel Rack

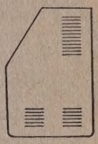
ACCESSORIES FOR INCLINED PANEL CABINET RACKS

ACCESSORY FRONT DOORS
FOR 19″ PANEL SPACE

Width, 18¹⁵⁄₁₆″.

Plain Type (Fig. J)							Louvered Type (Fig. K)			
Bud No.	Net Each, Lots of 1-2	3-4	5-7	Height	Fits Rack Top Open. Size, In.	Wt., Lbs.	Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-2350	$28.90	$26.00	$23.10	30³⁄₁₆″	18⁵⁄₁₆ x 11⁵³⁄₆₄	11	60-2550	$33.25	$29.95	$26.60
60-2351	26.85	24.15	21.50	24¹⁵⁄₁₆″	18⁵⁄₁₆ x 10¹⁄₃₂	9½	60-2551	31.15	28.05	24.90
60-2352	26.25	23.65	21.00	23³⁄₁₆″	18⁵⁄₁₆ x 9²⁷⁄₆₄	9	60-2552	30.10	27.10	24.10



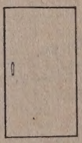


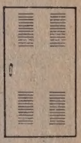
Ⓗ Side Panels Ⓘ

ACCESSORY REAR DOORS
FOR 19″ PANEL SPACE

Size, 18¹⁵⁄₁₆″ w. x 42⁷⁄₁₆″ h.

Plain Type (Fig. J)						Louvered Type (Fig. K)			
Bud No.	Net Each, Lots of 1-2	3-4	5-7	Fits Rack Top Open. Size, In.	Wt., Lbs.	Bud No.	Net Each, Lots of 1-2	3-4	5-7
60-2342	$31.90	$28.70	$25.50	All sizes	15½	60-2542	$36.85	$33.15	$29.50



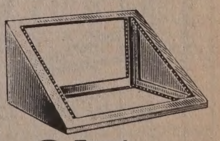


Ⓙ Doors Ⓚ

ACCESSORY SIDES

Specify “L” for left side or “R” for right side, determined when facing front of rack. Size, 22″ w. x 47⁵⁵⁄₆₄″ h. Sold in pairs only.

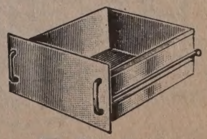
Plain Type (Fig. H)						Louvered Type (Fig. I)			
Bud No.	Net Each Pair, Lots 1-2	3-4	5-7	Fits Rack Top Open. Size, In.	Wt., Lbs.	Bud No.	Net Each Pair, Lots 1-2	3-4	5-7
60-2574	$55.45	$49.90	$44.35	18⁵⁄₁₆ x 11⁵³⁄₆₄	11	60-2594	$61.20	$55.10	$48.95
60-2575	57.00	51.30	45.60	18⁵⁄₁₆ x 10¹⁄₃₂	9½	60-2595	63.15	56.85	50.50
60-2576	57.60	51.85	46.10	18⁵⁄₁₆ x 9²⁷⁄₆₄	9	60-2596	63.90	57.50	51.10



Ⓛ Turret

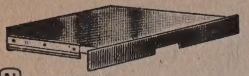
ACCESSORY PERFORATED TOPS
FOR 19″ PANEL SPACE

Bud No.	Width	Depth	Fits Rack Top Size, In.	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
60-2372	21¹⁵⁄₁₆″	11¹³⁄₁₆″	18⁵⁄₁₆ x 11⁵³⁄₆₄	3½	$7.35	$6.60	$5.90
60-2373	21¹⁵⁄₁₆″	10″	18⁵⁄₁₆ x 10¹⁄₃₂	3½	7.15	6.45	5.70
60-2374	21¹⁵⁄₁₆″	9¹³⁄₃₂″	18⁵⁄₁₆ x 9²⁷⁄₆₄	3¼	7.15	6.45	5.70

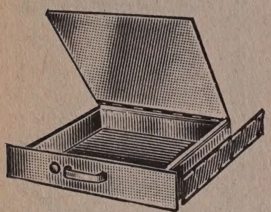


Ⓜ Drawer

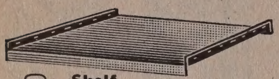
BUD Series "60" TURRETS, CONVERTIBLES, RACKS AND ACCESSORIES



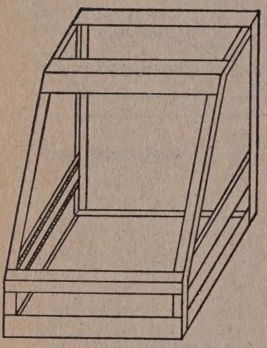
N Sliding Desk Top



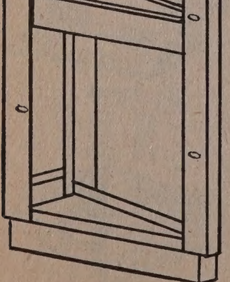
O Desk Top Drawer



P Shelf



Convertible Q



R 15° Wedge

ADD-A-RACK SERIES

Each assembly consists of frame, top, bottom, rear door and cowlings; used as an add-on unit to join any of the Series Sixty enclosures into a bank of two or more. One standard rack plus several Add-A-Racks make any desired number of racks combined for optimum width. Colors same as Inclined Racks.

FOR 19″ PANEL SPACE

Plain Door					Louvered Door				
Bud No.	For Add-on to Rack No.	Net Each, Lots of			Bud No.	For Add-on to Rack No.	Net Each, Lots of		
		1-2	3-4	5-7			1-2	3-4	5-7
60-2500	60-2300	$118.75	$106.90	$ 95.00	60-2900	60-2700	$117.45	$105.70	$ 93.95
60-2501	60-2301	139.15	125.25	111.30	60-2901	60-2701	143.10	128.80	114.50
60-2502	60-2302	152.50	137.25	122.00	60-2902	60-2702	156.75	141.10	125.40
60-2503	60-2303	166.30	149.65	133.05	60-2903	60-2703	171.30	154.15	137.05
60-2504	60-2304	186.00	167.40	148.80	60-2904	60-2704	191.25	172.15	153.00
60-2505	60-2305	207.25	186.55	165.80	60-2905	60-2705	213.15	191.85	170.50
60-2506	60-2306	222.60	200.35	178.10	60-2906	60-2706	228.85	205.95	183.10
60-2507	60-2307	132.90	119.60	106.30	60-2907	60-2707	134.55	121.10	107.65
60-2508	60-2308	155.70	140.15	124.55	60-2908	60-2708	158.05	142.25	126.45
60-2509	60-2309	170.05	153.05	136.05	60-2909	60-2709	174.30	156.85	139.45
60-2510	60-2310	185.70	167.15	148.55	60-2910	60-2710	190.30	171.25	152.25
60-2511	60-2311	207.55	186.80	166.05	60-2911	60-2711	212.65	191.40	170.10
60-2512	60-2312	231.15	208.05	184.90	60-2912	60-2712	237.15	213.45	189.70
60-2513	60-2313	255.85	230.25	204.70	60-2913	60-2713	262.15	235.95	209.70
60-2530	60-2330	177.15	159.45	141.70	60-2930	60-2730	179.20	161.30	143.35
60-2531	60-2331	188.85	169.95	151.10	60-2931	60-2731	193.50	174.15	154.80
60-2532	60-2332	188.85	169.95	151.10	60-2932	60-2732	193.50	174.15	154.80

SERIES SIXTY TURRETS (FIG. L)

Made of 16 gauge steel; designed so that any one of three sides may be attached to a Series Sixty upright rack or any horizontal surface. Accommodate standard 19″ panels. All mounting rails have universal spacing. Sides easily removed when a series of interconnecting turrets are desired. **Specify Color When Ordering:** Add suffix **GG** for dark gray; **BB** for dark blue; **HG** for gray hammertone. Order standard Bud panels with suffix **GY** for light gray; **BY** for light blue; **HG** for gray hammertone.

Bud No.	Width	Depth	Height	Panel Space			Wt., Lbs.	Net Each, Lots of		
				Sloping	Bottom	Rear		1-2	3-4	5-7
60-2364	22 1/16″	17⅞″	12 5/16″	17½″	14″	8¾″	17	$49.60	$44.65	$39.70
60-2365	22 1/16″	14⅜″	10 3/16″	12¼″	10½″	7″	14	41.40	37.25	33.10
60-2366	22 1/16″	20 13/16″	14⅜″	21″	17½″	10½″	20	52.15	46.95	41.70

SERIES SIXTY DRAWER, DESK TOP, AND SHELF ACCESSORIES

No. 60-2368 Drawer: Fits into any Series Sixty cabinet rack. Slides easily on nylon rollers. Will support heavy loads. Extends to full depth; stops prevent drawer from falling out. Slides easily attach to panel supporting rails. Silver anodized handles. Shipped completely assembled. **No. 60-2361 Sliding Desk Top:** Fits all Series Sixty racks. Has smooth Formica* surface for writing, servicing or inspection. Fits flush with front of unit. Usable area when fully extended, 11″ x 17⅝″. Occupies only 1¾″ of panel height. Will support 50 lbs. Ball-bearing slide mechanism mounts directly in Series Sixty racks; brackets included to fit other Bud cabinets and consoles. **No. 60-2363 Desk Top Drawer:** Fits Series Sixty racks. Has Formica surface. Fits flush with front of unit. Hinged desk top on drawer holds small tools or parts. Special front-panel latch both locks and releases drawer or top as desired. Mounts to cabinet U-braces; slides travel on nylon rollers. Hardware supplied. **No. 60-2380 and 60-2381 Shelves:** Ideal for support of chassis, power supplies or other equipment; also may be used as base plate for bottom support. Of one-piece 16 gauge steel with flanged front and rear for extra strength and rigidity. Easily bolted to cabinet U-braces. Will support 200 lbs. Hardware supplied.

Bud No.	Fig.	Size, Inches	Wt., Lbs.	Net Each, Lots of		
				1-2	3-4	5-7
60-2368†	M	16 19/32 x 6 11/32 x 19 13/64 inside	28	$63.00	$56.70	$50.40
60-2361†	N	17⅝ x 15⅛ x 1¾ with std. 19″ panel	9¼	27.90	25.10	22.30
60-2363†	O	16 9/16 x 2 31/32 x 14⅞ inside; 19 x 3½ front panel	19	77.70	69.95	62.15
60-2380‡	P	17 29/32 w. x 19 9/32″ d.	8¼	9.60	8.65	7.70
60-2381‡	P	17 29/32 w. x 22¾ d.	8½	10.05	9.05	8.05

*Synthane Corp. trademark. †Add suffix **GY** for light textured gray; **BY** for light textured blue; **WH** for white; **S** for sand; **HG** for gray hammertone. ‡Add suffix **GG** for dark textured gray; **BB** for dark textured blue; **WH** for white; **S** for sand; **HG** for gray hammertone.

SERIES SIXTY CONVERTIBLES (FIG. Q)

Affords optimum viewing angle when placed on a table or bench, or perched on top of a Series Sixty inclined panel cabinet rack. Max. access to the interior for installation of components or service is assured through sides, top, rear, bottom and front. Accepts standard 19″ panels in vertical and inclined panel spaces. Units assembled with lever type door handle, welded frame work, solid top, plain or louvered sides and/or rear door. Width, 24 1/16″; outside depth, 22″; clear inside depth, 20½″; vertical panel space, 3½″; all units. Available with dark gray body and light gray door or dark blue body and light blue door; **Specify Color When Ordering.**

Plain Sides and Door				Inclined Panel Height	Louvered Sides and Plain Door			
Bud No.	Net Each, Lots of				Bud No.	Net Each, Lots of		
	1-2	3-4	5-7			1-2	3-4	5-7
60-4600*	$206.50	$185.85	$165.20	10½″	60-4700*	$215.10	$193.60	$172.10
60-4601†	208.90	188.00	167.10	15¾″	60-4701†	218.85	196.95	175.10
60-4602‡	211.40	190.25	169.10	17½″	60-4702‡	221.25	199.15	177.00
Louvered Sides and Door					Plain Sides, Louvered Door			
60-4900*	$217.00	$195.30	$173.60	10½″	60-4800*	$211.40	$190.25	$169.10
60-4901†	219.75	197.80	175.80	15¾″	60-4801†	213.85	192.45	171.10
60-4902‡	223.10	200.80	178.50	17½″	60-4802‡	216.35	194.70	173.10

*Height, 22 25/32″; top opening, 18 5/16″ w. x 11 53/64″ d. †Height, 27 23/32″; top opening, 18 5/16″ w. x 10 1/32″ d. ‡Height, 29 23/64″; top opening, 18 5/16″ w. x 9 27/64″ d.

BUD WEDGES, CABINETS AND ACCESSORIES

SERIES SIXTY WEDGES

Helps in joining any number of Series Sixty upright or inclined panel units together to conform to any configuration or space requirement. These are quickly attached to the adjacent frame work by means of simple fasteners. Width, 7$\frac{3}{16}$″ (60-8300–60-8306); 8$\frac{3}{32}$″ (60-8307–60-8313); 18$\frac{9}{32}$″ (60-8400–60-8406); 20$\frac{61}{64}$″ (60-8407–60-8413). Available with dark gray frame and light gray panel or dark blue frame and light blue panel. **Specify Color When Ordering.**

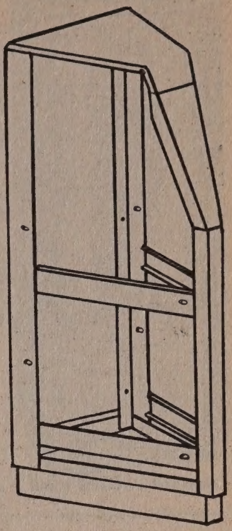
FOR UPRIGHT RACKS

15° WEDGES (Fig. R)				For Cabs. With		45° WEDGES (Fig. S)			
Bud No.	Net Each, Lots of			Panel Ht.	Outside Depth	Bud No.	Net Each, Lots of		
	1-2	3-4	5-7				1-2	3-4	5-7
60-8300	$ 87.10	$ 78.40	$ 69.70	21″	22″	60-8400	$ 95.25	$ 85.75	$ 76.20
60-8301	102.85	92.55	82.30	31½″	22″	60-8401	110.25	99.25	88.20
60-8302	112.60	101.35	90.10	42″	22″	60-8402	120.15	108.15	96.10
60-8303	124.25	111.85	99.40	52½″	22″	60-8403	130.10	117.10	104.10
60-8304	139.35	125.40	111.50	61¼″	22″	60-8404	147.40	132.65	117.90
60-8305	153.25	137.95	122.60	70″	22″	60-8405	161.35	145.20	129.10
60-8306	167.15	150.45	133.70	78¾″	22″	60-8406	174.65	157.20	139.70
60-8307	98.75	88.90	79.00	21″	25½″	60-8407	104.40	93.95	83.50
60-8308	114.40	102.95	91.50	31½″	25½″	60-8408	121.90	109.70	97.50
60-8309	127.75	115.00	102.20	42″	25½″	60-8409	135.85	122.25	108.70
60-8310	139.35	125.40	111.50	52½″	25½″	60-8410	147.40	132.65	117.90
60-8311	155.60	140.05	124.50	61¼″	25½″	60-8411	163.15	146.85	130.50
60-8312	174.65	157.20	139.70	70″	25½″	60-8412	182.35	164.10	145.90
60-8313	193.85	174.45	155.10	78¾″	25½″	60-8413	202.00	181.80	161.60

FOR INCLINED PANEL RACKS

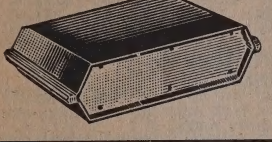
Width, 7$\frac{3}{16}$″ (15° wedges); 18$\frac{9}{32}$″ (45° wedges).

15° WEDGES (Fig. R)				For Vert. Panel Height	45° WEDGES (Fig. S)			
Bud No.	Net Each, Lots of				Bud No.	Net Each, Lots of		
	1-2	3-4	5-7			1-2	3-4	5-7
60-8330	$133.50	$120.15	$106.80	29¾″	60-8430	$139.90	$125.90	$111.90
60-8331	141.65	127.50	113.30	24½″	60-8431	149.75	134.80	119.80
60-8332	141.65	127.50	113.30	22¾″	60-8432	149.75	134.80	119.80



(S) **45° Wedge**

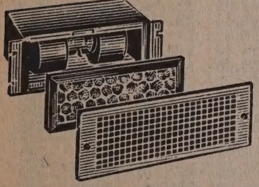
GRAND PRIX CABINETS



Excellent for audio equipment or wherever appearance is important. Match any decor. Upper and lower segments held together by aluminum extrusions. Body and panels of 20 gauge steel. Four rubber feet. Specify color by suffix: **GGY**, textured dark gray with light panel; **HG**, gray hammertone.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of		
			1-14	15-24	25-49
MD-1	4⅛ x 19¼ x 10½	7¼	$23.85	$21.45	$19.10
MD-2	7⅛ x 19¼ x 10½	7¾	24.90	22.40	19.90
MD-3	4⅛ x 12¼ x 8¾	7	19.25	17.35	15.40

TRANS-AIRE BLOWER



Ideal for use where excessive heat is generated by equipment in an enclosed rack, cabinet or console. Brings in fresh air or exhausts heated air, enabling use as an exhaust or intake blower, depending upon mounting position. Unit will operate in any position—vertical or horizontal. May be mounted to rails of standard cabinet or rack. Use of Bud Chassis Supporting Angles SA-1349, SA-1350 or CE-2219 is recommended when blower is mounted in rack or cabinet. Motor is rubber mounted. Thermal overload protection to prevent overheating. Automatic reset. Oil impregnated, disposable fiberglass filter can be changed without removing unit from cabinet. Air displacement shown is at 0° static pressure. Double shielded, permanently lubricated ball bearings. B-50, B-52 and B-54 are short-depth models with single speed; others, dual speed. Complete with filter, nickel-plated grille and 24″ three-wire cord. Light gray enamel finish.

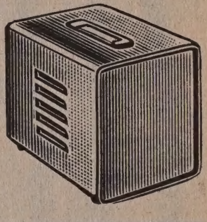
Bud No.	Size† D. x H.	Air c.f.m.		Motor		Filters
		High	Low	Watts	rpm	Bud No.
B-23A	12″ x 3½″	180	130	125/100	1450/1250	BF-24
B-25A	14½″ x 5¼″	350	160	375/200	1420/1075	BF-26
B-27A	14½″ x 7″	515	280	550/350	1350/1150	BF-28
B-50*	6$\frac{13}{32}$″ x 3½″	150	.....	80	3150	BF-24
B-52*	9$\frac{1}{32}$″ x 5¼″	150	.....	80	3000	BF-53
B-54*	10$\frac{3}{16}$″ x 7″	300	.....	60	1550	BF-55

*Brings in fresh air only. †All for standard 19″ rack.

TRANS-AIRE BLOWER AND FILTER PRICING

Bud No.	Net Each, Lots of			Bud No.	Net Each, Lots of		
	1-9	10-14	15-19		1-24	25-49	50-99
B-23A	$100.50	$ 90.45	$ 80.40	BF-24	$1.90	$1.70	$1.50
B-25A	114.75	103.30	91.80	BF-26	2.10	1.90	1.70
B-27A	128.90	116.00	103.10	BF-28	2.40	2.15	1.90
B-50	97.65	87.90	78.10	BF-53	2.10	1.90	1.70
B-52	100.90	90.80	80.70	BF-55	2.25	2.05	1.80
B-54	129.25	116.35	103.40				

PORTACAB INSTRUMENT CABINETS



Attractive, versatile cabinets desirable as housings for instrumentation requiring highly stylized appearance. Custom, quality look achieved in standard production models. Made entirely of aluminum to minimize weight. Flexible recessed handle permits easy portability as well as vertical stacking. Well louvered for adequate ventilation. Louvers point inward, permitting side-to-side placement of cabinets without space loss. Aluminum front panel recessed ½″. Welded back has opening. Perimeter of panel follows contour of body. Has four detachable rubber feet. Gray hammertone finish only.

Bud No.	Size, Inches W. x D. x H.	Wt., Lbs.	Bud Chassis	Net Each, Lots of		
				1-24	25-49	50-99
WA1540	6⅛ x 8 x 8	2	AC-402	$14.25	$12.85	$11.40
WA1541	8⅛ x 12 x 9	3½	AC-407	18.60	16.75	14.90
WA1542	10⅛ x 8 x 8	3¾	AC-406	16.60	14.90	13.25
WA1543	11⅛ x 18 x 11	5½	AC-416	23.00	20.70	18.40
WA1544	14⅛ x 18 x 12	8	AC-420	26.40	23.75	21.10

POWER OUTLET STRIPS

For racks or cabinets with a number of instruments requiring individual power sources. Steel raceways protect cords from damage. Mount vertically or horizontally; snap into clips in housing. Grounding-type receptacles rated 15 A at 125 V and spaced on 6″ centers except POS-4, designed for horizontal mounting. With pushbutton-reset overload breaker, 6-ft. cord and grounding plug. UL Recognized components. Light gray enamel finish.

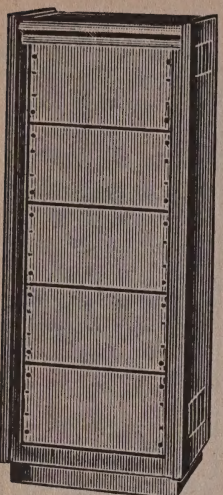
Bud No.	No. of Outlets	Length, Inches	Net Each, Lots of		
			1-5	6-11	12-17
POS-4	4	17½	$30.90	$27.80	$24.70
POS-7	7	48	32.55	29.30	26.05
POS-9	9	60	35.80	32.20	28.65
POS-11	11	72	39.00	35.10	31.20

"TEM-STAT" TEMPERATURE CONTROLS

Prevents costly damage to electronic components in enclosed cabinets, boxes, etc. Bimetal sensing element responds quickly to gradual or sudden temperature changes and actuates whatever warning device you use: Activates a light, bell, blower or other device; or, shuts off current. Activates snap-action, heavy duty, normally open switch contacts. High electrical ratings up to 300° F; fully adjustable temperature ranges. Screw terminals for easy attachment. UL Recognized. Small size, 2$\frac{15}{16}$″ lg. x 1″ w. x 1$\frac{7}{32}$″ d., suitable for limited space applications. **UL Rating:** 8 amps, full load, 115 VAC (48 amps, locked rotor). 100,000 cycles motor rating; derate 50% for 230 VAC. Full load 13.8 amps 120 VAC (82.8 amps, locked rotor). 6,000 cycles motor rating; derate 50% for 240 VAC. Pilot duty, 125 VA at 115/230 VAC; or, 250 mV or more.

Bud No. TS-15—80°–170° F. Net Each, Lots of 1–9.....**$7.20**
Net Each, Lots of: 10–14........**$6.50**; 15–19........ **5.75**

BUD Series 2000 Cabinet Racks



Upright Cabinet Rack

SERIES 2000 UPRIGHT CABINET RACKS

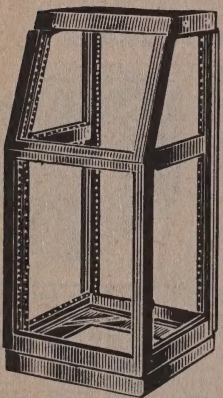
Modern rack enclosures combine the dramatic appearance of sheer, square lines with rugged Bud construction. Basic frame is all-welded with 14 gauge steel members; 18 gauge steel door, sides and top. "U" braces welded to sides of frame augment its strength and rigidity and act as a mounting for the vertical rails, which can be horizontally adjusted. Front panel mounting rails are tapped 10-32; rear rails are pierced 9⁄32″ dia. Caster bracket in base accepts Bud RC-7758 casters. All cabinets accept standard 19″ panels. Shipped completely assembled. Width, 24 3⁄16″. Available in royal blue or gray textured enamel with clear anodized aluminum cowl, or gold textured enamel with gold anodized aluminum cowl. **Specify Color When Ordering.** **30″ deep racks also available; prices on request.**

23 7⁄8″ OUTSIDE DEPTH—20½″ CLEAR INSIDE DEPTH

With Plain Sides and Door				Size, Inches			With Louvered Sides and Door			
Bud No.	Net Each, Lots of 1-2	3-4	5-7	Ht.	Panel Space	Wt., Lbs.	Bud No.	Net Each, Lots of 1-2	3-4	5-7
E-2000	$150.70	$135.65	$120.55	30¼	21	125	E-2016	$161.55	$145.40	$129.25
E-2001	186.40	167.75	149.10	40¾	31½	150	E-2017	194.40	174.95	155.50
E-2002	196.75	177.10	157.40	44¼	35	155	E-2018	206.10	185.50	164.90
E-2003	207.10	186.40	165.70	51¼	42	167	E-2019	217.90	196.10	174.30
E-2004	230.40	207.35	184.30	61¾	52½	205	E-2020	249.00	224.10	199.20
E-2005	255.60	230.05	204.50	70½	61¼	219	E-2021	271.05	243.95	216.85
E-2006	283.95	255.55	227.15	79¼	70	240	E-2022	301.00	270.90	240.80
E-2007	310.05	279.05	248.05	88	78¾	262	E-2023	326.95	294.25	261.55

27 3⁄8″ OUTSIDE DEPTH—24″ CLEAR INSIDE DEPTH

With Plain Sides and Door				Size, Inches			With Louvered Sides and Door			
Bud No.	Net Each, Lots of 1-2	3-4	5-7	Ht.	Panel Space	Wt., Lbs.	Bud No.	Net Each, Lots of 1-2	3-4	5-7
E-2008	$178.05	$160.25	$142.45	30¼	21	135	E-2024	$184.50	$166.05	$147.60
E-2009	206.70	186.05	165.35	40¾	31½	160	E-2025	222.85	200.55	178.30
E-2010	218.20	196.40	174.55	44¼	35	165	E-2026	235.60	212.05	188.50
E-2011	229.75	206.80	183.80	51¼	42	187	E-2027	248.20	223.40	198.55
E-2012	254.95	229.45	203.95	61¾	52½	222	E-2028	275.85	248.25	220.70
E-2013	283.35	255.00	226.70	70½	61¼	235	E-2029	306.60	275.95	245.30
E-2014	314.80	283.30	251.85	79¼	70	265	E-2030	340.50	306.45	272.40
E-2015	343.60	309.25	274.90	88	78¾	380	E-2031	371.05	333.95	296.85



Inclined Panel Cabinet Rack

SERIES 2000 INCLINED PANEL CABINET RACKS

Same modern styling and rugged construction as upright racks above, with 20° inclined panel for comfortable viewing of mounted instruments. Panel mounting rails in front vertical and inclined panel sections, as well as in the rear, are adjustable front-to-rear. Height, 51¼″; width, 24 3⁄16″; outside depth, 23 7⁄8″; clear inside depth, 20½″. Weight, 173 lbs. Available in same textured finishes as above. **Specify Color When Ordering.** **30″ deep racks also available; prices on request.**

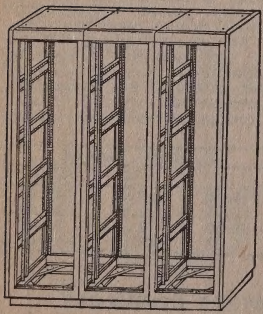
With Plain Sides and Door				Inclined Panel Space	Vertical Panel Space	With Louvered Sides and Door			
Bud No.	Net Each, Lots of 1-2	3-4	5-7			Bud No.	Net Each, Lots of 1-2	3-4	5-7
SE-2064	$205.30	$184.75	$164.25	10½″	29¾″	SE-2067	$220.60	$198.55	$176.50
SE-2065	217.60	195.85	174.10	15¾″	24½″	SE-2068	233.50	210.15	186.80
SE-2066	217.60	195.85	174.10	17½″	22¾″	SE-2069	233.50	210.15	186.80

ADD-A-RACKS AND ACCESSORIES FOR SERIES 2000

ADD-A-RACK SERIES FOR UPRIGHT CABINETS

Used as an add-on unit to join Series 2000 upright racks into a bank of two or more. Each assembly consists of a frame, top, bottom, rear door and cowlings. One standard rack must be used, plus any number of Add-A-Rack units. **Specify Color When Ordering**; same as above racks.

With Plain Door					With Louvered Door					
Bud No.	For Add-on to Rack	Net Each, Lots of 1-2	3-4	5-7	Bud No.	For Add-on to Rack	Net Each, Lots of 1-2	3-4	5-7	Wt., Lbs.
AE-2032	E-2000	$128.25	$115.45	$102.60	AE-2048	E-2016	$133.35	$120.00	$106.70	90
AE-2033	E-2001	150.25	135.25	120.20	AE-2049	E-2017	154.50	139.05	123.60	110
AE-2034	E-2002	157.35	141.60	125.90	AE-2050	E-2018	161.85	145.65	129.50	113
AE-2035	E-2003	164.65	148.20	131.70	AE-2051	E-2019	169.20	152.30	135.35	115
AE-2036	E-2004	179.85	161.85	143.90	AE-2052	E-2020	184.90	166.40	147.90	145
AE-2037	E-2005	200.80	180.70	160.65	AE-2053	E-2021	206.50	185.85	165.20	148
AE-2038	E-2006	210.75	189.70	168.60	AE-2054	E-2022	229.60	206.65	183.70	152
AE-2039	E-2007	240.30	216.25	192.25	AE-2055	E-2023	247.00	222.30	197.60	158
AE-2040	E-2008	143.40	129.05	114.70	AE-2056	E-2024	145.30	130.75	116.25	120
AE-2041	E-2009	168.00	151.20	134.40	AE-2057	E-2025	170.65	153.60	136.50	130
AE-2042	E-2010	175.90	158.30	140.70	AE-2058	E-2026	179.40	161.45	143.50	135
AE-2043	E-2011	181.90	163.70	145.50	AE-2059	E-2027	188.20	169.40	150.55	138
AE-2044	E-2012	200.40	180.35	160.30	AE-2060	E-2028	205.45	184.90	164.35	142
AE-2045	E-2013	224.05	201.65	179.25	AE-2061	E-2029	229.60	206.65	183.70	164
AE-2046	E-2014	249.45	224.50	199.55	AE-2062	E-2030	256.00	230.40	204.80	168
AE-2047	E-2015	276.10	248.50	220.90	AE-2063	E-2031	283.00	254.70	226.40	172



Add-A-Rack

ADD-A-RACK SERIES FOR INCLINED PANEL CABINETS

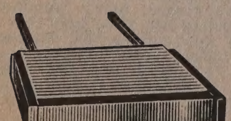
With Plain Door					With Louvered Door					
Bud No.	For Add-on to Rack	Net Each, Lots of 1-2	3-4	5-7	Bud No.	For Add-on to Rack	Net Each, Lots of 1-2	3-4	5-7	Wt., Lbs.
ASE-2084	SE-2064	$173.80	$156.40	$139.05	ASE-2087	SE-2067	$175.80	$158.20	$140.65	115
ASE-2085	SE-2065	185.35	166.80	148.30	ASE-2088	SE-2068	189.90	170.90	151.90	115
ASE-2086	SE-2066	185.35	166.80	148.30	ASE-2089	SE-2069	189.90	170.90	151.90	120

ACCESSORY FRONT DOORS FOR UPRIGHT CABINETS

Plain Type				For Vertical Panel Space of	Wt., Lbs.	Louvered Type			
Bud No.	Net Each, Lots of 1-2	3-4	5-7			Bud No.	Net Each, Lots of 1-2	3-4	5-7
E-9000	$22.50	$20.25	$18.00	21″	15	E-9020	$25.80	$23.20	$20.65
E-9001	27.85	25.05	22.30	31½″	18	E-9021	32.05	28.85	25.65
E-9002	29.35	26.40	23.50	35″	19	E-9022	33.75	30.40	27.00
E-9003	30.90	27.80	24.70	42″	23	E-9023	35.55	32.00	28.45
E-9004	34.45	31.00	27.55	52½″	27	E-9024	39.30	35.35	31.45
E-9005	37.95	34.15	30.35	61¼″	29	E-9025	43.90	39.50	35.10
E-9006	44.40	39.95	35.50	70″	31	E-9026	48.70	43.85	38.95
E-9007	46.05	41.45	36.85	78¾″	33	E-9027	53.25	47.95	42.60

ACCESSORY FRONT DOORS FOR INCLINED PANEL CABINETS

Plain Type				For Vertical Panel Space of	Wt., Lbs.	Louvered Type			
Bud No.	Net Each, Lots of 1-2	3-4	5-7			Bud No.	Net Each, Lots of 1-2	3-4	5-7
E-9008	$27.90	$25.10	$22.30	29¾″	11	E-9028	$32.10	$28.90	$25.70
E-9009	25.95	23.35	20.75	24½″	10½	E-9029	30.10	27.10	24.10
E-9010	25.50	22.95	20.40	22¾″	9	E-9030	29.10	26.20	23.30



Desk Top

DESK TOPS FOR SERIES 2000 CABINET RACKS

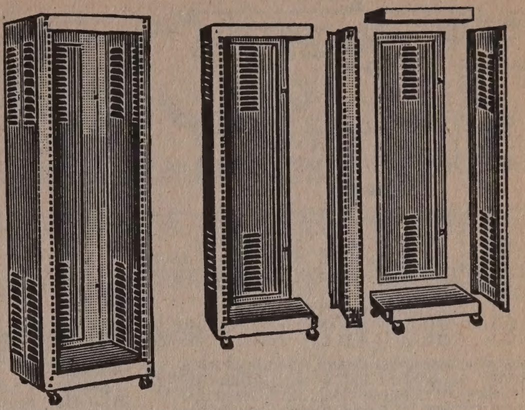
Provides a smooth writing surface or shelf on upright or inclined panel cabinet rack. Two pre-slotted supporting channels bolt to panel mounting rails. Antique white Formica* surface. Supports over 200 lbs. **Size:** 24 3⁄16″ wide, 19½″ deep, 3 1⁄16″ high. Specify gray, royal blue or gold textured enamel finish.

Bud No.	Fits Cabinet with Depth of	Supporting Channel	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
DT-2960	23 7⁄8″	21 9⁄32″	29	$50.95	$45.85	$40.75
DT-2962	27 3⁄8″	24 25⁄32″	30	52.60	47.35	42.10

*Registered Synthane Corp. trademark.

BUD Relay Racks

DELUXE RELAY RACKS WITH ADD-A-RACK



High quality relay racks made of 16-gauge steel with 7/64″ panel supports. Panel mounting supports are recessed so that no panel edges will be exposed. Both back and sides are fully louvered for best ventilation. Snap catches are positioned on the door. Rounded corners give streamlined appearance. Base constructed with four special supports so that casters may be applied to base directly for mobility. Racks are 22″ wide to accept all standard 19″ panels.

Super Deluxe Series Relay Racks are equipped with adjustable panel mounting supports permitting forward and backward adjustment of panels for more efficient use of space. Adjustable points are at 1″ intervals for 9″ to 15″ clearance behind panels. Super Deluxe Racks are fitted with both front and rear doors, the rear to cover any equipment behind the panel while making it easily accessible. The front door, not louvered, conceals controls on the front panel.

Add-A-Rack Series—Where relay racks are to be joined in series. Provides additional strength and improved appearance. Includes door, top, bottom and coupling unit, all that is needed to make a double relay rack out of a single Deluxe series.

All Racks Listed are shipped knocked-down with all necessary hardware and assembly instructions. Casters optional. When ordering specify finish. Add suffix **"HG"** for gray hammertone; suffix **"GR"** for gray rinkletex; suffix **"BR"** for black rinkletex.

SUPER DELUXE TWO-DOOR RACKS WITH 19″ WIDE PANEL SPACE

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Height, Overall	Panel Space		1-9	10-14	15-19
CR-2174	42 1/16	36¾	102	**$100.85**	**$ 90.75**	**$ 80.70**
CR-2171	47 5/16	42	104	**108.90**	**98.00**	**87.10**
CR-2172	66 9/16	61¼	138	**140.60**	**126.55**	**112.50**
CR-2175	75 5/16	70	150	**151.15**	**136.05**	**120.90**
CR-2173	82 5/16	77	163	**168.75**	**151.90**	**135.00**

ADD-A-RACK ASSEMBLIES

Includes door, top, bottom and coupling unit for add-on use with racks indicated.

Bud No.	For Use With Rack No.	Wt., Lbs.	Net Each, Lots of		
			1-9	10-14	15-19
AR-1778	CR-1774	70	**$ 78.10**	**$ 70.30**	**$ 62.50**
AR-1775	CR-1771	74	**83.10**	**74.80**	**66.50**
AR-1776	CR-1772	100	**103.25**	**92.95**	**82.60**
AR-1779	CR-1780	107	**109.15**	**98.25**	**87.30**
AR-1777	CR-1773	113	**126.85**	**114.15**	**101.50**
AR-2278	CR-2074	102	**86.85**	**78.15**	**69.50**
AR-2275	CR-2071	86	**98.10**	**88.30**	**78.50**
AR-2276	CR-2072	110	**122.85**	**110.55**	**98.30**
AR-2279	CR-2075	120	**123.25**	**112.80**	**100.30**
AR-2277	CR-2073	130	**149.50**	**134.55**	**119.60**

DELUXE RELAY RACKS WITH 19″ WIDE PANEL SPACE

17⅛″ Overall Depth

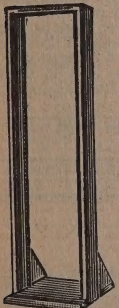
Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Height, Overall	Panel Space		1-9	10-14	15-19
CR-1774	42 1/16	36¾	82	**$ 79.60**	**$ 71.65**	**$ 63.70**
CR-1771	47 5/16	42	92	**90.00**	**81.00**	**72.00**
CR-1772	66 9/16	61¼	115	**112.65**	**101.40**	**90.10**
CR-1780	75 5/16	70	125	**115.60**	**104.05**	**92.50**
CR-1773	82 5/16	77	135	**129.75**	**116.80**	**103.80**

EXTRA DEEP DELUXE RACKS WITH 19″ WIDE PANEL SPACE

Same as above, except 22⅛″ deep instead of 17⅛″ deep.

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Height, Overall	Panel Space		1-9	10-14	15-19
CR-2074	42 1/16	36¾	98	**$ 95.50**	**$ 85.95**	**$ 76.40**
CR-2071	47 5/16	42	102	**111.65**	**100.50**	**89.30**
CR-2072	66 9/16	61¼	137	**135.35**	**121.80**	**108.30**
CR-2075	75 5/16	70	148	**137.85**	**124.05**	**110.30**
CR-2073	82 5/16	77	159	**160.60**	**144.55**	**128.50**

DELUXE TELEPHONE-TYPE RELAY RACKS



Sturdy open rack with extra strength and greater capacity. Upright U-member is unitize-welded with ventilation provided at top. Two panel-mounting rails, at front and rear, tapped 10-32 with W.E. spacing. Made of 12 ga. steel throughout. Chassis-type base drilled for RC-7756 casters. Triangular brackets hold uprights to base; holes provided on both sides for bolting racks together in "Add-A-Rack" manner. Add suffix **HG** for gray hammertone finish; **BR** for black rinkletex; **GY** for gray rinkletex. Racks have 20⅞″ base width and take 19″ wide panels.

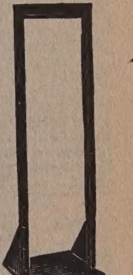
Bud No.	Size, Inches		Net Each, Lots of		
	Height, Overall	Panel Space	1-9	10-14	15-19
RR-1367	64⅝	61¼	**$73.35**	**$66.00**	**$58.70**
RR-1368	73⅜	70	**78.90**	**71.00**	**63.10**
RR-1369	80⅜	77	**87.75**	**79.00**	**70.20**

RACK SHELVES

Heavy gauge steel shelves with 1″ flange for rigidity and strength. Mount on chassis supporting angles in rack to hold power supplies, modulators, etc. Width 19″. Black enamel finish.

Bud No.	Depth, Inches	Weight, Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
CB-1976	15	6	**$5.65**	**$5.10**	**$4.50**
CB-1977	12	5	**4.50**	**4.05**	**3.60**

TELEPHONE-TYPE RELAY RACKS



Heavy Duty Model RR-1265: Two 3½″ x 5″ x ¼″, 20⅜″ long angles form base. Steel channels are 3″ x 1⅜″, 71 29/32″ long. Cross bars are ⅛″ x 2 3/32″ angles. Panel holes tapped 12-24 with W.E. space. Black rinkletex finish only. Usually bolted to floor. **Standard Models:** 3″ channels and crossbars of 7/64″ steel. Base has chassis type bottom with side angles. Base drilled for RC-7756 casters. Suffix **BR**, black rinkletex; **HG**, gray hammertone.

FOR 19″ WIDE PANELS

Bud No.	Size, Inches		Net Each, Lots of		
	Height, Overall	Panel Space	1-9	10-14	15-19
RR-1263	35 39/64	31½	**$35.90**	**$32.30**	**$28.70**
RR-1363	40 55/64	36¾	**35.60**	**31.15**	**27.70**
RR-1264	70 39/64	66½	**41.10**	**37.00**	**32.90**
RR-1364	75 55/64	71¾	**43.15**	**38.85**	**34.50**
RR-1366	81 7/64	77	**47.25**	**42.55**	**37.80**
RR-1265	72 5/32	66½	**95.50**	**85.95**	**76.40**

TABLE-MOUNT TELEPHONE RACK

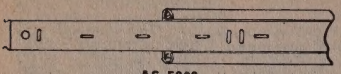
Sturdy rack with chassis type base mounts heavy components on table where enclosures are not required. Panel mount rails recessed for flush mount of 19″ panels. Shipped knocked down. Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**).

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Height, Overall	Panel Space		1-14	15-24	25-34
RR-1248	24	21	14¼	**$16.50**	**$14.85**	**$13.20**
RR-1249	31	28	16¾	**19.50**	**17.55**	**15.60**

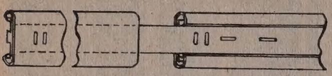
Ask Us for Quantity Prices

BUD Racks and Accessories

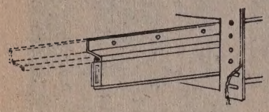
PRECISION SLIDING MECHANISMS



AS-5060



AS-5020



AS-5080

All steel commercial design provides a wide variety of models for a wide range of purposes. Provides smooth, light telescoping movement with unsurpassed reliability and minimal wear. **Specifications:** Slide members and component parts made from work hardened, cold rolled steel; bearings are nickel-plated carburized steel. Electro-zinc plate finish; grease is high-low temperature type. **Mounting:** Units require 2 each BAS-5100 front mounting brackets and 2 each BAS-5101 rear mounting brackets per pair to attach slides to EIA rails. One each NAS-5110 rail bar nut used with each mounting bracket.

2 MEMBER, ¾ EXTENSION FRICTION DISCONNECT

Bud Number	Slide Length, Inches	Slide Travel, Inches	Load Rating, Lbs.	Net per Pair, Lots of 1-4	5-9	10-24
AS-5000	12	9	108	$11.70	$10.55	$ 9.35
AS-5001	16	12	95	13.60	12.25	10.90
AS-5002	20	15	82	14.80	13.30	11.85

POSITIVE STOP

Bud Number	Slide Length, Inches	Slide Travel, Inches	Load Rating, Lbs.	1-4	5-9	10-24
AS-5060	12	9	108	$10.75	$ 9.70	$8.60
AS-5061	16	12	95	11.55	10.40	9.25
AS-5062	20	15	82	12.15	10.95	9.70

3 MEMBER, FULL EXTENSION POSITIVE STOP

Bud Number	Slide Length, Inches	Slide Travel, Inches	Load Rating, Lbs.	1-4	5-9	10-24
AS-5020	12	12.88	175	$27.75	$25.00	$22.20
AS-5021	16	16.88	160	30.85	27.75	24.70
AS-5022	20	20.88	142	33.30	29.95	26.65

POSITIVE W/FRONT DISCONNECT, ⅜ SIDE SPACE

Bud Number	Slide Length, Inches	Slide Travel, Inches	Load Rating, Lbs.	1-4	5-9	10-24
AS-5040	12	11.88	120	$36.75	$33.10	$29.40
AS-5041	16	15.88	108	39.85	35.85	31.90
AS-5042	20	19.88	92	42.60	38.35	34.10

DUAL MEMBER W/DRAWER SECTION, FULL EXTENSION AND LIFT-OFF DISCONNECT

Drawer section lengths are equal to slide lengths. Provides full extension in ⅜″ side space. Equipped with stationary front, and adjustable rear mounting brackets for EIA rails. Chassis mounts to drawer section. Removable by lining up open slot in drawer section over tab in moving member and lifting off.

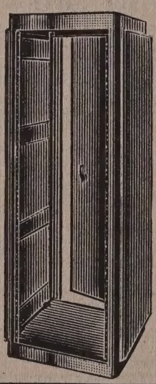
Bud Number	Slide Length, Inches	Slide Travel, Inches	Load Rating, Lbs.	1-4	5-9	10-24
AS-5080	12	12	80	$33.75	$30.40	$27.00
AS-5081	16	16	70	34.50	31.05	27.60
AS-5082	20	20	60	37.95	34.15	30.35

MOUNTING BRACKETS

Bud No.	Description	Net Each, Lots of 1-4	5-9	10-24	Bud No.	Description	Net Each, Lots of 1-4	5-9	10-24
BAS-5100	Front bracket	$1.50	$1.35	$1.20	BAS-5103	Rear bracket*	$1.50	$1.35	$1.20
BAS-5101	Rear bracket	1.50	1.35	1.20	NAS-5110	Bar nut	1.50	1.35	1.20
BAS-5102	Front bracket*	1.50	1.35	1.20	SB-5107	Adapter kit†	3.60	3.25	2.90

*For use with 3 member front disconnect types only. †For use with Series 2000, 60 and Classic II.

PRESTIGE BALL CORNER RACKS



Attractive, practical housing for permanent or mobile instrumentation. Standard Prestige relay rack consists of framework, top, bottom, two ball cornered sides, and a ball corner door. Sides attach to frame by means of a tongue-and-slot arrangement at bottom and two screws at top. Sides easily removable for access. Drilled and tapped panel mounting rails on all four vertical members of frame. Doors mount from either left or right side. Slotted base takes ball-cornered side panels on any of the four sides. Door and side clearance permits covering of equipment without damage to knobs or controls. Provision made for recessed casters. Extra doors available for placing on any of the sides. Knockout holes provided for attaching two or more units together. Bottom will support 500 lbs., panel rails 200 lbs. suspended vertically between rails. Units take Bud SD-1717 sliding drawer assembly or 60-2368 drawer. Shipped knocked-down, with necessary assembly hardware. **Gray hammertone finish only. Furnished with adjustable panel mounting rails.**

Bud No.	Size, Inches Overall Height	Panel Space	Net Each, Lots of 1-9	10-14	15-19
CR-2280	66 9/16	61¼	$187.60	$168.85	$150.10
CR-2281	71 13/16	66½	192.25	173.05	153.80
CR-2282	82 5/16	77	216.10	194.50	172.90

EXTRA DOORS FOR ABOVE

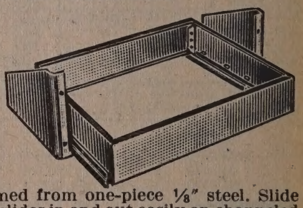
Bud No.	For Use With	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
DR-2290	Door for CR-2280	28	$21.50	$19.35	$17.20
DR-2291	Door for CR-2281	33	25.15	22.65	20.10
DR-2292	Door for CR-2282	39	28.25	25.45	22.60

PRESTIGE ADD-A-RACKS

Where relay racks are to be joined in series the Add-A-Rack assembly is lower in cost yet provides additional strength and improved appearance. Consists of top, bottom, rear door and framework. Made of 16 gauge steel. Extra ball corner doors will fit adjustable panel mounting rails which are recessed so that panel will be flush with face of rack. Add-A-Racks may be added at any time as needed. Gray hammertone finish.

Bud No.	Used to Add-A-Rack to	Net Each, Lots of 1-9	10-14	15-19
AR-2284	CR-2280	$141.90	$127.70	$113.50
AR-2286	CR-2281	153.35	138.00	122.70
AR-2287	CR-2282	172.15	154.95	137.70

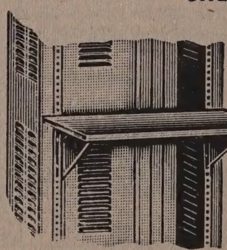
SLIDING DRAWER ASSEMBLY



Ideal for use as a record player mounting base, typewriter base, apparatus and instrument base, writing desk, etc. Installs quickly and simply in any standard rack. Can't fall out or tilt. Provides a completely safe mounting base for anything put on it. Ball bearing suspension for easy sliding. Chassis formed from one-piece 14 gauge aluminum; electro-welded. Support brackets formed from one-piece ⅛″ steel. Slide rail fastens securely to chassis, slides in and out easily on channeled ball bearings. Stop screw on slide rail prevents drawer from falling out of channel. Support brackets finished in black, channel finished in natural aluminum; chassis, slide and plate finished in light gray hammertone. Will support up to 30 lbs. **Chassis Size:** 16¾″ x 14″ x 3″, with ½″ flange top and bottom. Drawer plate fastens to top or bottom.

Bud No.	Description	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
SD-1717	Sliding drawer	5	$20.65	$18.60	$16.50
TP-1718	Drawer plate	1½	5.00	4.50	4.00

SHELF ASSEMBLY

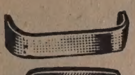


Immediately adds extra utility to a standard rack at very little cost. Useful as a desk, work space, etc. Gray or black rinkletex finish or gray hammertone finish will match all standard Bud rack finishes. Can't fall off or tilt; will support any reasonable weight. Shelf portion supported by two brackets, punched to fit standard panel mounting strips. No panel support needed but can be attached over panel if desired. Slides welded to bottom of shelf; mounting brackets slip into slides and fasten with two screws. All necessary hardware furnished. Formed of 16 gauge steel; ⅝″ flange on all three sides; overall height, 7⅛″. Brackets are 7″ high. Specify black rinkletex (suffix **BR**), gray rinkletex (suffix **GR**), or light gray hammertone (suffix **HG**) finish.

Bud No.	Size, Inches D. x W.	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
SA-1719	16 x 22	13¼	$16.60	$14.95	$13.30
SA-1720	20 x 22	15¼	16.75	15.10	13.40

BUD Cabinet Hardware, Brackets

BUD HANDLES

A


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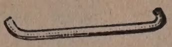

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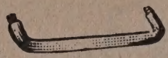

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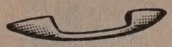

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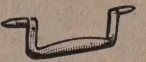

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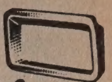

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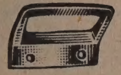

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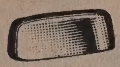

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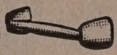

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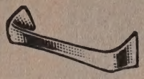

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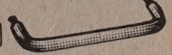

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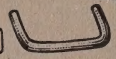


Fabricated from steel, brass or cast aluminum. Durable finish provides long wear and attractive appearance. Skin packed in pairs or bulk packed (priced singly) with all necessary mounting hardware. Designed for rugged applications, they have unlimited use in electronic, electrical and other fields.

Bud No.	Fig.	Description	Net per Pair, Lots of			Bulk Pack:* Net Ea., Lots of		
			1-49	50-99	100-149	1-99	100-199	200-499
H-9100	A	1″ x ¼″ chrome plated solid brass; 4″ x ½″ mtg. centers; 1″ hand clearance; four ½″ x 6-32 threaded screws	$ 9.15	$ 8.25	$ 7.30	$3.75	$3.40	$3.00
H-9101	A	Same, but 8″ x ½″ mtg. centers	13.90	12.50	11.10	6.10	5.50	4.90
H-9102	A	⅝″ x ¼″ chrome plated solid brass; 4″ mtg. centers; 1″ hand clearance; two ½″ x 6-32 threaded screws	7.15	6.45	5.70	3.35	3.00	2.70
H-9103	A	Same, but has 6″ mounting centers	8.35	7.50	6.70	3.75	3.40	3.00
H-9110	B	⅜″ steel rod angular formed, chrome plated; 6″ mtg. centers; 1¼″ hand clearance; two ½″ x 10-32 screws	6.25	5.65	5.00	2.15	1.95	1.70
H-9111	B	⅜″ steel rod, chrome plated, 4″ mtg. centers; 1″ hand clearance; two ½″ x 10-32 threaded screws	3.35	3.00	2.70	1.50	1.35	1.20
H-9112	B	6″ mtg. center version of H-9111	3.75	3.40	3.00	1.65	1.50	1.30
H-9113	B	8″ mtg. center version of H-9111	4.25	3.85	3.40	1.75	1.60	1.40
H-9114	B	½″ steel rod, chrome plated; 8″ mtg. centers; 1½″ hand clearance; two ½″ x ¼-28 thd. screws	6.90	6.20	5.50	2.50	2.25	2.00
H-9115	C	⅜″ steel rod, chrome plated; 4″ mtg. centers; 1⁵⁄₁₆″ hand clearance; two ¼-28 thd. nuts	5.25	4.75	4.20	2.00	1.80	1.60
H-9116	C	Same, but has 6″ mtg. centers	5.85	5.25	4.70	2.15	1.95	1.70
H-9120	D	Silver-anodized diecast aluminum; 4⅜″ inside, 5⅜″ outside mtg. centers; 1″ hand clearance; four ½″ x 6-32 threaded screws	8.10	7.30	6.50	3.50	3.15	2.80
H-9121	D	Same, except chrome plated alloy	10.10	9.10	8.10	4.40	3.95	3.50
H-9123	D	Similar to H-9120 but 4½″ mtg. centers; 1″ hand clearance; two ½″ x 10-32 thd. screws	5.35	4.80	4.30	2.15	1.95	1.70
H-9122	E	Silver-anodized diecast aluminum; hinged on ¼″ steel pins with 2 hinge blocks; 6½″ inside, 7¼″ outside mtg. centers; 1½″ hand clearance; four ⅜″ x 10-32 threaded screws	13.60	12.25	10.90	6.10	5.50	4.90
H-9130	F	Silver-anodized diecast aluminum; 3″ mtg. centers; two ⅜″ x 10-32 thd. screws; size 4¹⁵⁄₁₆″ x 3″	11.15	10.05	8.90	5.10	4.60	4.10
H-9131	G	Silver-anodized diecast aluminum; size, 4″ x 2⅞″; 2¼″ mtg. centers; two ¾″ x ¼-28 thd. raised, countersunk screws and nuts	7.90	7.10	6.30	3.50	3.15	2.80
H-9140	H	Silver-anodized diecast aluminum; 3½″ mtg. centers; ¾″ hand clearance; two ½″ x 10-32 threaded screws	4.65	4.20	3.70	2.00	1.80	1.60
H-9149	......	5¾″ x 3¹³⁄₁₆″ black shell, chrome handle; flip-up and out handle lies flat in frame when not in use; for Classic Series cabinets; four 8-32 x ½″ countersunk screws with nuts	15.45	13.85	12.35	6.90	6.20	5.50
H-9150	I	Silver-anodized diecast aluminum; 4″ x ⅝″ mtg. centers; 1¼″ hand clearance; four ½″ x 10-32 threaded screws	6.65	6.00	5.30	2.90	2.60	2.30
H-9151	J	Silver-anodized diecast aluminum; 5⁵⁄₃₂″ x ⅝″ mtg. centers; 1⅜″ hand clearance; four ½″ x 10-32 threaded screws	10.90	9.80	8.70	4.65	4.20	3.70
H-9152	J	Similar to above except 3⅞″ mtg. centers; 1⅛″ hand clearance; two ½″ x 10-32 threaded screws	8.85	7.95	7.10	3.85	3.45	3.10
H-9160	K	Chrome plated ⅜″ steel rod; 3½″ mtg. centers; 1¹¹⁄₁₆″ hand clearance; two ¼″-28 hex nuts	5.75	5.20	4.60	2.15	1.95	1.70
H-9161	K	Same, but with 5¼″ mounting centers	6.40	5.75	5.10	2.15	1.95	1.70
H-9162	K	Same, but with 7″ mounting centers	6.65	6.00	5.30	2.40	2.15	1.90
H-9163	K	Same, but with 8¾″ mounting centers	6.90	6.20	5.50	2.50	2.25	2.00
H-9164	K	Same, but with 10½″ mounting centers	7.85	7.05	6.30	2.65	2.40	2.10
H-9165	K	Same, but with 12¼″ mounting centers	8.50	7.65	6.80	2.90	2.60	2.30
H-9166	L	Chrome plated ¼″ brass rod; 1²⁹⁄₃₂″ mtg. centers; 1″ hand clearance; two ½″ x 6-32 thd. screws	2.65	2.40	2.10	1.15	1.05	.90
H-9168	L	Same, but 3″ mtg. centers; two ½″ x 6-32 thd. screws	2.85	2.55	2.30	1.15	1.05	.90

*Number shown is for skin packed pairs. For bulk packed handles (priced singly), add suffix **B** to number (example: H-9100**B**).

TRUCK CASTERS

Use with all Bud relay racks and other floor mounted units. Ball bearing wheels are hard tread composition. **RC-7756** is for heavy duty applications; **RC-7758** is for extra heavy duty use (Series 60 Racks).

Bud No.	Height	Weight (Set of 4)	Net Each, Lots of		
			1-24	25-49	50-99
RC-7756	2⅝″	1¾ lbs.	$1.50	$1.35	$1.20
RC-7758	3¼″	6 lbs.	4.00	3.60	3.20

DOOR HANDLES, CATCH SETS

No. H-9347: Fits flush with cabinet door; exposed parts chrome plated. **Nos. H-3360 and HL-3361:** Lever-type handles are satin chrome plated with steel spindle and cam; fit Super Deluxe racks.

Bud No.	Description	Net Each, Lots of		
		1-49	50-99	100-149
H-3360	Non-locking handle	$6.25	$5.65	$5.00
HL-3361	3360 with lock and key	9.50	8.55	7.60
H-9347	Flush-mount catch set	1.90	1.70	1.50

RUBBER FEET

No. F-7264A: Has recessed head with mounting stud; rubber portion ¹⁵⁄₁₆″ x ¹¹⁄₃₂″ thick. **No. F-8038:** May be applied to any surface; ¾″ dia. x ⅛″ thick self adhesive sponge rubber pad. **No. F-9653:** Press-fit type for ⁷⁄₁₆″ hole.

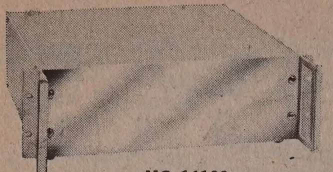
Bud No.	Description	Net per 100, Lots of		
		1-99	100-199	200-299
F-7264A	High grade black rubber	$13.90	$12.50	$11.10
F-8038	Sponge rubber pad	3.40	3.05	2.70
		1-49	50-99	100-149
F-9653	Top grade gray rubber	$6.65	$6.00	$5.30

SPEAKER ENCLOSURE HANDLES

Attach to any small housing or speaker enclosure to achieve portability. Made of aluminum tubing with etched finish.

Bud No.	Length, Inches	Mtg. Ctrs., Inches	Net Each, Lots of		
			1-49	50-99	100-149
UH-70A	5⅛	4⅝	$0.85	$0.75	$0.70
UH-71A	3¾	3¼	.75	.70	.60

BUD NEW SHOWCASE AND INSTRUMENT CABINETS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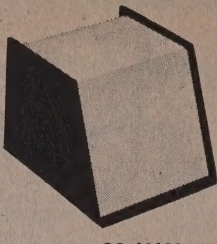
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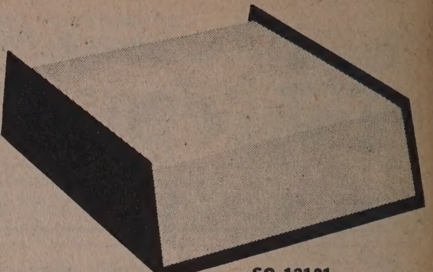
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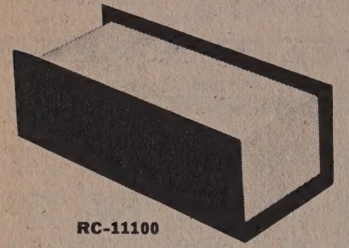
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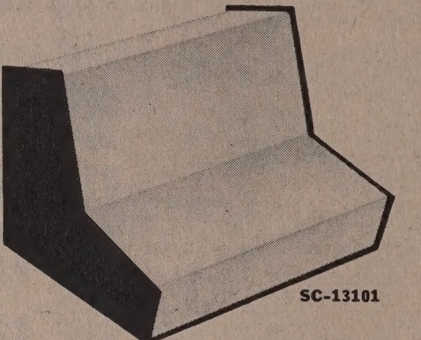
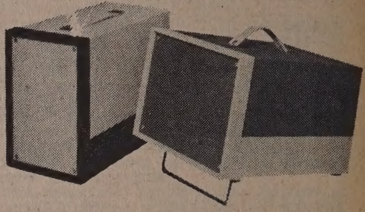

SC-13101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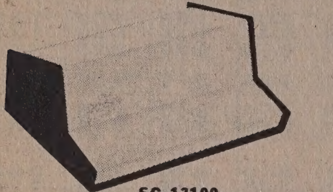

SC-13100

VALU/LINE CABINETS

Classic and contemporary styling together with innovative engineering techniques result in a ruggedly built enclosure. Completely assembled unit includes two separate detachable rack mounting brackets and black rubber feet; adhesive paper protective covering on panels provides an excellent surface for indicating position when drilling or punching panel areas; ⅞" dia. knockout in rear. **Material:** Sides and front panel, ⅛" aluminum; base and cover, 0.057" aluminum; outer brackets, #11 gauge steel; inner brackets, 0.090" aluminum; handles, aluminum extrusion 6063-T5. **Finish:** Base and cover, white smooth enamel; sides, inner and outer brackets, white textured enamel; handles, caustic etch and clear lacquer. **Assembled** with 6-32 and 10-32 screws. Removable outer brackets for mounting in standard EIA 19" cabinet. Bails available as listed; slides also available.

Bud No.	Size, Inches D. x W. x H.	Handle Cutouts No.	Handle Cutouts H., In.	Net Each, Lots of 1-3	4-7	8-10
HC-14100	13 x 12¾ x 3½	1	2¾	$55.60	$50.05	$44.50
HC-14101	13 x 17 x 3½	1	2¾	58.65	52.80	46.90
HC-14102	13 x 12¾ x 5¼	1	3½	57.45	51.70	45.95
HC-14103	13 x 17 x 5¼	1	3½	60.45	54.40	48.35
HC-14104	13 x 17 x 7	1	3½	63.45	57.10	50.75
HC-14105	13 x 17 x 8¾	2	3½	66.55	59.90	53.25
HC-14106	13 x 17 x 10½	2	3½	69.55	62.60	55.65
HC-14107	15 x 17 x 10½	2	3½	72.60	65.35	58.10
HC-14108	15 x 17 x 12¼	2	3½	75.55	68.00	60.45
HC-14109	15 x 17 x 14	3	3½	81.60	73.45	65.30

Bud No.	Description	Net Each, Lots of 1-9	10-24	25-49
BC-14210	Bail, 10" long	$4.05	$3.65	$3.25
BC-14215	Bail, 15" long	4.90	4.40	3.90

COMPUCAB SERIES

"Now Look" practical and adaptable to many types of instruments. New keyboard look matches today's advanced digital technology concept. All aluminum construction combines beauty, utility and sturdiness. No fasteners are visible on panel area. Shipped assembled. **Material:** Base, ⅛" aluminum; cover and back, 0.057" aluminum; feet, rubber, self-adhesive; 10-32 screws. **Finish:** Back and cover, smooth white enamel; base, black texture enamel; feet, black. **Assembled** with 6-32 screws. **Rear Panel:** One ⅞" dia. knockout centered, SC-13100; two ⅞" dia. knockouts and four sets of louvers, each set 2" w. x 1¾" h., SC-13101.

Bud No.	Overall Size, Inches W. x D. x H.	Net Each, Lots of 1-5	6-9	10-19
SC-13100	10 x 8⅞ x 5 11/32	$18.65	$16.80	$14.90
SC-13101	14 x 10¾ x 9 61/64	38.10	34.30	30.50

LINEAR SERIES

Highly practical enclosures offer solutions to the designer of electronic subsystems and instrumentation. Attractive and functional; one-piece body can be removed to expose the entire interior. No visible fasteners. With self-adhesive rubber feet. **Material:**

LINEAR SERIES (CONT'D)

Base, ⅛" aluminum; cover, 0.057" aluminum. **Finish:** Cover, smooth white enamel; base, black texture enamel; feet, black. **Assembled** with 6-32 screws. **Rear Panel:** Single knockout centered, RC-11100; two knockouts, RC-11101.

Bud No.	Overall Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-34	35-49
RC-11100	5 x 10 x 3¼	$12.90	$11.60	$10.30
RC-11101	12 x 10 x 8	28.35	25.50	22.70

SLOPE SERIES

Sloping front enclosures for excellent visibility of panel mounted components. Modern concept in enclosures embodying clean vertical and horizontal lines. Highly desirable where quick access to the interior is needed. One-piece body is easily detached to provide access to interior components. No exposed fasteners. **Material:** Base, ⅛" aluminum; cover, 0.057" aluminum; feet, rubber, self-adhesive. **Finish:** Cover, smooth white enamel; base, black texture enamel. **Assembled** with 6-32 screws. **Rear Panel:** Single knockout centered, SC-12100; two knockouts, SC-12101. **Front Panel:** 20° slope.

Bud No.	Overall Size, Inches W. x D. x H.	Overall Size, Inches Top Depth	Net Each, Lots of 1-24	25-34	35-49
SC-12100	5 x 5 x 4¼	3 5/64	$ 8.75	$ 7.90	$ 7.00
SC-12101	12 x 10 x 3¼	8 7/16	18.15	16.35	14.50

SHOWCASE

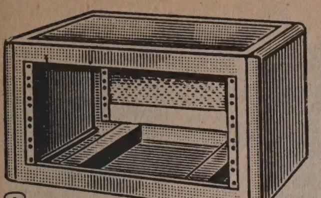
Used as desk top instrument cases, in systems, in racks, as portable enclosures. Lightweight, but sturdy, comes in ten different sizes. Top, sides and bottom are .050" aluminum; front panel is .090", rear panel is .050" aluminum. Strong flexible handle. Two standard color combinations: Black textured (BT) and white; royal blue (RB) and white.

Bud No.	Size, In. W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
BB-1800	5½ x 11 x 6 7/16	2½	$41.15	$37.05	$32.90
BB-1801	8 5/16 x 11 x 6 7/16	3	42.75	38.50	34.20
BB-1802	5½ x 11 x 8 3/16	3	42.40	38.15	33.90
BB-1803	8 5/16 x 11 x 8 3/16	3¼	44.35	39.90	35.50
BB-1804	11 1/16 x 11 x 8 3/16	4	46.15	41.55	36.90
BB-1805	5½ x 11 x 9 15/16	3¼	42.85	38.55	34.30
BB-1806	8 5/16 x 11 x 9 15/16	3¼	44.65	40.20	35.70
BB-1807	8 5/16 x 15 x 9 15/16	4½	48.10	43.30	38.50
BB-1808	11 1/16 x 11 x 9 15/16	4¼	46.40	41.75	37.10
BB-1809	11 1/16 x 15 x 9 15/16	5	49.25	44.35	39.40

ALUMINUM CHASSIS FOR SHOWCASE

Bud No.	Fits	Size, In. W. x D. x H.	Wt., Lbs.	Net 1-14
BBC-1821	BB-1800-02-05	4 29/32 x 9 31/32 x 2	½	$2.90
BBC-1822	BB-1801-03-06	7 11/16 x 9 31/32 x 2	¾	3.40
BBC-1823	BB-1804-08	10 15/32 x 9 31/32 x 2	1	4.10
BBC-1824	BB-1807	7 11/16 x 13 31/32 x 2	1	3.90
BBC-1825	BB-1809	10 15/32 x 13 31/32 x 2	1¼	4.85

BUD Metal Cabinets and Doors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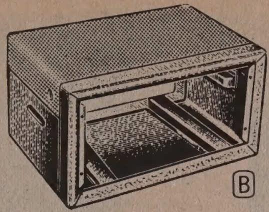
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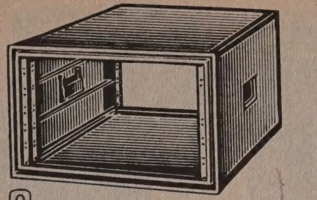
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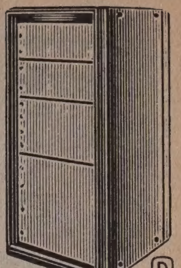
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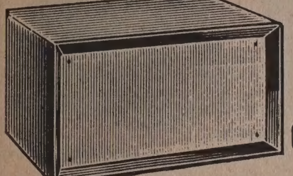
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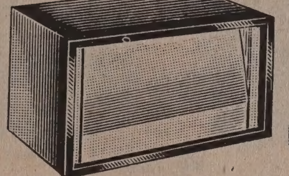
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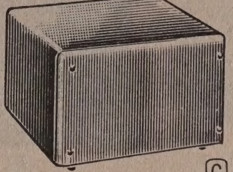
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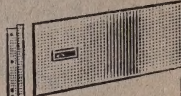

H

PRESTIGE VERSA-CABINETS (FIG. A)

Balled corner, welded steel framework; sides top and bottom easily attached. Standard 19″ panels used to enclose front or top. Has removable channels for shelf or chassis. Opening at back, 1¾″ x 17 15/16″ for controls, leads, etc. Cabinets may be attached side-to-side or stacked vertically. Perforated top panels and side handles available Gray Hammertone (**HG**) only. **Size:** 23 3/16″ w. x 15¾″ d., overall. Weight, 27 to 35 lbs.

Bud No.	Size, Inches			Net Each, Lots of		
	Overall Height	Panel				
		Space	Rear	1-9	10-14	15-19
PC-1700	8¾	5¼	3½	**$47.75**	**$43.00**	**$38.20**
PC-1701	10½	7	5¼	**50.50**	**45.45**	**40.40**
PC-1702	12¼	8¾	7	**51.85**	**46.65**	**41.50**
PC-1703	14	10½	8¾	**58.60**	**52.75**	**46.90**
PC-1704	15¾	12¼	10½	**61.75**	**55.60**	**49.40**
PC-1710	Perforated steel top plate, 12¼ x 19			**5.25**	**4.75**	**4.20**

STANDARD PRESTIGE CABINETS (FIG. B)

Has two supporting rails, laterally movable to fit any chassis width, and shielded handle slots. Finger holes in cover for easy lifting. Of 16 gauge steel. Takes 19″ panels. With embossed feet. **Size:** 21⅝″ w. x 14¾″ d. overall. Gray hammertone finish.

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Overall Height	Panel Space		1-14	15-24	25-34
C-1440	9 9/16	7	25	**$48.15**	**$43.35**	**$38.50**
C-1441	11 5/16	8¾	26	**50.75**	**45.70**	**40.60**
C-1442	13 1/16	10½	28½	**52.90**	**47.60**	**42.30**
C-1550*	9 9/16	7	23½	**52.00**	**46.80**	**41.60**
C-1551*	11 5/16	8¾	25	**54.15**	**48.75**	**43.30**
C-1552*	13 1/16	10½	27½	**57.50**	**51.75**	**46.00**

*With perforated cover; others solid.

CLASSIC II CABINETS (FIG. C)

Combines serene rectilinear beauty with rugged construction. Double rim aluminum extrusion outlines front of cabinet, with edges polished. Two full-length steel flanges support the recessed anodized aluminum handles. Plain .060″ aluminum panels on all four sides; textured finish. Clear inside depth, 20 9/16″; overall, 21 7/16″. Specify color by suffix: **GT**, gray textured; **RB**, royal blue textured; **GD**, gold textured.

Bud No.	Overall Ht., In.	Panel Space, In.	Wt., Lbs.	Net Each, Lots of		
				1-2	3-4	5-7
AGC-9267	7 1/16	5 5/16	29¼	**$107.20**	**$ 96.50**	**$ 85.75**
AGC-9268	8 13/16	7 1/16	30½	**112.95**	**101.65**	**90.35**
AGC-9269	10 9/16	8 13/16	32¼	**115.65**	**104.10**	**92.50**
AGC-9270	12 5/16	10 9/16	33¼	**119.55**	**107.60**	**95.65**
AGC-9271	14 1/16	12 5/16	34¼	**124.35**	**111.90**	**99.50**
AGC-9272	15 13/16	14 1/16	35	**128.20**	**115.40**	**102.55**
AGC-9273	17 9/16	15 13/16	36	**133.05**	**119.75**	**106.45**
AGC-9274	19 5/16	17 9/16	36¾	**136.95**	**123.25**	**109.55**
AGC-9275	21 1/16	19 5/16	37¾	**139.90**	**125.90**	**111.90**
AGC-9276	22 13/16	21 1/16	38½	**144.55**	**130.10**	**115.65**
AGC-9277	24 9/16	22 13/16	39½	**148.45**	**133.60**	**118.75**
AGC-9278	26 5/16	24 9/16	40¼	**152.55**	**137.30**	**122.05**
AGC-9279	28 1/16	26 5/16	41¼	**156.45**	**140.80**	**125.15**
AGC-9280	29 13/16	28 1/16	42	**159.75**	**143.80**	**127.80**

CLASSIC II CABINET RACKS (FIG. D)

Clean, contemporary designed and dependable racks. Side panels and door are 18 gauge steel; top and bottom are 16 gauge steel. Double rimmed, brushed aluminum extrusion around front adds to the appearance of the rack. Comes in four sizes, and in two standard colors; gray textured (**GT**) and royal blue (**RB**); select white (**WH**) for panels and doors. **Size:** 22″ w. x 22″ d. Rear doors included.

Bud No.	Height, Inches	Panel Ht., In.*	Wt., Lbs.	Net Each, Lots of		
				1-2	3-4	5-7
AGR-9302	47 5/16	42	126	**$172.75**	**$155.50**	**$138.20**
AGR-9303	57 13/16	52½	146	**191.80**	**172.60**	**153.45**
AGR-9304	66 9/16	61¼	162	**213.15**	**191.85**	**170.50**
AGR-9306	82 5/16	77	181	**244.15**	**219.75**	**195.30**

*On 19″ width.

SHADOW CABINETS (FIG. E)

Front panel recessed 1″. Front edge of body is beveled. Body of 18 gauge and panels of 16 gauge steel. Four rubber feet. Available in light gray hammertone finish only.

Bud No.	Overall Size, In. W. x H. x D.	Uses Bud Chassis		Net Each, Lots of		
		AC-	CB-	1-24	25-49	50-99
SB-2140	14¼ x 8 x 10	424	704	**$12.75**	**$11.50**	**$10.20**
SB-2141	13¼ x 7½ x 9	407	1193	**10.15**	**9.15**	**8.10**
SB-2142	17 x 9½ x 11	411	666	**16.90**	**15.20**	**13.50**
SB-2143	15½ x 6 x 9	409	1194	**9.60**	**8.65**	**7.70**

FUTURA CABINETS (FIG. F)

Handsome housing of 20 and 18 gauge steel. Four rubber feet. Numbers MD-1960 thru MD-1962 have vertical front panel; all others (Fig. F) have inclined front panel rising 2″ vertically, then inclining 15°. Specify color by suffix: **BBY**, dark blue textured body with light blue textured panels; **HG**, gray hammertone body with light gray textured panels.

Bud No.	Overall Size, In. W. x H. x D.	Net Each, Lots of		
		1-24	25-49	50-99
MD-1960	13 x 8 x 7	**$12.25**	**$11.05**	**$ 9.80**
MD-1961	14 x 9 x 8	**13.25**	**11.95**	**10.60**
MD-1962	16 x 9 x 8	**13.65**	**12.30**	**10.90**
MD-1963	13 x 8 x 7	**14.40**	**12.95**	**11.50**
MD-1964	14 x 9 x 8	**15.40**	**13.85**	**12.30**
MD-1965	16 x 9 x 8	**16.50**	**14.85**	**13.20**

CONTOUR UTILITY CABINETS (FIG. G)

Constructed of 20 gauge steel. Both front and rear panels are removable; the front panel is solid while the rear panel is louvered for proper ventilation. Four rubber feet, attached to base, prevent scratching surface the unit is placed on. Body is textured dark gray enamel; panel is textured light gray enamel.

Bud No.	Overall Size, In. W. x D. x H.	Net Each, Lots of		
		1-24	25-49	50-99
CU-463	6 7/32 x 3¾ x 4 7/32	**$ 7.75**	**$ 7.00**	**$ 6.20**
CU-465	6 7/32 x 5¾ x 4 7/32	**8.85**	**7.95**	**7.10**
CU-585	8 7/32 x 5¾ x 5 7/32	**11.35**	**10.20**	**9.10**
CU-587	8 7/32 x 7¾ x 5 7/32	**12.50**	**11.25**	**10.00**
CU-7125	12 7/32 x 5¾ x 7 7/32	**11.50**	**10.35**	**9.20**
CU-7127	12 7/32 x 7¾ x 7 7/32	**12.10**	**10.90**	**9.70**

CLASSIC II DOORS 19″ WIDE (FIG. H)

Designed for use on Classic II Cabinets; also fit any rack or cabinet with 19″ panel space by attaching to panel mounting rails. Made of ⅛″ aluminum alloy 5005-H36. Stop fits on one panel mounting rail; hinged door attaches to other rail. Equipped with plated, flush-type latch. Finished in vinyl texture; specify color by suffix: **WH**, white textured; **S**, sand.

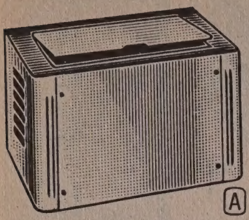
Bud No.	Height, In.	Wt., Lbs.	Net Each, Lots of		
			1-4	5-9	10-14
AGD-367	5¼	1¾	**$10.80**	**$ 9.70**	**$ 8.65**
AGD-368	7	2	**12.60**	**11.35**	**10.10**
AGD-369	8¾	2¾	**13.90**	**12.50**	**11.10**
AGD-370	10½	3	**15.20**	**13.70**	**12.15**
AGD-371	12¼	3½	**16.25**	**14.65**	**13.00**
AGD-372	14	4	**16.65**	**15.00**	**13.30**
AGD-373	15¾	4¾	**18.80**	**16.90**	**15.05**
AGD-374	17½	5	**20.35**	**18.30**	**16.30**
AGD-375	19¼	5½	**21.75**	**19.60**	**17.40**
AGD-376	21	6¼	**23.20**	**20.90**	**18.55**
AGD-377	22¾	6¾	**24.30**	**21.85**	**19.45**
AGD-378	24½	7¼	**25.45**	**22.90**	**20.35**
AGD-379	26¼	7½	**26.90**	**24.20**	**21.50**
AGD-380	28	8	**28.80**	**25.90**	**23.05**

FRONT DOORS FOR CLASSIC II RACKS

Rear doors included with racks.

Bud No.	Fits Rack	Wt., Lbs.	Net Each, Lots of		
			1-2	3-4	5-7
AGD-932	AGR-9302	19	**$34.60**	**$31.15**	**$27.70**
AGD-933	AGR-9303	23	**36.85**	**33.15**	**29.50**
AGD-934	AGR-9304	26	**38.80**	**34.90**	**31.05**
AGD-936	AGR-9306	31	**42.55**	**38.30**	**34.05**

BUD Cabinets and Cases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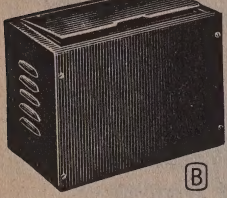
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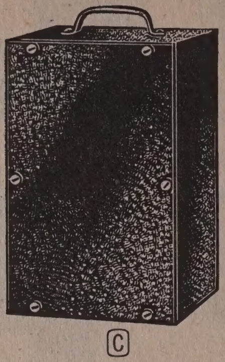
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STREAMLINED CABINETS (FIG. A)

Ideal for housing devices not requiring excessive depth. Recessed, hinged cover with convenient finger lift for access. Panels fit flush with embossed, rounded corner fronts. Back opening 3½″ h. provides for cables or rear controls; louvered sides provide ample ventilation. **Size:** 8¼″ d. x 8″ h. overall. Specify black rinkletex (suffix **BR**), gray rinkletex (suffix **GR**) or gray hammertone (suffix **HG**) finish.

Bud No.	Size, Inches		Wt., Lbs.	Net Each, Lots of		
	Overall Width	Panel Space		1-24	25-49	50-99
CD-1480	10½	8 x 8	6¼	**$10.35**	**$ 9.30**	**$ 8.30**
CD-1481	12½	8 x 10	6¾	**10.45**	**9.40**	**8.35**
CD-1482	14½	8 x 12	7½	**11.15**	**10.05**	**8.90**
CD-1483	16½	8 x 14	7¾	**12.00**	**10.80**	**9.60**
CD-1484	18½	8 x 16	9¼	**12.75**	**11.50**	**10.20**
CD-1485*	20⅝	12 x 18	17½	**24.90**	**22.40**	**19.90**

*Depth is 12″.

INSTRUMENT AND RECEIVER CABINETS (FIG. B)

Economy version of the Streamlined Cabinet series. Recessed, hinged cover provides access to contents. Front panel is attached with self-tapping screws. Louvers provide ample ventilation. Black rinkletex finish only.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
C-973	7 x 8 x 8	4¾	**$ 7.65**	**$ 6.90**	**$ 6.10**
C-993	7 x 10 x 8	5	**8.90**	**8.00**	**7.10**
C-994	7 x 12 x 8	6	**9.15**	**8.25**	**7.30**
C-995	7 x 14 x 8	7	**9.75**	**8.80**	**7.80**
C-1190	8 x 16 x 8	8½	**13.75**	**12.40**	**11.00**
C-975	9 x 15 x 11	12¼	**16.75**	**15.10**	**13.40**
C-999	12 x 18 x 12	18¼	**18.25**	**16.45**	**14.60**

CARRYING CASES (FIG. C)

A versatile cabinet that accepts a variety of equipment. Removable front and back panels; handle may be attached to top. Available in sturdy steel or lightweight aluminum to suit your requirements.

STEEL CASES

Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**) finish when ordering.

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
CC-1095	5 x 6 x 9	3	**$ 5.15**	**$4.65**	**$4.10**
CC-1091	5 x 9 x 6	3	**5.15**	**4.65**	**4.10**
CC-1096	6 x 7 x 12	5¼	**7.15**	**6.45**	**5.70**
CC-1092	6 x 12 x 7	5	**7.15**	**6.45**	**5.70**
CC-1097	7 x 7¾ x 15	7¼	**8.10**	**7.30**	**6.50**
CC-1100	8 x 10 x 10	7	**8.25**	**7.45**	**6.60**
CC-1093	7 x 15 x 9	8	**10.00**	**9.00**	**8.00**

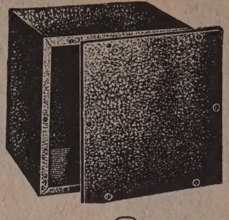
NATURAL FINISH ALUMINUM CASES*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
ACC-2095	5 x 6 x 9	1½	**$5.25**	**$4.75**	**$4.20**
ACC-2091	5 x 9 x 6	1½	**5.25**	**4.75**	**4.20**
ACC-2096	6 x 7 x 12	2½	**8.10**	**7.30**	**6.50**
ACC-2092	6 x 12 x 7	2½	**8.10**	**7.30**	**6.50**

GRAY HAMMERTONE ALUMINUM CASES*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
ACC-2095HG	5 x 6 x 9	1½	**$6.00**	**$5.40**	**$4.80**
ACC-2091HG	5 x 9 x 6	1½	**6.00**	**5.40**	**4.80**
ACC-2096HG	6 x 7 x 12	2½	**9.25**	**8.35**	**7.40**
ACC-2092HG	6 x 12 x 7	2½	**9.25**	**8.35**	**7.40**

*Aluminum alloy 5005 H-14.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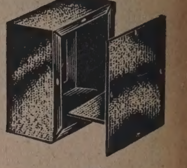
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METAL UTILITY CABINETS (FIG. D)

Highly useful housing for all types of electronic equipment such as mixers, monitors, frequency meters, etc. Both front and back panels are removable for easy accessibility.

STEEL CABINETS

Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**) finish.

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of		
			1-49	50-99	100-149
CU-883	2 x 4 x 4	¾	**$1.90**	**$1.70**	**$1.50**
CU-728	3 x 5 x 4	1	**2.25**	**2.05**	**1.80**
CU-729	4 x 5 x 6	1¾	**2.40**	**2.15**	**1.90**
CU-1098	6 x 6 x 6	2¼	**3.85**	**3.45**	**3.10**
CU-1099	5 x 6 x 9	3	**4.35**	**3.90**	**3.50**
CU-879	7 x 8 x 10	3¼	**5.90**	**5.30**	**4.70**
CU-1124	6 x 7 x 12	5	**5.90**	**5.30**	**4.70**
CU-880	8 x 10 x 10	6¼	**6.90**	**6.20**	**5.50**
CU-881	8 x 11 x 12	8½	**7.60**	**6.85**	**6.10**
CU-882	7 x 9 x 15	8¼	**7.65**	**6.90**	**6.10**

NATURAL FINISH ALUMINUM CABINETS*

Bud No.	Size, Inches D. x W. x H.	Wt., Lbs.	Net Each, Lots of		
			1-49	50-99	100-149
AU-1083	2 x 4 x 4	¼	**$2.40**	**$2.15**	**$1.90**
AU-1028	3 x 5 x 4	½	**2.50**	**2.25**	**2.00**
AU-1029	4 x 5 x 6	¾	**2.85**	**2.55**	**2.30**
AU-1039	6 x 6 x 6	1	**4.15**	**3.75**	**3.30**
AU-1040	5 x 6 x 9	1½	**4.65**	**4.20**	**3.70**

GRAY HAMMERTONE ALUMINUM CABINETS*

AU-1083HG	2 x 4 x 4	¼	**$2.85**	**$2.55**	**$2.30**
AU-1028HG	3 x 5 x 4	½	**3.15**	**2.85**	**2.50**
AU-1029HG	4 x 5 x 6	¾	**3.40**	**3.05**	**2.70**
AU-1039HG	6 x 6 x 6	1	**4.15**	**3.75**	**3.30**
AU-1040HG	5 x 6 x 9	1½	**4.65**	**4.20**	**3.70**

*Aluminum alloy 5005 H-14.

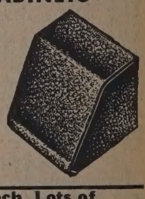
MINIATURE UTILITY CABINETS (FIG. E)

Ideal housing for construction of electronic devices using miniature tubes and transistorized circuitry. Front panel has a built-in chassis. Both front and rear panels are removable; fastened by self-tapping screws. Black rinkletex enamel finish.

Bud No.	Size, Inches		Net Each, Lots of		
	W. x D. x H.	Chassis W. x D.	1-49	50-99	100-149
C-1793	4 x 4 x 2	3⅛ x 1⅞*	**$2.15**	**$1.95**	**$1.70**
C-1794	4 x 5 x 3	4⅛ x 2⅞*	**2.50**	**2.25**	**2.00**
C-1795	5 x 4 x 3	3⅛ x 2⅞†	**2.75**	**2.50**	**2.20**
C-1796	6 x 5 x 4	4⅛ x 3⅞‡	**2.90**	**2.60**	**2.30**
C-1797	5 x 6 x 4	5⅛ x 3⅞†	**3.10**	**2.80**	**2.50**
C-1798	6 x 6 x 6	4⅞ x 5⅞‡	**4.00**	**3.60**	**3.20**

*1″ high. †1¼″ high. ‡1¾″ high.

UNIVERSAL SLOPING PANEL CABINETS



Fully enclosed and shielded housing with one-piece detachable back and sides fastened to body with four self-tapping screws. Components may be mounted on back, bottom, sides or front. Gray hammertone finish only.

ALUMINUM MODELS

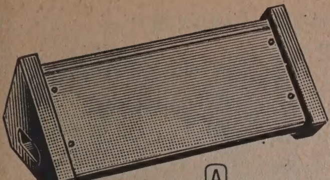
Aluminum alloy 5005 H-14.

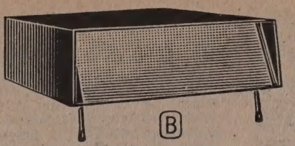
Bud No.	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of		
			1-49	50-99	100-149
AC-1610	4 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	⅜	**$3.15**	**$2.85**	**$2.50**
AC-1611	5 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	½	**3.10**	**2.80**	**2.50**
AC-1612	6 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	$\frac{9}{16}$	**3.40**	**3.05**	**2.70**
AC-1613	7 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	⅝	**3.75**	**3.40**	**3.00**

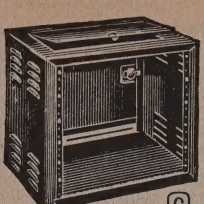
STEEL MODELS

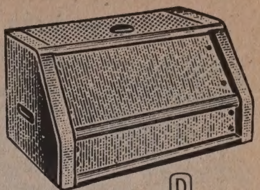
C-1606	4 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	1	**$2.50**	**$2.25**	**$2.00**
C-1607	5 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	1	**2.65**	**2.40**	**2.10**
C-1608	6 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	1¼	**2.90**	**2.60**	**2.30**
C-1609	7 x 4$\frac{1}{16}$ x 4$\frac{19}{64}$	1½	**3.40**	**3.05**	**2.70**

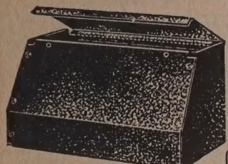
BUD Cabinets and Foundations

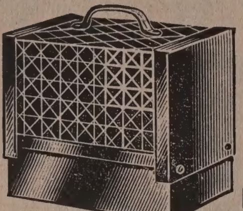


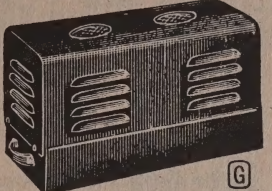


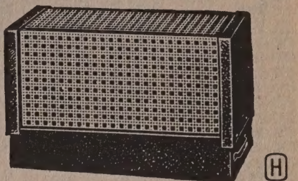












"MARK-T" CABINETS (FIG. A)

Many applications in the realm of control enclosures. Of welded 16 ga. steel with removable front panel and hinged door. Angle of panel and door permit easy viewing of contents. Turn of knurled knob opens door latch. Recessed carrying handles. Four rubber feet. Gray textured body with light gray panel and door. Extra door or panel available on special order. All 6 33/64" h.

Bud No.	Size, Inches W. x D.	Panel or Door Area, Inches	Net Each, Lots of 1-14	15-24	25-34
MT-214	16 x 10 15/32	13 15/16 x 5 17/32	$39.50	$35.55	$31.60
MT-219	21 x 10 15/32	18 15/16 x 5 17/32	43.25	38.95	34.60
MT-224	26 x 10 15/32	23 15/16 x 5 17/32	50.90	45.80	40.70

"TILT-A-VIEW" CABINETS (FIG. B)

Artfully designed to present variable viewing angles excellent for observing meters, dials, etc. Two-piece, 18-ga. steel. Fast, easy access to interior. Two 2" high legs, detachable for changed viewing angle, have rubber feet. Can be mounted on desk, cabinet or wall. Hooded top. No screws in panels. Vinyl texture finish. Gray textured body with light sand panels.

Bud No.	Size, Inches W. x D. x H.	Net Each, Lots of 1-14	15-24	25-34
TV-2155	15 x 10 x 4½	$11.50	$10.35	$ 9.20
TV-2156	16 x 12 x 6½	13.50	12.15	10.80
TV-2157	17 x 14 x 8½	19.60	17.65	15.70

DELUXE CABINET RACKS (FIG. C)

Heavy-gauge steel racks with recessed hinged door on top and snap catch; rounded corners. The five large sizes have hinged rear doors; others, welded rear panels. Louvered sides. Embossed metal feet. Specify black rinkletex (suffix **BR**), gray rinkletex (**GR**) or gray hammertone (**HG**). **Size:** 14¾" x 22" w. Fits 19" panels. **Includes 12 ga. steel panel.**

Bud No.	Size, Inches: Overall Height	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-1726	8 25/32	7	28	$27.85	$25.05	$22.30
CR-1741	10 9/16	8¾	30	29.10	26.20	23.30
CR-1740	12 5/16	10½	34	34.10	30.70	27.30
CR-1742	14 1/16	12¼	37	35.10	31.60	28.10
CR-1739	15 13/16	14	40	47.60	42.85	38.10
CR-1743*	19 5/16	17½	47	46.60	41.95	37.30
CR-1727*	22 13/16	21	51	50.00	45.00	40.00
CR-1744*	28 1/16	26¼	58	53.85	48.45	43.10
CR-1728*	33 5/16	31½	68	57.15	51.45	45.70
CR-1745*	36 13/16	35	78	60.15	54.15	48.10

*These sizes have both top and rear doors.

HEAVY DUTY CABINET RACKS

Similar to above units with Add-A-Cab feature (similar to Add-A-Rack) for continuously expanding systems. Panel mounting rails are integral part of the sides. Removable rear door. Louvered sides and 2½" x 17⅞" opening in the bottom of the back assure adequate ventilation. Made of 16 ga. steel. **Size:** 17⅛" d. x 22" w.

Bud No.	Size, Inches: Overall Height	Panel Space	Wt., Lbs.	Net Each, Lots of 1-9	10-14	15-19
CR-1736	24½	19¼	47	$51.35	$46.20	$41.10
CR-1737	31½	26¼	56	55.10	49.60	44.10
CR-1738	40¼	35	67	65.50	58.95	52.40

ADD-A-CAB FOR ABOVE CABINET RACKS

Bud No.	For Use With	Wt., Lbs.	Net Each, Lots of 1-14	15-24	25-34
ACR-1936	CR-1736	41	$50.95	$45.85	$40.75
ACR-1937	CR-1737	47	62.65	56.40	50.10
ACR-1938	CR-1738	55	64.60	38.15	51.70

PRESTIGE SLOPING PANEL CABINETS (FIG. D)

Ventilated top opens completely. Removable panel trim bar permits installation or removal of panels with chassis attached. Top panel is swept back for easy viewing. Takes standard 19" panels. Shielded lifting handles. Rear opening 2½" x 18" for controls, etc.; panel recess 1¼"; bottom panel 3½" high. **Size:** 22" w. x 9¼" top depth. Gray hammertone finish only. Weight, 25, 27 and 30 lbs.

Bud No.	Size, In. H. x D.	Slope H., In.	Net Each, Lots of 1-14	15-24	25-34
C-1555	11⅞ x 14⅜	7	$56.75	$51.10	$45.40
C-1556	13¼ x 15⅛	8¾	61.00	54.90	48.80
C-1557	14¾ x 16⅛	10½	65.40	58.85	52.30

SLOPING PANEL CABINETS (FIG. E)

Hinged tip for easy access; front panel also removable. Specify black rinkletex (suffix **BR**) or gray hammertone (suffix **HG**).

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
C-1584	6½ x 7 1/16 x 7 9/32	2¾	$ 5.85	$ 5.25	$ 4.70
C-1587	8 x 8 1/16 x 8	4	7.65	6.90	6.10
C-1585	6½ x 9 1/16 x 7 9/32	2½	6.40	5.75	5.10
C-1588	8 x 10 1/16 x 8	4½	8.50	7.65	6.80
C-1586	6½ x 11 1/16 x 7 9/32	3¾	7.50	6.65	5.90
C-1894	8 x 14 1/16 x 8	6	8.90	8.00	7.10
C-1892	8 x 13 1/16 x 8 15/32	5½	9.90	8.90	7.90
C-1896	9 x 18 1/16 x 8 5/32	9¾	12.60	11.35	10.10
C-1893	10 x 18 1/16 x 10½	12½	13.00	11.70	10.40

MINIATURE AMPLIFIER FOUNDATION (FIG. F)

Compact amplifier foundation ideal for use with miniature tubes. Cover is perforated metal with attached handle for portability. Available in black rinkletex finish only.

Bud No.	Size, Inches: Chassis	Ht.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-1754	5 x 7	6	2	$7.15	$6.45	$5.70

STREAMLINED FOUNDATIONS (FIG. G)

Attractive unit houses amplifiers and similar apparatus. Standard chassis with removable top cover with chrome trim. Sides and ends louvered. Handles attached to chassis. Overall height, 9"; chassis 3" high. Specify black rinkletex (suffix **BR**), or gray rinkletex (suffix **GR**).

Bud No.	Size, Inches W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-1750	10 1/16 x 5	4¼	$12.40	$11.15	$ 9.90
CA-1751	12 1/16 x 7	5¾	14.65	13.20	11.70
CA-1752	17 1/16 x 7	7	15.65	14.10	12.50
CA-1753	17 1/16 x 10	9¾	16.90	15.20	13.50

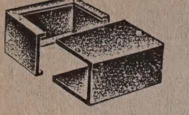
STANDARD FOUNDATIONS (FIG. H)

Standard chassis with perforated cover for maximum ventilation. Handles are attached to chassis. Chassis 2½" h., except CA-1128, 3" h. Overall height, 8 11/32", except CA-1128, 8 27/32". Black rinkletex finish only.

Bud No.	Size, Inches W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CA-699	9⅝ x 5⅛	3¾	$ 9.85	$ 8.85	$7.90
CA-1125	13⅝ x 5⅛	5	10.35	9.30	8.30
CA-1126	17⅛ x 7⅛	7¼	11.65	10.50	9.30
CA-1128	12⅛ x 10⅛	6½	11.90	10.70	9.50

BUD Boxes and Cases

MINIBOXES, HANDY BOXES



Design of this box permits installation of more components than would be possible in the conventionally designed boxes the same size. Two-piece construction. **Either snap-lock or screw type.** The flange type construction assures adequate shielding. Made from heavy .040 ga. aluminum. Available in natural aluminum finish and gray hammertone finish.

GRAY HAMMERTONE MINIBOXES

Bud No.	Size, Inches L. x H. x W.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CU-2100A	2¾ x 2⅛ x 1⅝	¼	$1.15	$1.05	$0.90
CU-2101A	3¼ x 2⅛ x 1⅝	¼	1.15	1.05	.90
CU-2102A	4 x 2⅛ x 1⅝	¼	1.25	1.15	1.00
CU-2103A	4 x 2¼ x 2¼	¼	1.40	1.25	1.10
CU-2104A	5 x 2¼ x 2¼	¼	1.60	1.45	1.30
CU-2105A	5 x 4 x 3	½	1.90	1.70	1.50
CU-2106A	5¼ x 3 x 2⅛	¼	1.65	1.50	1.30
CU-2107A	6 x 5 x 4	¾	2.40	2.15	1.90
CU-2108A*	7 x 5 x 3	¾	2.75	2.50	2.20
CU-2109A*	8 x 6 x 3½	1	3.60	3.25	2.90
CU-2110A*	10 x 6 x 3½	1¼	3.90	3.50	3.10
CU-2111A*	12 x 7 x 4	1¾	5.35	4.80	4.30
CU-2112A*	17 x 5 x 4	2¼	5.35	4.80	4.30
CU-2113A*	10 x 2 x 1⅝	½	2.00	1.80	1.60
CU-2114A*	12 x 2½ x 2¼	¾	2.65	2.40	2.10
CU-2115A	4 x 2 x 2¾	¼	1.40	1.25	1.10
CU-2116A	4¼ x 2¼ x 1½	¼	1.40	1.25	1.10
CU-2117A	3¼ x 2⅛ x 1⅛	¼	1.40	1.25	1.10

*.050″ aluminum.

NATURAL FINISH MINIBOXES

Bud No.	Size, Inches L. x H. x W.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CU-3000A	2¾ x 2⅛ x 1⅝	¼	$1.00	$0.90	$0.80
CU-3001A	3¼ x 2⅛ x 1⅝	¼	1.00	.90	.80
CU-3002A	4 x 2⅛ x 1⅝	¼	1.10	1.00	.90
CU-3003A	4 x 2¼ x 2¼	¼	1.25	1.15	1.00
CU-3004A	5 x 2¼ x 2¼	¼	1.40	1.25	1.10
CU-3005A	5 x 4 x 3	½	1.40	1.25	1.10
CU-3006A	5¼ x 3 x 2⅛	¼	1.40	1.25	1.10
CU-3007A	6 x 5 x 4	¾	1.90	1.70	1.50
CU-3008A*	7 x 5 x 3	¾	2.40	2.15	1.90
CU-3009A*	8 x 6 x 3½	1	3.10	2.80	2.50
CU-3010A*	10 x 6 x 3½	1¼	3.35	3.00	2.70
CU-3011A*	12 x 7 x 4	1¾	4.65	4.20	3.70
CU-3012A*	17 x 5 x 4	2¼	4.65	4.20	3.70
CU-3013A*	10 x 2 x 1⅝	½	1.85	1.65	1.50
CU-3014A*	12 x 2½ x 2¼	¾	2.35	2.10	1.90
CU-3015A	4 x 2 x 2¾	¼	1.25	1.15	1.00
CU-3016A	4¼ x 2¼ x 1½	¼	1.25	1.15	1.00
CU-3017A	3¼ x 2⅛ x 1⅛	¼	1.10	1.00	.90

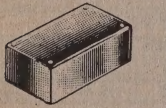
*.050″ aluminum.

HANDY BOXES

Similar to Miniboxes in design and construction, except made of 22 gauge steel. Black rinkletex finish only. Screw type only.

Bud No.	Size, Inches L. x H. x W.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
HB-1621	4¼ x 2¼ x 1½	¼	$2.35	$2.10	$1.90
HB-1622	4 x 2 x 2¾	½	2.35	2.10	1.90

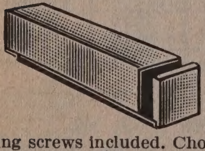
ECONOBOX PRECISION DIECAST BOXES



Suitable for numerous uses where a small box is required. Diecast aluminum with close fitting, flange lid which attaches to bosses in the box by means of screws. Boxes are light weight and easily machined. CU-247 and CU-347 have 6 mounting holes for cover; all others have 4 mounting holes for cover. 6 x 32-½″ flat head screws supplied. Height given includes cover.

Bud No.	Size, Inches W. x D. x H.	Net Each, Lots of 1-24	25-49	50-99
CU-123	1½ x 3⅝ x 1 7/32	$1.85	$1.65	$1.50
CU-124	2⅜ x 4⅜ x 1 7/32	2.00	1.80	1.60
CU-234	3 11/16 x 4 11/16 x 2 7/32	3.15	2.85	2.50
CU-247	4 45/64 x 7 25/64 x 2 7/32	5.15	4.65	4.10
CU-347	4 45/64 x 7 25/64 x 3 7/32	5.60	5.05	4.50

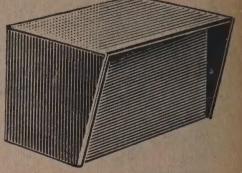
MINISLIDES



Ideal for housing components or assemblies where easy access to internally mounted parts is important. Can be mounted in a number of positions in a rack or cabinet. Accessibility achieved by removing sliding cover. Design of Minislide Box provides adequate shielding and protection from dust. Sturdily made of .050 aluminum. 4 self-tapping fastening screws included. Choice of gray hammertone (**HG**) or natural aluminum (**NA**).

Bud No.	Finish	Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
MS-2150	(HG)	3⅛ x 13 x 2⅝	1	$6.00	$5.40	$4.80
MS-2151	(HG)	5⅛ x 13 x 2⅝	1½	6.65	6.00	5.30
MS-2152	(HG)	3⅛ x 17 x 2⅝	1¼	6.50	5.85	5.20
MS-3050	(NA)	3⅛ x 13 x 2⅝	1	4.40	3.95	3.50
MS-3051	(NA)	5⅛ x 13 x 2⅝	1½	5.40	4.85	4.30
MS-3052	(NA)	3⅛ x 17 x 2⅝	1¼	5.25	4.75	4.20

COWL-TYPE MINIBOXES

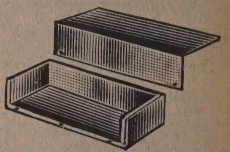


The cowl-type Minibox has a projecting cover to reduce glare on the panel from overhead lighting. It also provides protection for controls and dials. Cover has two box braces to which bottom is attached with sheet metal screws. When assembled, this type of construction results in a sturdy, rigid housing. Constructed of .040″ aluminum and available in natural or light hammertone gray finish.

Bud No.	Overall Size, In. H. x W. x D.	Net Each, Lots of 1-49	50-99	100-149
SC-2130*	6 x 10 x 7	$ 9.50	$8.55	$7.60
SC-2131*	7 x 12 x 8	10.35	9.30	8.30
SC-2132*	3 x 8 x 5	5.50	4.95	4.40
SC-2133*	5 x 5 x 5	5.60	5.05	4.50
SC-3030†	6 x 10 x 7	6.90	6.20	5.50
SC-3031†	7 x 12 x 8	7.40	6.65	5.90
SC-3032†	3 x 8 x 5	3.90	3.50	3.10
SC-3033†	5 x 5 x 5	4.15	3.75	3.30

*Painted light gray hammertone. †Natural aluminum finish.

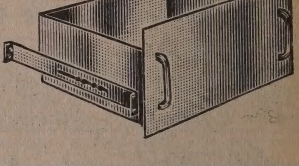
CONVERTA-BOXES



Versatile enclosure combines welded base and two-sided cover. Components or controls are easily mounted to any surface of the unit. All contents easily accessible. Cover and base are fastened by self-tapping screws. Rigid 20 ga. cadmium-plated steel.

Bud No.	Size, Inches H. x W. x D.	Wt., Lbs.	Net Each, Lots of 1-24	25-49	50-99
CU-341	1½ x 4 x 3	½	$3.15	$2.85	$2.50
CU-452	2 x 5 x 4	¾	3.10	2.80	2.50
CU-482	2 x 8 x 4	1¼	3.25	2.95	2.60
CU-592	2½ x 9½ x 5	1¾	3.50	3.15	2.80
CU-622	2½ x 12 x 6	2¼	3.85	3.45	3.10
CU-712	2½ x 15 x 7	3	5.15	4.65	4.10

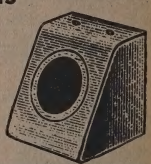
DRAWER WITH ADJUSTABLE SLIDES



Fits any cabinet or cabinet rack with 19″ panel space. Slide bracket adjustable 16½″ to 24¼″ to fit any cabinet with depth 17″ to 25½″. Fastens by bracket to panel mounting rail in front and rear of cabinet. Nylon rollers for smooth movement. Hardware supplied. Specify color when ordering: Add suffix **HG** for gray hammertone; **BR** for black rinkletex; **GR** for gray rinkletex.

Bud No.	Inside Size, Inches	Wt., Lbs.	Net Each, Lots of 1-2	3-4	5-7
D-1721	16 19/32 x 6 11/32 x 16 13/64	19½	$63.60	$57.25	$50.90

UNIVERSAL METER CASES



Center hole punched for 2″ meters, plus easily removed knock-out ring to provide fit for 3″ meters. Single piece detachable back and sides fastened to case with self-tapping screws for easy installation and servicing. Two ⅜″ knock-out holes in top provide for installation of feed-through insulators, switches, volume controls. etc. Gray hammertone finish only. **Size:** 4 19/64″ h. x 4″ w. x 4 1/16″ d.

Bud No.	Construction	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CM-1935	Steel	¾	$2.35	$2.10	$1.90
CMA-1936	Aluminum	¼	2.75	2.50	2.20

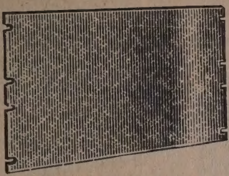
WIDE UNIVERSAL METER CASE

Same as above, except extra wide to permit installation of small components along with a meter or accommodate a 4″ meter. Made of 5005 H-14 aluminum. **Size:** 4 19/64″ h. x 6″ w. x 4 1/16″ d.

Bud No.	Construction	Wt., Lbs.	Net Each, Lots of 1-49	50-99	100-149
CMA-1930	Aluminum	½	$4.60	$4.15	$3.70

BUD Relay Rack Panels, Chassis

STANDARD RELAY RACK PANELS



Choice of steel or aluminum relay rack panels, ⅛″ or ³⁄₁₆″ thick, in both 19″ and 24″ widths. Specify color when ordering, use suffix: **BR**, black rinkletex; **GR**, gray rinkletex; **HG**, gray hammertone; **BY**, light blue textured; **GY**, light gray textured; **WH**, white; **S**, sand. Aluminum panels 5005 H-36 or 2024 T-3 alloy.

24″ WIDE PANELS

19″ WIDE PANELS

Ht., In.	⅛″ 5005 H-36 ALUMINUM				³⁄₁₆″ 5005 H-36 ALUMINUM			
	Bud No.	Net Each, Lots of			Bud No.	Net Each, Lots of		
		1-49	50-99	100-149		1-49	50-99	100-149
1¾	PA-2401	$ 3.15	$ 2.85	$ 2.50	PA-3101	$ 3.10	$ 2.80	$ 2.50
3½	PA-2402	4.10	3.70	3.30	PA-3102	4.35	3.90	3.50
5¼	PA-2403	5.50	4.95	4.40	PA-3103	5.75	5.20	4.60
7	PA-2404	6.40	5.75	5.10	PA-3104	7.10	6.40	5.70
8¾	PA-2405	8.00	7.20	6.40	PA-3105	8.35	7.50	6.70
10½	PA-2406	9.75	8.80	7.80	PA-3106	10.50	9.45	8.40
12¼	PA-2407	11.00	9.90	8.80	PA-3107	12.10	10.90	9.70
14	PA-2408	13.25	11.95	10.60	PA-3108	13.50	12.15	10.80
15¾	PA-2409	14.35	12.90	11.50	PA-3109	15.65	14.10	12.50
17½	PA-2410	14.85	13.35	11.90	PA-3110	17.15	15.45	13.70
19¼	PA-2411	16.40	14.75	13.10	PA-3111	18.75	16.90	15.00
21	PA-2412	18.10	16.30	14.50	PA-3112	20.60	18.55	16.50

19″ WIDE ⅛″ STEEL AND ALUMINUM PANELS

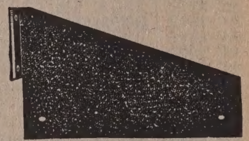
Ht., In.	⅛″ STEEL				⅛″ 2024 T-3 ALUMINUM				⅛″ 5005 H-36 ALUMINUM				Ht., In.
	Bud No.	Net Each, Lots of			Bud No.	Net Each, Lots of			Bud No.	Net Each, Lots of			
		1-49	50-99	100-149		1-49	50-99	100-149		1-49	50-99	100-149	
1¾	PS-1250	$1.70	$1.50	$1.35	PA-1131	$ 2.35	$ 2.10	$ 1.90	PA-1101	$ 2.00	$ 1.80	$ 1.60	1¾
3½	PS-1251	2.00	1.80	1.60	PA-1132	3.10	2.80	2.50	PA-1102	2.75	2.50	2.20	3½
5¼	PS-1252	2.50	2.25	2.00	PA-1133	4.10	3.70	3.30	PA-1103	3.60	3.25	2.90	5¼
7	PS-1253	2.65	2.40	2.10	PA-1134	5.25	4.75	4.20	PA-1104	4.60	4.15	3.70	7
8¾	PS-1254	3.60	3.25	2.90	PA-1135	5.85	5.25	4.70	PA-1105	5.15	4.65	4.10	8¾
10½	PS-1255	4.25	3.85	3.40	PA-1136	7.50	6.75	6.00	PA-1106	6.65	6.00	5.30	10½
12¼	PS-1256	4.75	4.30	3.80	PA-1137	8.60	7.75	6.90	PA-1107	7.65	6.90	6.10	12¼
14	PS-1257	5.40	4.85	4.30	PA-1138	10.00	9.00	8.00	PA-1108	8.75	7.90	7.00	14
15¾	PS-1258	5.85	5.25	4.70	PA-1139	10.85	9.75	8.70	PA-1109	9.75	8.80	7.80	15¾
17½	PS-1259	6.50	5.85	5.20	PA-1140	11.65	10.50	9.30	PA-1110	10.65	9.60	8.50	17½
19¼	PS-1260	7.15	6.45	5.70	PA-1141	12.60	11.35	10.10	PA-1111	11.65	10.50	9.30	19¼
21	PS-1261	8.15	7.35	6.50	PA-1142	14.40	12.95	11.50	PA-1112	12.90	11.65	10.35	21

SURFACE SHIELD PANELS

Bright aluminum alloy 5005 H-36 panels have blemish-free mill finish. Covered on both sides with sturdy, pressure-sensitive, white paper; protects against damage and useful for marking for drilling, positioning, etc. Standard notched sizes.

Ht., In.	⅛″ ALUMINUM				³⁄₁₆″ ALUMINUM			
	Bud No.	Net Each, Lots of			Bud No.	Net Each, Lots of		
		1-49	50-99	100-149		1-49	50-99	100-149
1¾	SFA-1831	$ 1.65	$ 1.50	$ 1.30	SFA-3161	$ 3.25	$ 2.95	$ 2.60
3½	SFA-1832	2.85	2.55	2.30	SFA-3162	4.60	4.15	3.70
5¼	SFA-1833	3.65	3.30	2.90	SFA-3163	6.00	5.40	4.80
7	SFA-1834	4.50	4.05	3.60	SFA-3164	7.50	6.75	6.00
8¾	SFA-1835	5.25	4.75	4.20	SFA-3165	8.85	7.95	7.10
10½	SFA-1836	6.85	6.15	5.50	SFA-3166	10.35	9.30	8.30
12¼	SFA-1837	7.85	7.05	6.30	SFA-3167	13.10	11.80	10.50
14	SFA-1838	8.85	7.95	7.10	SFA-3168	14.85	13.35	11.90
15¾	SFA-1839	10.00	9.00	8.00	SFA-3169	16.70	15.00	13.35
17½	SFA-1840	11.00	9.90	8.80	SFA-3170	18.40	16.55	14.70
19¼	SFA-1841	12.25	11.05	9.80	SFA-3171	20.25	18.25	16.20
21	SFA-1842	13.25	11.95	10.60	SFA-3172	21.90	19.70	17.50

CHASSIS MTG. BRACKETS

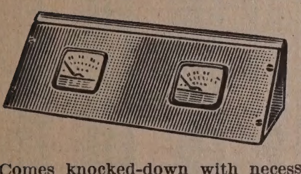


Mounts chassis to panels; supports entire chassis weight. Heavy gauge steel 6½″ high, cut away at bottom to mount flush to panel. Black enamel finish.

Bud No.	Depth, In.	Net per Pair, Lots of		
		1-49	50-99	100-149
MB-458	8	$2.15	$1.95	$1.70
MB-448	10	2.15	1.95	1.70
MB-459	11	2.50	2.25	2.00
MB-449	12	2.85	2.55	2.30
MB-460	13	2.65	2.40	2.10
MB-450	10	3.25	2.95	2.60
MB-451*	13	3.40	3.05	2.70

*8½″ high for chassis height of 4″.

DUAL-VIEW PANEL SUPPORT



Designed for installation on a rack where an oblique view of instrument panel is desired. Engineered so that the entire assembly occupies no more space than size of supported panel. Panel support cover can be removed for easy servicing or installation of instruments. Made of heavy gauge steel with contoured edges. Comes knocked-down with necessary assembly hardware, but without panels. Bud panels to fit these supports are PS-1253 (steel), and PA-1104 (aluminum) for Model IP-1120; PS-1255 (steel), and PA-1106 (aluminum) for IP-1121. Specify color when ordering, use suffix: **BR**, for black rinkletex; **HG**, gray hammertone; **GR**, gray rinkletex; **GY**, light gray textured; **BY**, light blue textured.

Bud No.	Panel Space Required, In.	Wt., Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
IP-1120	19 x 7	3½	$7.00	$6.30	$5.60
IP-1121	19 x 10½	6¾	9.85	8.85	7.90

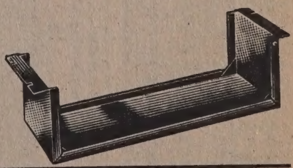
CHASSIS SUPPORTING ANGLES

Distribute weight to sides of the rack to relieve the panel. Angles are 3″ x 1⅜″ x ⁷⁄₆₄″ steel. Black enamel finish. **No. CE-2219** designed for attachment to rails of Prestige Relay Racks. Slotted for infinite vertical adjustment; extend to full cabinet depth; 21″ x 3″ x 2¾″.

Bud No.	Length, Inches	Wt., Lbs.	Net per Pair, Lots of		
			1-24	25-49	50-99
SA-1349	14½	3½	$3.85	$3.45	$3.10
SA-1350	12	3	3.85	3.45	3.10
CE-2219	21	6½	5.15	4.65	4.10

PANEL CHASSIS

Panel mounting chassis for vertical installation where depth is limited or front service is desired. Made of .060″ aluminum alloy 5005 H-14 in natural finish. Front flange has standard notching. Fits standard 19″ panel space.



Bud No.	Height, Inches	Wt., Lbs.	Net Each, Lots of		
			1-24	25-49	50-99
CB-1370	1¾	¾	$3.65	$3.30	$2.90
CB-1371	3½	1¼	4.10	3.70	3.30
CB-1372	5¼	1½	4.60	4.15	3.70
CB-1373	7	2	5.15	4.65	4.10
CB-1374	8¾	2¼	6.25	5.65	5.00
CB-1375	10½	2¾	7.25	6.55	5.80
CB-1376	12¼	3	8.10	7.30	6.50
CB-1377	14	3¼	8.85	7.95	7.10

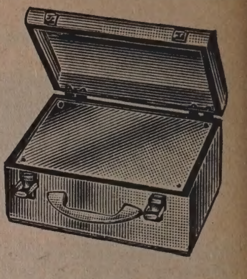
TRIANGULAR MOUNTING BRACKETS

Ideal for rigid support of shelves to take heavy loads. Heavy gauge steel with ¾″ flange. Black enamel finish only.

Bud No.	Size, In. D. x H.	Wt., Lbs.	Net per Pair, Lots of		
			1-49	50-99	100-149
MB-1266	5 x 5	½	$1.65	$1.50	$1.30
MB-1267	7 x 7	1	2.00	1.80	1.60
MB-1268	9 x 9	1½	2.50	2.25	2.00

Cases and Chassis Bases

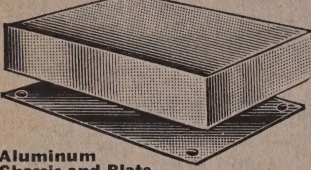
TRANSICASE PORTABLE INSTRUMENT CASES



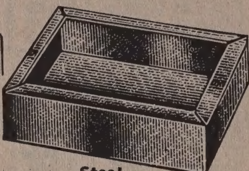
Handsome, portable instrument case with unlimited applications. Contour design fabricated of .040" aluminum with flush-fitting aluminum panel. Lid protects instruments in case; mounted on two slide-off, bright nickel-plated hinges with toggle catches. Rubber feet at both base and back; metal plugs supplied to fill holes if rubber feet are not used. Bright nickel-plated handle. **Specify Color:** Add suffix **BBY** for textured blue; **GGY** for textured gray enamel.

Bud No.	Inside Panel Size, Inches	Clear Internal Space, Inches		Internal Aperture, Inches	Overall Size, Inches W. x D. x H.	Wt., Lbs.	Net Each, Lots of		
		Below Panel	Above Panel				1-9	10-14	15-19
TC-300	8 15/16 x 5 15/16	4 13/32	1 15/32	8 x 5 31/32	10 1/16 x 7 x 5	2½	$33.50	$30.15	$26.80
TC-301	10⅜ x 7¼	4 13/32	1 15/32	9 7/16 x 7 9/32	11½ x 8¼ x 6	3¼	34.50	31.05	27.60
TC-302	11⅞ x 7 15/16	5 29/32	1 15/32	10 15/16 x 7 31/32	13 x 9 x 7½	4	36.85	33.15	29.50
TC-303	15⅜ x 7 15/16	5 29/32	1 15/32	14 7/16 x 7 31/32	16½ x 9 x 7½	4¾	37.40	33.65	29.90
TC-304	19 x 7	7 11/32	1 15/32	18 1/16 x 7 1/32	20⅛ x 8 x 9	6¾	39.50	35.55	31.60

ALUMINUM AND STEEL CHASSIS BASES



Aluminum Chassis and Plate



Steel

Each chassis is made from a single sheet of metal. All corners are reinforced and spot welded. Natural finish aluminum alloy 5005 H-14. All four sides are folded at the bottom for added rigidity and strength.

ALUMINUM CHASSIS BASES

Bud No.	Size, Inches D. x W. x H.	Ga.	Wt., Lbs.	Net Each, Lots of		
				1-24	25-49	50-99
AC-1401	2½ x 4½ x 1	18	⅛	$ 1.60	$ 1.45	$ 1.30
AC-1402	3½ x 4½ x 1	18	⅛	1.65	1.50	1.30
AC-1403	3½ x 5½ x 1	18	⅛	1.65	1.50	1.30
AC-1404	4 x 5 x 2	18	¼	2.00	1.80	1.60
AC-1405	4 x 6 x 1½	18	¼	1.75	1.60	1.40
AC-430	4 x 6 x 3	18	⅓	2.15	1.95	1.70
AC-431	4 x 6 x 2	18	¼	2.00	1.80	1.60
AC-1406	4 x 8 x 2	18	¼	2.25	2.05	1.80
AC-432	4 x 17 x 3	16	1	3.85	3.45	3.10
AC-1407	4½ x 8 x 1½	18	¼	2.10	1.90	1.70
AC-402	5 x 7 x 2	18	⅓	2.10	1.90	1.70
AC-429	5 x 7 x 3	18	½	2.35	2.10	1.90
AC-1408	5 x 9 x 1½	18	⅓	2.10	1.90	1.70
AC-1409	5 x 9½ x 1½	18	⅓	2.10	1.90	1.70
AC-403	5 x 9½ x 2	18	½	2.25	2.05	1.80
AC-401	5 x 9½ x 2½	18	½	2.65	2.40	2.10
AC-421	5 x 9½ x 3	18	⅝	2.75	2.50	2.20
AC-404	5 x 10 x 3	18	⅝	2.75	2.50	2.20
AC-422	5 x 13 x 3	18	¾	3.15	2.85	2.50
AC-1410	5 x 13½ x 2½	18	¾	2.85	2.55	2.30
AC-1411	5½ x 5½ x 1	18	⅕	1.90	1.70	1.50
AC-1412	5½ x 9½ x 1½	18	⅓	2.10	1.90	1.70
AC-1413	6 x 8 x 2	18	⅓	2.25	2.05	1.80
AC-1414	6 x 14 x 3	16	1⅛	4.00	3.60	3.20
AC-433	6 x 17 x 3	16	1¼	4.60	4.15	3.70
AC-405	7 x 7 x 2	18	½	2.25	2.05	1.80
AC-406	7 x 9 x 2	18	½	2.35	2.10	1.90
AC-407	7 x 11 x 2	18	⅝	2.75	2.50	2.20
AC-408	7 x 12 x 3	18	⅞	3.35	3.00	2.70
AC-409	7 x 13 x 2	18	¾	2.85	2.55	2.30
AC-1415	7 x 15 x 2	16	1	3.65	3.30	2.90
AC-411	7 x 15 x 3	16	1¼	4.60	4.15	3.70
AC-1416	7 x 17 x 2	16	1⅛	4.10	3.70	3.30
AC-1417	7 x 17 x 2½	16	1¼	4.25	3.85	3.40
AC-423	7 x 17 x 3	16	1½	4.60	4.15	3.70
AC-1418	8 x 10 x 2½	18	1	3.40	3.05	2.70
AC-1419	8 x 12 x 2½	16	1⅛	4.00	3.60	3.20
AC-424	8 x 12 x 3	16	1¼	3.90	3.50	3.10
AC-425	8 x 17 x 2	16	1½	4.10	3.70	3.30
AC-412*	8 x 17 x 3	16	1¾	4.75	4.30	3.80
AC-1420	8½ x 15 x 3	16	1½	4.40	3.95	3.50
AC-1421	9 x 15 x 3	16	1½	5.00	4.50	4.00
AC-413	10 x 12 x 3	16	1¼	4.75	4.30	3.80
AC-414	10 x 14 x 3	16	1½	4.75	4.30	3.80
AC-415*	10 x 17 x 2	16	1½	4.60	4.15	3.70
AC-416*	10 x 17 x 3	16	1¾	5.25	4.75	4.20
AC-427*	10 x 17 x 4	14	2½	7.40	6.65	5.90
AC-1422	10 x 17 x 5	16	2¼	10.75	9.70	8.60
AC-1423	10 x 23 x 3	14	2¾	7.90	7.10	6.30
AC-426*	11 x 17 x 3	14	2	5.75	5.20	4.60
AC-417*	11 x 17 x 3	14	2¼	6.65	6.00	5.30
AC-1424	12 x 12 x 3	16	1½	4.85	4.35	3.90
AC-1425	12 x 17 x 2	16	1⅝	6.00	5.40	4.80
AC-418*	12 x 17 x 3	14	2¼	6.85	6.15	5.50
AC-419*	13 x 17 x 2	14	2⅝	5.90	5.30	4.70
AC-420*	13 x 17 x 3	14	2¾	7.10	6.40	5.70
AC-428*	13 x 17 x 4	14	3¼	8.65	7.80	6.90
AC-1426	13 x 17 x 5	14	3½	11.85	10.65	9.50
AC-1427	14 x 17 x 3	14	2¾	8.40	7.55	6.70
AC-1428	15 x 17 x 4	14	3¼	11.85	10.65	9.50
AC-1429	15 x 17 x 6	14	4⅛	16.25	14.65	13.00
AC-1430	17 x 17 x 3	14	3¼	10.65	9.60	8.50
AC-1431	17 x 17 x 4	14	3⅞	14.10	12.70	11.30

*Punched to accommodate chassis mounting brackets.

STEEL CHASSIS BASES
ZINC PLATED FINISH

Bud No.	Size, Inches D. x W. x H.	Ga.	Net Each, Lots of		
			1-24	25-49	50-99
CB-1066	4 x 17 x 3	20	$ 4.00	$ 3.60	$3.20
CB-102	4½ x 8 x 1½	22	2.90	2.60	2.30
CB-629	5 x 7 x 2	22	2.50	2.25	2.00
CB-103	5 x 9 x 1½	22	2.65	2.40	2.10
CB-776	5 x 9½ x 1½	22	3.25	2.95	2.60
CB-645	5 x 9½ x 2½	22	3.25	2.95	2.60
CB-605	5 x 10 x 3	22	3.60	3.25	2.90
CB-105	5 x 13 x 3	20	4.25	3.85	3.40
CB-1198	5 x 13½ x 2½	20	4.35	3.90	3.50
CB-101	5½ x 5½ x 1	22	2.65	2.40	2.10
CB-104	6 x 8 x 2	20	2.90	2.60	2.30
CB-756	6 x 14 x 3	20	3.90	3.50	3.10
CB-1191	7 x 7 x 2	20	3.10	2.80	2.50
CB-1192	7 x 9 x 2	20	3.10	2.80	2.50
CB-1193	7 x 11 x 2	20	3.40	3.05	2.70
CB-793	7 x 12 x 3	20	4.00	3.60	3.20
CB-1194	7 x 13 x 2	20	3.65	3.30	2.90
CB-1189	7 x 15 x 3	20	4.65	4.20	3.70
CB-1199	7 x 17 x 2½	20	4.50	4.05	3.60
CB-758	7 x 17 x 3	20	5.00	4.50	4.00
CB-702	8 x 10 x 2½	20	3.85	3.45	3.10
CB-704	8 x 12 x 2½	20	4.35	3.90	3.50
CB-760	8 x 12 x 3	20	4.50	4.05	3.60
CB-774	8 x 17 x 2	20	4.50	4.05	3.60
CB-775	8 x 17 x 3	20	5.00	4.50	4.00
CB-666	8½ x 15 x 3	20	5.25	4.75	4.20
CB-1195	10 x 12 x 3	20	4.60	4.15	3.70
CB-779	10 x 14 x 3	20	4.60	4.15	3.70
CB-769	10 x 17 x 2	20	4.60	4.15	3.70
CB-637	10 x 17 x 3	20	5.50	4.95	4.40
CB-1196	10 x 17 x 3	18	5.85	5.25	4.70
CB-641	10 x 17 x 4	18	6.90	6.20	5.50
CB-624	10 x 17 x 5	18	10.35	9.30	8.30
CB-1197	10 x 23 x 3	18	6.75	6.10	5.40
CB-770	11 x 17 x 2	18	5.35	4.80	4.30
CB-771	11 x 17 x 3	18	6.85	6.15	5.50
CB-106	12 x 12 x 3	18	6.00	5.40	4.80
CB-661	12 x 17 x 2	18	5.90	5.30	4.70
CB-662	12 x 17 x 3	18	7.10	6.40	5.70
CB-772	13 x 17 x 2	18	7.15	6.45	5.70
CB-773	13 x 17 x 3	18	7.90	7.10	6.30
CB-643	13 x 17 x 4	18	9.10	8.20	7.30
CB-626	13 x 17 x 5	18	11.35	10.20	9.10

BLACK RINKLETEX FINISH

CB-1068	4 x 17 x 3	20	$3.60	$3.25	$2.90
CB-628	5 x 7 x 2	22	2.10	1.90	1.70
CB-788	5 x 9½ x 1½	22	2.35	2.10	1.90
CB-644	5 x 9½ x 2½	22	2.65	2.40	2.10
CB-604	5 x 10 x 3	22	2.65	2.40	2.10
CB-647	5 x 13½ x 2½	20	3.40	3.05	2.70
CB-755	6 x 14 x 3	20	3.40	3.05	2.70
CB-789	7 x 7 x 2	20	2.50	2.25	2.00
CB-790	7 x 9 x 2	20	2.65	2.40	2.10
CB-791	7 x 11 x 2	20	2.75	2.50	2.20
CB-792	7 x 12 x 3	20	3.10	2.80	2.50
CB-646	7 x 13 x 2	20	2.90	2.60	2.30
CB-649	7 x 15 x 3	20	3.85	3.45	3.10
CB-648	7 x 17 x 2½	20	3.85	3.45	3.10
CB-757	7 x 17 x 3	20	4.35	3.90	3.50
CB-701	8 x 10 x 2½	20	3.25	2.95	2.60
CB-703	8 x 12 x 2½	20	3.40	3.05	2.70
CB-759	8 x 12 x 3	20	3.60	3.25	2.90
CB-650	8 x 17 x 2	20	3.25	2.95	2.60
CB-651*	8 x 17 x 3	20	3.90	3.50	3.10
CB-665	8½ x 15 x 3	20	4.35	3.90	3.50
CB-652	10 x 12 x 3	20	3.65	3.30	2.90
CB-653	10 x 14 x 3	20	3.90	3.50	3.10
CB-654*	10 x 17 x 2	20	3.85	3.45	3.10
CB-636*	10 x 17 x 3	20	3.85	3.45	3.10
CB-655*	10 x 17 x 3	18	4.90	4.40	3.90
CB-640*	10 x 17 x 4	18	6.15	5.55	4.90
CB-623	10 x 17 x 5	18	8.75	7.90	7.00
CB-656	10 x 23 x 3	18	5.75	5.20	4.60
CB-657*	11 x 17 x 2	18	4.50	4.05	3.60
CB-658*	11 x 17 x 3	18	5.25	4.75	4.20
CB-663*	12 x 17 x 2	18	5.00	4.50	4.00
CB-664*	12 x 17 x 3	18	5.50	4.95	4.40
CB-659*	13 x 17 x 2	18	5.65	5.10	4.50
CB-660*	13 x 17 x 3	18	6.50	5.85	5.20
CB-642*	13 x 17 x 4	18	7.60	6.85	6.10
CB-625	13 x 17 x 5	18	9.60	8.65	7.70

*Punched to accommodate chassis mounting brackets.

BURGESS® BATTERIES

IGNITION AND TELEPHONE BATTERIES

Burgess No.	Volts	Size in Inches, L. x W. x H.	Unit Pkg.	List Price	Net Each*
4FH	1½	2⅝ x 2⅝ x 4	12	$1.69	$1·13
410 (4FM)⁑	1½	2⅝ x 2⅝ x 4	12	1.69	1·13
6 Ign.**	1½	2½ dia. x 6⅝	12	1.79	1·20
6 Ind.	1½	2½ dia. x 6⅝	12	1.79	1·20
6 Tel.**	1½	2½ dia. x 6⅝	12	1.79	1·20
4F2H	3	3 29/32 x 2 11/16 x 5 13/32	1	5.75	3·85
4F4H	6	8 5/16 x 2 13/16 x 5 13/16	1	7.00	4·67
S461	6	10½ x 2¾ x 7 13/32	4	6.45	4·30
4F5H	7½	7 3/16 x 3 31/32 x 5 13/16	1	7.90	5·30
4F6H	9	8½ x 3 31/32 x 5 13/16	1	8.95	5·97
2F8H	12	8 5/16 x 2 13/16 x 5 13/16	1	6.35	4·25
2G8H	12	10½ x 2¾ x 7 13/32	1	8.60	5·73

PHOTOFLASH BATTERIES

Burgess No.	Volts	Size in Inches, L. x W. x H.	Unit Pkg.	List Price	Net Each*
120††	1½	1 dia. x 1 15/16	12	$ 0.35	$ 0·22¼
720††	1½	13/32 dia. x 1¾	24	.30	·19½
920††	1½	35/64 dia. x 1 31/32	24	.30	·19½
U10	15	1 x 39/64 x 1 7/16	1	1.50	1·03
Y10	15	19/32 x 19/32 x 1 23/64	1	1.50	1·03
U15	22½	31/32 x 9/16 x 1 31/32	1	1.75	1·17
Y15	22½	19/32 x 19/32 x 1 31/32	1	1.75	1·17
U20	30	1 x 39/64 x 2 17/32	1	1.95	1·30
M30	45	3 9/16 x 1¾ x 5½	1	4.55	3·27
K45	67½	2 11/16 x 1 5/16 x 2¼	1	4.25	2·97
V60	90	3 23/32 x 1 9/32 x 3 11/16	1	4.85	3·40
XX150	225	4¼ x 2⅝ x 4¼	1	10.95	7·67
U160	240	2 9/16 x 1 5/16 x 4 13/32	1	10.25	7·20
U320	510	2 15/16 x 1 17/32 x 5 7/16	1	18.50	13·00

MERCURY BATTERIES

Flat terminals except H146X, H177, H286 and H289 which are snap type.

Burgess No.	Volts	Size in Inches, Dia. x H.	Unit Pkg.	List Price	Net Each*
Hg-1R	1.35	⅝ x 21/32	4	$1.35	$0·88
Hg-3R	1.35	1 x 21/32	4	2.10	1·36
Hg-4R	1.35	1 13/64 x 21/32	4	2.70	1·74
Hg-12R	1.35	⅝ x 2	2	2.10	1·36
Hg-42R	1.35	1 13/64 x 2⅜	1	5.94	3·84
Hg-400R	1.35	29/64 x 9/64	6	1.08	·72
Hg-401R	1.35	29/64 x 1⅛	2	1.35	·88
Hg-450R	1.35	29/64 x 9/16	4	1.35	·88
Hg-502R	1.35	17/32 x 1 31/32	2	1.89	1·23
Hg-601R	1.35	⅝ x 1 9/64	2	1.89	1·23
Hg-625R	1.35	⅝ x ¼	4	1.18	·78
Hg-630R	1.35	⅝ x ¼	4	1.18	·78
Hg-640R	1.35	⅝ x 7/16	4	1.18	·78
HPX-13	1.35	⅝ x ¼	4§§	4.32	2·88
HPX675	1.35	....	6	1.08	·72
Hg-1	1.4	⅝ x 21/32	4	1.08	·72
Hg-9‡‡	1.4	17/32 x 1 31/32	4	4.32	2·80
Hg-12	1.4	⅝ x 2	2	1.89	1·23
Hg-42	1.4	1 13/64 x 2⅜	1	5.40	3·51
Hg-312	1.4	5/16 x 9/64	6	.40	·27
Hg-400	1.4	29/64 x 9/64	6	.80	·53
Hg-401	1.4	29/64 x 1⅛	3	3.24	2·16
Hg-520	1.4	½ x 9/32	6	.40	·27
Hg-575	1.4	29/64 x ⅛	6	.45	·30
Hg-625	1.4	⅝ x ¼	4	1.02	·67
Hg-630	1.4	⅝ x ¼	4	1.02	·67
Hg-640	1.4	⅝ x 7/16	4	1.00	·66
Hg-675	1.4	29/64 x 13/64	6	.75	·50
H132R	2.7	43/64 x 1 5/16	2	2.36	1·57
H152R	2.7	31/32 x 1 9/64	2	2.10	1·36
H162R	2.7	43/64 x 57/64	2	2.58	1·71
HPX-14	2.7	21/32 x ⅝	4	2.15	1·44
H132	2.8	21/32 x 1 5/16	2	2.10	1·22
H112R	2.7	21/32 x 19/32	2	2.70	1·80
H113R	4.05	43/64 x 27/32	2	3.08	2·07
H133R	4.05	21/32 x 2	2	3.00	2·00
H153R	4.05	31/32 x 1 45/64	2	2.50	1·67
H163R	4.05	21/32 x 1 5/16	2	3.34	2·23
HPX25	4.05	....	2	2.70	1·80
HPX29	4.05	....	2	2.10	1·36
H133‡‡	4.2	21/32 x 2	6	2.70	1·80
H163	4.2	21/32 x 1 5/16	2	2.96	1·98
H233	4.2	1 1/64 x 1 31/32	1	4.86	3·23
H114R	5.4	43/64 x 1 3/32	2	3.50	2·28
H134R	5.4	43/64 x 2⅝	2	3.65	2·42
H164R	5.4	21/32 x 1¾	2	3.66	2·44
H164	5.6	21/32 x 1¾	6	2.70	1·80
HPX-4	5.6	21/32 x 1 61/64	1	3.18	2·13
HPX23	5.6	....	6	1.08	·72
H115R	6.75	43/64 x 1 21/64	2	4.00	2·60
H135R	6.75	43/64 x 3 9/32	2	4.30	2·88
H165R	6.75	21/32 x 2 13/64	2	3.98	2·66
H145	7.0	21/32 x 1 13/64	2	2.50	1·74
H165	7.0	21/32 x 2 13/64	2	3.50	2·33
H175	7.0	....	1	2.42	1·61
H136R	8.1	43/64 x 3 15/16	2	4.85	3·22
H126	8.4	47/64 x 2	6	2.70	1·80
H146X‡‡	8.4	1 1/32 x 21/32 x 1¾	6	1.95	1·30
H286	8.4	1 x 1 15/16	6	2.70	1·80
HPX-6	8.4	21/32 x 4 3/32	1	4.85	3·15
H137R	9.45	43/64 x 4 19/32	1	5.40	3·61
H177	9.8	35/64 x 1 29/32	6	2.70	1·80
H169	12.6	43/64 x 3 63/64	1	5.94	3·96
H289	12.6	1 x 2 25/64	6	5.40	3·61

INDUSTRIAL MERCURY BATTERIES

Burgess No.	Volts	Cap., mAH	T ⧗	Size in Inches, L. x W. x H.	Wt., Lbs.	Net Each
302157	1.35	28,000	‡	2 7/16 x 1 5/16 x 4 3/16	.844	$13.50
302651	1.35	14,000	▪	1¼ dia. x 2⅜	.388	5.18
302702	2.7	2,200	#	1 1/16 dia. x 1 19/32	.125	4.42
303236	4.2	1,000	†	⅝ dia. x 1 15/16	.080	1.55
303496	4.2	....	....	....	.15	1.39
302351	5.4	2,200	†	1 1/32 dia. x 2 9/16	.281	7.23
302904	5.4	3,400	#	1 9/32 dia. x 2 29/32	.418	8.10
302435	6.75	250	†	21/32 dia. x 1 15/32	.045	3.73
302497	6.75	2,200	▲	1 1/32 dia. x 3 11/16	.375	10.76
302642	6.75	2,400	†	1¼ dia. x 2 9/16	.394	6.15
302905	6.75	3,400	#	1 9/32 dia. x 3 17/32	.522	9.17
303145	8.4	2,400	♦	2 3/16 x 27/32 x 4 9/16	.551	8.31
302250	9.45	250	§	21/32 dia. x 1⅞	.062	3.34
302907	9.45	3,400	#	1 9/32 dia. x 2 27/32	.728	11.88
302478	9.8	2,400	†	1¼ dia. x 3 9/16	.556	8.31
303219	9.8	160	●	½ dia. x 1 9/16	.030	2.22
302358	10.8	250	#	11/16 dia. x 2⅛	.055	4.42
302908	10.8	3,400	#	1 9/32 dia. x 5½	.831	13.50
303394	11.2	3,600	♦	2½ x 1¾ x 2 3/16	.750	12.20
302362	16.2	250	#	11/16 dia. x 3 3/32	.076	6.04
303314	16.8	2,400	†	2⅞ x 1 13/16 x 1 5/16	.800	11.56
302580	27	3,400	‡	2 21/32 x 2 21/32 x 3 27/32	2.010	36.28
302579	29.7	250	#	1 11/32 x 11/16 x 3⅛	.312	13.50
302465	47.25	1,000	#	2 1/16 dia. x 3⅝	1.062	25.91
302462	97.2	1,000	#	2¾ x 1 15/32 x 6 11/32	2.000	43.21

ALKALINE BATTERIES

Burgess No.	Volts	Size in Inches, Dia. x H.	Unit Pkg.	List Price	Net Each*
AL-1‡‡	1½	63/64 x 1 15/16	12	$0.80	$0·52
AL-2	1½	1 21/64 x 2 13/32	12	1.00	·65
AL-7‡‡	1½	13/32 x 1¾	12	.70	·455
AL-9‡‡	1½	17/32 x 1 31/32	24	2.80	1·82
AL-N‡‡	1½	29/64 x 1⅛	2	1.20	·78
APX825‡‡	1½	....	24	1.60	1·04
APX-24	3	21/32 x 2	6	1.75	1·14
APX30	3	....	6	1.60	1·05
AL-133‡‡	4½	21/32 x 2	6	1.95	1·27
APX-19	4½	21/32 x 2 13/32	6	1.95	1·27
APX-21	4½	21/32 x 2 1/32	2	1.95	1·27

NICKEL-CADMIUM CELLS AND BATTERIES

Types with suffix **L** have solder lugs for terminals.

Burgess No.	Volts	Size in Inches, L. x W. x H.	Unit Pkg.	List Price	Net Each*
CD1	1.25	.460 dia. x .225	1	$ 2.25	$ 1·50
CD2	1.25	.610 dia. x .236	1	1.75	1·17
CD3	1.25	.984 dia. x .275	1	1.95	1·30
CD3L	1.25	.984 dia. x .300	1	2.25	1·50
CD4	1.25	.984 dia. x .350	1	2.00	1·33
CD4L	1.25	.984 dia. x .375	1	2.30	1·53
CD5	1.25	1.700 dia. x .300	1	2.95	1·97
CD5L	1.25	1.700 dia. x .325	1	3.25	2·17
CD6 (AA)	1.25	.560 dia. x 1.950	1	3.05	2·14
CD6L (AA)	1.25	.560 dia. x 2.275	1	3.25	2·27
CD8	1.25	.984 dia. x .232	1	1.90	1·27
CD8L	1.25	.984 dia. x .257	1	2.20	1·47
CD9	1.25	.550 dia. x 3.680	1	6.69	4·68
CD10 (D)	1.25	1.300 dia. x 2.425	1	10.20	7·13
CD10L (D)	1.25	1.300 dia. x 2.775	1	10.40	7·26
CD12##	1.25	.876 dia. x 1.672	1	4.55	3·03
CD12L##	1.25	.876 dia. x 1.672	1	4.85	3·23
CD13●●	1.25	1.273 dia. x 1.440	1	11.05	7·37
CD13L●●	1.25	1.273 dia. x 1.440	1	11.35	7·57
CD14 (C)	1.25	1.010 dia. x 1.945	1	6.38	4·46
CD16▲▲	1.25	1.300 dia. x 2.425	1§§	9.58	6·70
CD17L	1.25	....	1	16.47	11·52
CD100	1.25	1.36 x .75 x 3.36	1	8.96	12·64
CD101	1.25	1.36 x 1.36 x 2.40	1	9.36	12·91
CD102	1.25	1.36 x 1.36 x 3.36	1	20.18	13·45
CD107	1.25	1.93 x 1.67 x 4.25	1	24.84	16·56
CD108	1.25	3.56 x 1.05 x 4.90	1	41.12	27·41
CD109	1.25	3.56 x 1.34 x 4.90	1	48.38	32·25
CD110	1.25	3.56 x 1.66 x 4.90	1	56.54	37·69
CD111	1.25	3.56 x 1.97 x 4.90	1	65.52	43·68
CD21	6	1.065 dia. x 1.525	1	12.75	8·92
CD22	6	1.065 dia. x 1.975	1	13.50	9·44
CD23	6	1.800 dia. x 1.725	1	20.45	14·30
CD30	6	1½ x 1½ x 3 13/16	1	42.25	29·55
CD31	6	3 13/16 x 1 17/32 x 3⅝	1	53.50	35·55
CD33	6	5⅜ x 2⅞ x 4 15/16	1	47.20	33·02
CD200	6	5.0 x 1.0 x 1.813	1	33.00	23·10
CD207	6	7.031 x 1.406 x 2.594	1	61.20	42·80
CD24	9.6	1.065 dia. x 2.650	1	19.50	13·63
CD25	9.6	1.065 dia. x 3.200	1	19.66	13·75
CD25L	9.6	1.065 dia. x 3.200	1	19.80	13·85
CD26	9.6	1.800 dia. x 2.575	1	32.83	22·96
CD27	12	1.065 dia. x 2.925	1	23.33	16·32
CD28	12	1.065 dia. x 3.600	1	24.97	17·46
CD29	12	1.800 dia. x 3.100	1	38.75	27·12
CD201	12	5.0 x 2.0 x 1.813	1	54.55	36·38
CD202	12	10.0 x 1.0 x 1.813	1	52.60	36·79
CD208	12	7.031 x 2.813 x 2.594	1	111.70	78·12
CD209	12	14.063 x 1.406 x 2.594	1	114.75	80·26
CD204	24	5.0 x 4.0 x 1.813	1	93.30	65·31
CD205	24	10.0 x 2.0 x 1.813	1	92.80	64·92
CD211	24	7.031 x 5.625 x 2.594	1	215.00	150·47
CD212	24	14.063 x 2.813 x 2.594	1	215.00	150·47

*In unit package quantities; add 10% for less than standard pkg. quantities. ⧗Terminals: †Flat; ‡Socket; §Tabs; #Leads; ●Button; ▲Posts; ▪Special leads; ♦Snap. ⁑Hobby type. **Specify screw or spring clip terminals. ††Display. ‡‡Available in blister-pack; price on request. §§Per card. ##Short C. ●●Half D. ▲▲Blister pack of two.

EVEREADY® Batteries

TRANSISTOR ENERGIZER BATTERIES FOR PORTABLE RADIO AND ELECTRONIC APPLICATIONS

No.	Voltage	Overall Size, In. L. x W. x H.	Terminals and Voltages	Battery Weight	Unit Pkg.	Unit Lbs.	List Price Ea.	Net Each in Unit Pkg.
206‡	9	¾ dia. x 2	Flat Contacts, Neg. Recess. –, +9	1.2 oz.	6	0.5	$0·89	$0·62
216‡	9	1 1/32 x 21/32 x 1 29/32	Min. Snap –, +9	1.5 oz.	12	1.0	·79	·54
222‡	9	1 1/32 x 21/32 x 1 29/32	Min. Snap –, +9	1.5 oz.	12	1.9	·98	·64
226‡	9	1 dia. x 1 15/16	Snap Type –, +9	2 oz.	6	0.6	1·19	·79
228	12	1 dia. x 2 7/16	Snap Type –, +12	2.3 oz.	1	0.2	1·75	1·20
239	9, 13½	1 21/64 x 1 1/32 x 2 11/16	Socket –, +9, +13½	3 oz.	1	0.2	3·90	2·67
243	4½	1 13/32 x 1 11/32 x 2¾	Min. Snap –, +4½	4.5 oz.	1	0.3	3·50	2·39
246	9	1 13/32 x 1 11/32 x 2¾	Min. Snap –, +9	4.5 oz.	1	0.3	2·25	1·54
266	9	1 13/16 x 1 13/16 x 2 7/16	Snap Type –, +9	7 oz.	1	0.4	1·95	1·36
276	9	2 9/16 x 2 1/32 x 3 5/32	Snap Type –, +9	15 oz.	1	0.9	2·50	1·71
333‡	4½	.662 dia. x 1.965	Flat Contacts –, +4½	0.9 oz.	6	0.1	1·25	·87
773	7½	3 29/32 x 27/32 x 3	5 Knurled Nut and Screws, 1 wire +1, –1.5, –3, –4.5, –6, –7.5	9 oz.	1	0.5	3·50	2·40
1015†	1½	9/16 dia. x 1 31/32	Flat Contacts –, +1½	0.6 oz.	24	0.9	·30	·19
2356N	9	2 3/16 x 1 5/32 x 6¼	Snap Type –, +9	11 oz.	1	0.8	3·50	2·40
2506	3, 6, 9	8 x 2 13/16 x 1 9/16	Socket –, +3, +6, +9	1 lb. 8 oz.	1	1.3	3·95	2·71
2709N	9	1 13/32 x 47/64 x 4 11/16	Snap Type –, +9	2.5 oz.	1	0.2	2·75	1·88
2713N	6	1 13/32 x 47/64 x 4 11/16	Min. Snap –, +6	3.5 oz.	1	0.2	3·50	2·40
2731N	4½	2 13/16 x 1¾ x 8 11/32	Socket –, +4½	1 lb. 9 oz.	1	1.8	5·50	3·77
2761N	9	2 9/32 x 1¼ x 7 31/32	Socket –, +9	1 lb. 3 oz.	1	1.4	7·50	5·14
2762N	9	2 13/16 x 1¾ x 8 11/32	Socket –, +9	1 lb. 9 oz.	1	1.7	5·50	3·77

SEALED RECHARGEABLE NICKEL-CADMIUM BATTERIES FOR PORTABLES AND ELECTRONIC APPLICATIONS

No.	Former No.	Voltage	Overall Size, In. L. x W. x H.	Terminals and Voltages	Unit Pkg.	Battery Weight	List Price Each	Net Each in Unit Pkg.
B1	N39	1.25	1.98 dia. x .394	Flat Contacts –, +1.25	1	1.6 oz.	$ 5·05	$ 3·37
B1T*	N39T	1.25	1.98 dia. x .406	Solder Tabs –, +1.25	1	1.6 oz.	5·35	3·57
BH1	N40	1.25	1.98 dia. x .396	Flat Contacts –, +1.25	1	2.1 oz.	6·00	4·00
BH1T*	N40T	1.25	1.98 dia. x .406	Solder Tabs –, +1.25	1	2.1 oz.	6·30	4·20
CF1	....	1.25	1.034 dia. x 1.165	Flat Contacts –, +1.25	1	2.1 oz.	4·55	3·03
CF1T*	....	1.25	1.034 dia. x 1.175	Solder Tabs –, +1.25	1	2.1 oz.	4·85	3·23
CH1	....	1.25	1.034 dia. x 1.165	Flat Contacts –, +1.25	1	2.1 oz.	4·15	2·77
CH1T*	....	1.25	1.034 dia. x 1.175	Solder Tabs –, +1.25	1	2.1 oz.	4·45	2·97
CF1.2	....	1.25	0.900 dia. x 1.684	Flat Contacts –, +1.25	1	1.7 oz.	5·00	3·34
CF1.2T*	....	1.25	0.900 dia. x 1.689	Solder Tabs –, +1.25	1	1.7 oz.	5·30	3·54
CH1.2	N53	1.25	0.900 dia. x 1.684	Flat Contacts –, +1.25	1	1.7 oz.	4·55	3·03
CH1.2T*	N53T	1.25	0.900 dia. x 1.689	Solder Tabs –, +1.25	1	1.7 oz.	4·85	3·23
CH1.8	N54	1.25	1.031 dia. x 1.969	Flat Contact –, Solder Tab +1.25	1	2.3 oz.	8·95	5·97
CH1.8T*	N54T	1.25	1.031 dia. x 1.974	Solder Tabs –, +1.25	1	2.3 oz.	9·25	6·17
B2	N41	1.25	1.984 dia. x .689	Flat Contacts –, +1.25	1	3.4 oz.	8·25	5·50
B2T*	N41T	1.25	1.984 dia. x .701	Solder Tabs –, +1.25	1	3.4 oz.	8·55	5·70
CH2.2	N55	1.25	1.344 dia. x 1.508	Flat Contacts –, +1.25	1	5.4 oz.	11·05	7·37
CH2.2T*	N55T	1.25	1.344 dia. x 1.518	Solder Tabs –, +1.25	1	5.4 oz.	11·35	7·57
B3	N43	1.25	1.984 dia. x .984	Flat Contacts –, +1.25	1	4.8 oz.	10·40	6·94
B3T*	N43T	1.25	1.984 dia. x .996	Solder Tabs –, +1.25	1	4.8 oz.	10·70	7·14
CF4	....	1.25	1.294 dia. x 2.390	Flat Contact –, Solder Tab +1.25	1	5.4 oz.	11·50	7·67
CF4T*	....	1.25	1.294 dia. x 2.410	Solder Tabs –, +1.25	1	5.4 oz.	11·80	7·87
CH4	N57	1.25	1.344 dia. x 2.406	Flat Contact –, Solder Tab +1.25	1	5.4 oz.	10·45	6·97
CH4T*	N57T	1.25	1.344 dia. x 2.416	Solder Tabs –, +1.25	1	5.4 oz.	10·75	7·17
R6	N76	1.25	2 31/32 x 1 45/64 x 3 45/64	Nut & Stud –, +1.25	1	15.2 oz.	20·40	13·61
RH7	N78	1.25	1⅝ x 1 33/64 x 4 1/64	Nut & Stud –, +1.25	1	12.5 oz.	28·35	18·91
R11	N79	1.25	3 19/32 x 1 1/16 x 4 59/64	Nut & Stud –, +1.25	1	1 lb. 12 oz.	28·60	19·08
R15	N81	1.25	3 19/32 x 1 25/64 x 4 59/64	Nut & Stud –, +1.25	1	2 lb. 3 oz.	34·40	22·94
RH15	N82	1.25	3 19/32 x 1 3/16 x 4 31/32	Nut & Stud –, +1.25	1	1 lb. 10 oz.	48·25	32·18
B20	N22	1.25	.457 dia. x .213	Flat Contacts –, +1.25	1	0.4 oz.	2·25	1·50
B20T*	N22T	1.25	.457 dia. x .223	Solder Tabs –, +1.25	1	0.4 oz.	2·55	1·70
R23	N85	1.25	3 19/32 x 2 1/64 x 4 59/64	Nut & Stud –, +1.25	1	3 lb. 2 oz.	47·80	31·88
B50	N24	1.25	.610 dia. x .235	Flat Contacts –, +1.25	1	0.12 oz.	1·75	1·17
B50T*	N24T	1.25	.610 dia. x .245	Solder Tabs –, +1.25	1	0.12 oz.	2·05	1·37
N64	....	15	2.81 x 2.81 x 1.32	Recessed Flat Contacts –, +15	1	13 oz.	86·50	57·60
N65	....	13.75	7.32 x 1.46 x 3.10	Socket –, +13.75	1	1 lb. 11 oz.	143·75	95·87
N67	....	6.25	1 31/64 x 1 33/64 x 4 13/64	Wire Leads –, +6.25	1	8.3 oz.	38·80	25·88
N70	....	6.25	3⅞ x 1 9/16 x 4 1/32	Wire Leads –, +6.25	1	1 lb. 12 oz.	53·30	35·55
OB70	....	1.25	1.012 x .559 x .236	Flat Contacts—, +1.25	1	0.3 oz.	2·95	1·97
OB70T*	....	1.25	1.012 x .559 x .246	Solder Tabs –, +1.25	1	0.3 oz.	3·25	2·17
N86	....	12.5	4 1/32 x 2 1/32 x 2 7/16	Knurl, Nut and Screw –, +12.5	1	1 lb. 8 oz.	54·55	36·38
N88	....	8.75	1 3/64 x 39/64 x 1 15/16	Min. Snap –, +8.75	1	1.5 oz.	9·80	6·54
N91	....	6.25	5 1/32 x 1 1/32 x 2 31/64	Plastic Screw –, +6.25	1	10.0 oz.	32·55	21·77
B100	N26	1.25	.992 dia. x .252	Flat Contacts –, +1.25	1	0.32 oz.	1·90	1·27
B100T*	N26T	1.25	.992 dia. x .264	Solder Tabs –, +1.25	1	0.32 oz.	2·20	1·47
B150	N28	1.25	.992 dia. x .272	Flat Contacts –, +1.25	1	0.4 oz.	1·95	1·30
B150T*	N28T	1.25	.992 dia. x .284	Solder Tabs –, +1.25	1	0.4 oz.	2·25	1·50
CF150	....	1.25	0.475 dia. x 1.135	Flat Contacts –, +1.25	1	0.4 oz.	2·90	1·93
CF150T*	....	1.25	0.475 dia. x 1.145	Solder Tabs –, +1.25	1	0.4 oz.	3·20	2·13
CH150	....	1.25	0.475 dia. x 1.135	Flat Contacts –, +1.25	1	0.4 oz.	2·65	1·77
CH150T*	....	1.25	0.475 dia. x 1.145	Solder Tabs –, +1.25	1	0.4 oz.	2·95	1·97
B225	N32	1.25	.992 dia. x .351	Flat Contacts –, +1.25	1	0.44 oz.	2·00	1·33
B225T*	N32T	1.25	.992 dia. x .363	Solder Tabs –, +1.25	1	0.44 oz.	2·30	1·53
BH225	N33	1.25	.992 dia. x .358	Flat Contacts –, +1.25	1	0.4 oz.	2·20	1·47
BH225T*	N33T	1.25	.992 dia. x .37	Solder Tabs –, +1.25	1	0.4 oz.	2·50	1·67
CF225	....	1.25	0.675 dia. x 0.646	Flat Contacts –, +1.25	1	0.8 oz.	2·90	1·93
CF225T*	....	1.25	0.675 dia. x 0.652	Solder Tabs –, +1.25	1	0.8 oz.	3·20	2·13
CH225	....	1.25	0.675 dia. x 0.646	Flat Contacts –, +1.25	1	0.8 oz.	2·65	1·77
CH225T*	....	1.25	0.675 dia. x 0.652	Solder Tabs –, +1.25	1	0.8 oz.	2·95	1·97
B400	....	1.25	0.992 dia. x 0.571	Flat Contacts –, +1.25	1	1.2 oz.	3·85	2·57
B400T*	....	1.25	0.992 dia. x 0.583	Solder Tabs –, +1.25	1	1.2 oz.	4·15	2·77
B450	N36	1.25	1.697 dia. x .315	Flat Contacts –, +1.25	1	1.2 oz.	2·95	1·97
B450T*	N36T	1.25	1.697 dia. x .327	Solder Tabs –, +1.25	1	1.2 oz.	3·25	2·17
CF450	....	1.25	0.675 dia. x 1.116	Flat Contacts –, +1.25	1	0.8 oz.	4·05	2·70
CF450T*	....	1.25	0.675 dia. x 1.122	Solder Tabs –, +1.25	1	0.8 oz.	4·35	2·90
CH450	....	1.25	0.675 dia. x 1.116	Flat Contacts –, +1.25	1	0.8 oz.	3·70	2·47
CH450T*	....	1.25	0.675 dia. x 1.122	Solder Tabs –, +1.25	1	0.8 oz.	4·00	2·67
BH500	N38	1.25	1.36 dia. x .394	Flat Contacts –, +1.25	1	1 oz.	3·55	2·37
BH500T*	N38T	1.25	1.36 dia. x .416	Solder Tabs –, +1.25	1	1 oz.	3·85	2·57
CF500	....	1.25	0.563 dia. x 1.974	Flat Contacts –, +1.25	1	0.8 oz.	3·45	2·30
CF500T*	....	1.25	0.563 dia. x 1.969	Solder Tabs –, +1.25	1	0.8 oz.	3·75	2·50
CH500	....	1.25	.563 dia. x 1.969	Flat Contacts –, +1.25	1	0.8 oz.	3·15	2·10
CH500T*	....	1.25	.563 dia. x 1.974	Solder Tabs –, +1.25	1	0.8 oz.	3·45	2·30
1007	....	10	6 13/32 x 3 7/32 x 3⅛	Socket –, +10	1	3 lb. 8 oz.	86·90	57·96
1007W	....	10	6 13/32 x 3 7/32 x 3⅛	Wire Leads –, +10	1	3 lb. 8 oz.	93·20	62·16

*Have tabs to permit soldering leads to battery without damage. †Also available (prices on request); Blister Pack of 4; ‡Blister Pack.

EVEREADY® Batteries

SPECIAL BATTERY TYPES FOR RADIOS, ELECTRONIC EQUIPMENT, PHOTOFLASH AND OTHER APPLICATIONS

"Eveready No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Terminals and Voltages	Battery Weight	Unit Pkg. Qty.	Unit Wt. Lbs.	List Price Each	Net Ea. in Unit Pkg.
S13*	1½	.310 dia. x .210	Flat Contacts −, +1½	0.04 oz.	6	0.02	$ 0.48	$ 0.32
EPX30†	3	.955 dia. x .480	Flat Contacts −, +3	0.5 oz.	6	0.3	1.60	1.04
T35‡	1½	1 1/32 dia. x 1 15/16	Flat Contacts −, +1½	1.4 oz.	6	0.6	.60	.39
T50‡	1½	1 11/32 dia. x 2 13/32	Flat Contacts −, +1½	3.3 oz.	6	1.2	.75	.48
EPX77*	1½	.455 dia. x .220	Flat Contacts −, +1½	0.09 oz.	6	0.1	1.68	1.08
S312*	1½	.310 dia. x .140	Flat Contacts −, +1½	0.02 oz.	6	0.02	.57	.315
425P	22½	1 23/64 x 1 1/32 x 3 15/16	Socket −, +22½	4.1 oz.	1	0.3	4.50	3.08
455P	45	2 21/32 x 1 1/64 x 3 29/32	Socket −, +45	8.6 oz.	1	0.5	3.75	2.57
460K#	45	1 57/64 x 1⅜ x 2.43	Flat Contacts −, +45	5.3 oz.	1	0.8	3.50	2.40
468	67½	2 13/16 x 1⅜ x 3 45/64	Snap Type −, +67½	12 oz.	1	0.8	4.25	2.91
489	225	4 11/32 x 2 11/16 x 4 3/16	Socket −, +225	2 lb. 12 oz.	2	2.7	11.50	7.88
491	240	2 19/32 x 1 5/16 x 4½	Flat Recessed & Socket −, +240	13 oz.	1	0.8	10.99	7.53
492	180, 225	3 9/16 x 2 29/32 x 4 29/32	Socket −, +180, +225	2 lb. 8 oz.	1	2.5	14.00	9.59
493	300	2 11/16 x 2 7/32 x 3 29/32	Pinjacks −, +300	14.5 oz.	1	1.2	14.25	9.75
496	450	6¾ x 3 x 5	Socket −, +450	5 lb. 4 oz.	1	5.7	22.95	15.76
497	180, 510	3 x 1 19/32 x 5⅝	Flat Recessed −, +180, +510	1 lb. 10 oz.	1	1.6	19.90	13.63
621	3	2 9/16 dia. x 13⅛	Knurled Nut & Screw −, +3	4 lb. 10 oz.	1	4.5	7.00	4.79
812§	1.5	13/32 dia. x 1¾	Flat Contacts −, +1.5	0.3 oz.	12	0.2	.30	.195
815§	1.5	9/16 dia. x 1 31/32	Flat Contacts −, +1.5	0.6 oz.	24	1.0	.30	.195
EPX825*§	1.5	.905 dia. x .228	Flat Contacts −, +1.5	0.026 oz.	24	0.04	1.60	1.05
835§	1.5	1 1/32 dia. x 1 15/16	Flat Contacts −, +1.5	1.4 oz.	24	2.3	.70	.455
850	1.5	1 11/32 dia. x 2 13/32	Flat Contacts −, +1.5	3.3 oz.	12	2.1	.35	.2225

"B" BATTERIES FOR PORTABLE RECEIVERS

"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Contacts	List Price Each	Net Each *	"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Contacts	List Price Each	Net Each *
411	15	1 1/32 x ⅝ x 1 29/64	Flat	$1.50	$1.03	**477**	63	1 29/32 x 63/64 x 5 7/16	Snap	$3.95	$2.71
412	22½	1 1/32 x ⅝ x 2	Flat	1.75	1.20■	**479**	90	1 31/32 x 1 1/32 x 7 15/32	Snap	4.35	2.98
413	30	1 1/32 x ⅝ x 2 9/16	Flat	1.95	1.34	**482**	45	3 19/32 x 1 27/32 x 5½	Socket	4.35	2.98
415	45	1 3/64 x ⅝ x 3 11/16	Snap♦	2.75	1.88	**484**	45	3 31/32 x 2 17/32 x 5 5/16	Socket	5.95	4.08
416	67½	1 21/64 x 63/64 x 3½	Snap♦	3.25	2.23	**487**	22½, 45	5⅛ x 2 1/16 x 7¼	Socket	6.25	4.27
417	15	1 15/16 x 31/32 x 1 9/16	Flat	2.50	1.71	**490**	90	3 23/32 x 1⅜ x 3 45/64	Snap	4.75	3.25
420	22½	1 5/16 x 31/32 x 2 3/16	Flat	2.95	2.02	**495**	90	1 15/16 x 1 15/32 x 7⅛	Snap	6.50	4.45
430	30	1 5/16 x 1 x 2 13/16	Flat	3.50	2.40	**504**	15	39/64 x 19/32 x 1⅜	Flat	1.50	1.03
437	75	1 15/16 x 1 15/32 x 6 15/32	Snap	5.50	3.77	**505**	22½	19/32 x 19/32 x 1.975	Flat	1.75	1.20
455	45	2 21/32 x 1 x 3 11/16	Snap	3.35	2.29	**506**	30	1 13/64 x ⅝ x 1 27/64	Flat	3.70	2.53
457	67½	2 13/16 x 1⅜ x 2½	Snap	4.25	2.91	**507**	30	39/64 x 19/32 x 2.605	Flat	2.25	1.54
467	67½	2 13/16 x 1⅜ x 3 45/64	Snap	3.95	2.71	**738**	22½, 45	3 x 2 5/16 x 4⅛	Socket	5.00	3.42

"A" BATTERIES FOR PORTABLE RECEIVERS

707	7½	2 9/16 x 2 1/32 x 2 13/16	Snap	$2.50	$1.71	**742**	1½	2⅝ x 2⅝ x 3 27/32	Socket	$1.80	$1.23
713	7½	3 29/32 x 53/64 x 2 27/32	Socket	3.95	2.71	**743**	1½	3 13/16 x 2⅝ x 4 1/32	Socket	4.25	2.91
717	7½	2 5/32 x 1 15/16 x 3 1/32	Socket	1.90	1.30	**744**	6	2⅝ x 2⅝ x 3 27/32	Socket	1.75	1.20
718	6	3 29/32 x 2¾ x 5 7/16	Socket	4.70	3.22	**746**	4½	3 15/16 x 1 15/16 x 4 21/32	Socket	3.90	2.67
720	1½	2 25/32 x 1 13/32 x 3 1/32	Socket	3.00	2.05	**960P**	1½	1 11/32 dia. x 4 1/16	Socket	1.95	1.34
724	6	1 7/32 x 1 7/32 x 2 11/32	Flat	2.25	1.54	**964**	1½	1 11/32 dia. x 4 5/32	Flat	1.10	.75
726	4½	4 3/32 x 1 7/16 x 2 15/16	Socket	3.50	2.40	**1035§**	1½	1 1/32 dia. x 1 15/16	Flat	.35	.2225⌶
736	4½	3 15/16 x 1 5/16 x 4	Socket	2.75	1.88	**1050§**	1½	1 11/32 dia. x 2 13/32	Flat	.35	.2225⁝
741	1½	3 25/32 x 2 11/16 x 5⅜	Socket	4.65	3.18						

"A-B" PACKS FOR PORTABLES AND FARM RECEIVERS

729	1½, 90	3 27/32 x 2 7/32 x 7 13/16	Socket	$10.50	$7.19	**756**	7½, 9, 90	8⅞ x 2⅛ x 3 25/32	Socket	$11.00	$ 7.53
752	9, 90	14 1/16 x 2 11/16 x 4 1/16	Plug	12.50	8.56	**757**	9, 90	9 7/32 x 2 23/32 x 4 7/32	Plug	14.90	10.21
753	7½, 9, 90	9 7/32 x 2 23/32 x 4 5/16	Socket	13.90	9.52	**759**	1½, 90	15 11/16 x 4 1/32 x 6 15/16	Socket	17.00	11.64
755	6, 7½, 75	8 9/16 x 3¾ x 2 7/16	Socket	11.90	8.15						

CARBON-ZINC LANTERN AND FLASHER BATTERIES

"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Unit Pkg. Qty.	List Price Each	Net Ea. in Unit Pkg.
409	6	2⅝ x 2⅝ x 4 13/32	1	##	##
509	6	2⅝ x 2⅝ x 4 13/32	1	$1.79	$1.20
510F	6	2⅝ x 2⅝ x 4 13/32	1	1.89	1.25
510S	6	2⅝ x 2⅝ x 4 5/16	1	1.79	1.20
520†	6	5 17/32 x 4 21/32 x 2 21/32	1	6.50	4.34
609	6	2⅝ x 2⅝ x 4 13/32	1	2.19	1.37
646	69	2 9/16 x 2⅛ x 8 7/64	2	5.75	3.83
731	6	5 11/32 x 2 27/32 x 4 15/16	1	3.70	2.47
732	12	5 11/32 x 2 27/32 x 4 15/16	1	4.25	2.84
2744N	6	2⅝ x 2⅝ x 3 27/32	1	1.69	1.13
2745N	6	2⅝ x 2⅝ x 4 13/32	1	1.69	1.13
2746N	6	2⅝ x 2⅝ x 4 5/16	1	1.69	1.13
2780N	12	5 11/32 x 2 27/32 x 4 5/32	1	4.70	3.13

CARBON-ZINC NO. 6 AND "HOT SHOT"® BATTERIES

IS6**	1½	2⅝ dia. x 6 21/32	1	$ 1.79	$1.20
IF6**	1½	2⅝ dia. x 6 21/32	1	1.79	1.20
GS6††	1½	2⅝ dia. x 6 21/32	1	1.79	1.20
GF6††	1½	2⅝ dia. x 6 21/32	1	1.79	1.20
RS6‡‡	1½	2⅝ dia. x 6 21/32	1	1.79	1.20
RF6‡‡	1½	2⅝ dia. x 6 21/32	1	1.79	1.20
1461••	6	10 7/16 x 2 23/32 x 7 7/32	1	6.45	4.30
1462••	6	5¼ x 5¼ x 7¼	1	7.49	4.99
1463••	12	10 7/16 x 2 23/32 x 7 7/32	1	8.60	5.73
1562••	7½	7 27/32 x 4 31/32 x 7 7/32	1	8.49	5.65
1662••	9	7 13/16 x 5 9/32 x 7¼	1	9.49	6.32
1862••	12	10¼ x 5¼ x 6⅝	1	14.00	9.45

CARBON-ZINC SPECIAL LIGHTING AND HOBBY BATTERIES

706	6	8 5/16 x 2 13/16 x 6 7/16	1	$ 7.00	$ 4.67
711	1½	2⅝ x 1 5/16 x 4 1/32	1	1.59	1.06
715	7½	7¼ x 4 1/16 x 6 7/16	1	7.95	5.30
716	9	8 37/64 x 4 1/16 x 6 7/16	1	8.95	5.97
735	1½	2⅝ x 2⅝ x 4 5/16	1	1.69	1.33
789	3	5¼ x 1 13/32 x 3 11/32	1	5.50	3.77
799	49½	8 x 4⅜ x 8⅝	1	24.50	16.78

SPECIAL BATTERIES FOR RADIOS, ELECTRONIC EQUIPMENT, TEST INSTRUMENTS, AND OTHER APPLICATIONS

"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Unit Pkg. Qty.	List Price Each	Net Ea. in Unit Pkg.
W350	45	3 1/16 x 1⅞ x 4 31/32	1	$ 5.50	$ 3.76
W352	3	2⅝ x 1 5/16 x 4 1/32	1	3.00	2.06
W353	1½	2 19/32 x 1⅜ x 4 5/32	1	2.10	1.44
W356	3	2⅝ x 2⅝ x 4 9/16	1	4.40	3.01
W357	3	3 25/32 x 2 11/16 x 5 13/16	1	3.95	2.70
W359	45	3 9/16 x 2¼ x 4½	1	7.20	4.94
W361	103½	1⅜ x 1⅜ x 11 23/32	1	8.50	5.82
W362	7½	2 27/32 x 19/32 x 1 29/32	1	7.20	4.94
W363F■■	45	8 1/32 x 4 1/16 x 7⅝	1	16.50	11.30
W364F	45	8⅛ x 4 7/16 x 7 11/16	1	18.00	12.33
W365F■■	45	8 1/16 x 2 15/16 x 7⅝	1	16.50	11.30

FLASHLIGHT BATTERIES—FOR TOYS, GAMES, ETC.

904	1½	0.455 dia. x 1.180	6	$0.15	$0.095
912§	1½	13/32 dia. x 1¾	12	.25	.1625
915§	1½	9/16 dia. x 1 31/32	24	.25	.1625
935▲	1½	1 1/32 dia. x 1 15/16	24	.30	.195
950▲	1½	1 11/32 dia. x 2 13/32	48	.30	.195
1150	1½	1 11/32 dia. x 2 13/32	48	##	##
AA33†	1½	9/16 dia. x 1 13/32	24	.30	.1875
C66•	1½	1⅓ dia. x 1 15/16	24	.35	.2225
D99•	1½	1 11/32 dia. x 2 13/32	48	.35	.2225

CARBON-ZINC INSTRUMENT BATTERIES

703	4½	2 7/16 x 27/32 x 3 1/16	1	$ 2.25	$1.54
714	4½	3 31/32 x 1 11/32 x 3¾	1	3.00	2.05
750	3	1 7/32 x ⅝ x 2 21/32	1	2.25	1.54
751	4½	1 25/32 x ⅝ x 2 21/32	1	2.95	2.02
761T	4½	4 1/16 x 1 13/32 x 3 1/32	1	3.70	2.53
762S	45	4 3/32 x 2 9/16 x 5 7/16	1	5.50	3.77
763	22½	3½ x 2 3/32 x 3 1/16	1	2.45	2.02
766T	22½	6 13/16 x 4 3/16 x 3 5/16	1	10.50	7.20
778	22½	4 x 2 7/16 x 3⅛	1	7.95	5.45
781	4½	2 7/16 x 27/32 x 3	1	2.50	1.71

No. 1807 Charger—List Ea.... **$20.95**; Net Ea..... **$13.97***
No. 07867 Cable—List Ea..... **2.10**; Net Ea..... **1.40***

*Silver chem. system. †Alkaline. ‡For electric clocks. #Includes one No. 460 battery and one No. 428 lamp. Also available: §Blister Pack of 2; •2-Pak; ▲2-Pak and 4-Pak. *In unit pkg. of 1. ■In unit pkg. of 6. ⌶In unit pkg. of 24. ⁝In unit pkg. of 48. ♦Miniature. **Ignitor® gen. purpose 6: IS6 = screw terms.; IF6, Fahnstock. ††Gray Label® 6 telephone: GS6 = screw terms.; GF6, Fahnstock. ‡‡RR and indust. 6: RS6 = screw terms.; RF6, Fahnstock. ##**Prices on Request.** ••Hot Shot. ■■Fahnstock terms.; for plugs, order WP-363**P** or -365**P**.

EVEREADY® Batteries

MERCURY BATTERIES FOR RADIO, ELECTRONIC AND INDUSTRIAL APPLICATIONS

"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Terminals and Voltages	Battery Weight	Unit Pkg. Qty.	Unit Wt., Lbs.	List Price Each	Net Each in Unit Pkg.
E1*†	1.4	.625 dia. x .645	Flat Contacts −, +1.4	0.43 oz.	4	0.10	$ 1·08	$ 0·72
EPX1	1.35	.625 dia. x .650	Flat Contacts −, +1.35	0.43 oz.	4	0.10	1·35	·90
E3†	1.35	.985 dia. x .660	Flat Contacts −, +1.35	1.00 oz.	4	0.30	2·10	1·40
E4†	1.35	1.195 dia. x .660	Flat Contacts −, +1.35	1.6 oz.	4	0.50	2·70	1·80
EPX4	5.6	.662 dia. x 1.965	Flat Contacts −, +5.6	1.2 oz.	1	0.20	3·18	2·12
EPX6	4.05, 8.1	.662 dia. x 4.415	Flat Contacts −, +4.05, +8.1	1.6 oz.	1	0.25	4·85	3·24
E9†	1.4	.550 dia. x 1.968	Flat Contacts −, +1.4	1.05 oz.	4	0.30	1·08	·72
E12*†	1.4	.640 dia. x 1.968	Flat Contacts −, +1.4	1.4 oz.	2	0.30	1·89	1·26
E13	1.4	.310 dia. x .210	Flat Contacts −, +1.4	0.04 oz.	6	0.02	·48	·32
EPX13	1.35	.615 dia. x .238	Flat Contacts −, +1.35	0.14 oz.	4	0.20	1·08	·72
EPX14	2.7	.655 dia. x .607	Flat Contacts −, +2.7	0.3 oz.	4	0.10	2·15	1·44
EPX23	5.4	.600 dia. x .787	Flat Contacts −, +5.6	0.12 oz.	6	0.1	1·08	·72
EPX25	4.05	.660 dia. x .845	Flat Contacts −, +4.05	0.45 oz.	2	0.10	2·70	1·80
EPX29	4.05	.475 dia. x .680	Flat Contacts −, +4.05	0.3 oz.	2	0.10	2·10	1·40
E41	1.4	.455 dia. x .162	Flat Contacts −, +1.4	0.07 oz.	6	0.03	·48	·32
E42*†	1.4	1.195 dia. x 2.390	Flat Contacts −, +1.4	5.85 oz.	1	0.40	5·40	3·60
E113†	4.05	.661 dia. x .845	Flat Contacts −, +4.05	0.43 oz.	2	1.4	3·18	2·12
E114†	5.4	.661 dia. x 1.080	Flat Contacts −, +5.4	0.57 oz.	2	1.4	3·50	2·33
E115*†	7.0	.661 dia. x 1.315	Flat Contacts −, +7	0.71 oz.	2	1.4	3·78	2·52
E126†	8.4	.744 dia. x 2	Flat Contacts −, +8.4	1.65 oz.	1	0.13	2·70	1·80
E132*†	2.8	.661 dia. x 1.315	Flat Contacts −, +2.8	0.94 oz.	2	0.14	2·10	1·40
E133*†	4.2	.661 dia. x 1.965	Flat Contacts −, +4.2	1.42 oz.	12	1.10	2·70	1·80
E134*†	5.6	.661 dia. x 2.615	Flat Contacts −, +5.6	1.89 oz.	2	0.30	2·96	1·97
E135*†	7.0	.661 dia. x 3.265	Flat Contacts −, +7	2.37 oz.	2	0.40	3·50	2·33
E136*†	8.4	.661 dia. x 3.915	Flat Contacts −, +8.4	2.86 oz.	2	0.40	3·88	2·59
E137*†	9.8	.661 dia. x 4.565	Flat Contacts −, +9.8	3.34 oz.	1	0.20	4·53	3·02
E145†	7.0	.660 dia. x 1 3/16	Flat Contacts −, +7	0.7 oz.	2	0.20	2·95	1·97
E146X	8.4	1.031 x .660 x 1 3/4	Min. Snap −, +8.4	1.6 oz.	6	0.50	1·95	1·30
E152*†	2.8	.505 dia. x 1.139	Flat Contacts −, +2.8	0.4 oz.	2	0.20	1·83	1·22
E153*†	4.2	.505 dia. x 1.708	Flat Contacts −, +4.2	0.6 oz.	2	0.20	2·36	1·58
E162†	2.7	.661 dia. x 0.887	Flat Contacts −, +2.7	0.58 oz.	2	0.20	2·10	1·40
E163*†	4.2	.661 dia. x 1.327	Flat Contacts −, +4.2	0.9 oz.	2	0.20	2·96	1·97
E164*†	5.6	.661 dia. x 1.767	Flat Contacts −, +5.6	1.2 oz.	12	1.0	2·70	1·80
E165*†	7.0	.661 dia. x 2.207	Flat Contacts −, +7	1.5 oz.	2	0.20	3·50	2·33
E169†	12.6	.662 dia. x 3 63/64	Flat Contacts −, +12.6	4.2 oz.	1	0.18	5·94	3·96
E175†	7.0	1/2 dia. x 1 3/32	Flat Contacts −, +7	1 oz.	1	0.10	2·42	1·61
E177	9.0	35/64 dia. x 1 29/32	Min. Snap −, +9.0	0.8 oz.	1	0.04	2·70	1·80
E233*†	4.2	1.005 dia. x 1 31/32	Flat Contacts −, +4.2	3 oz.	1	0.20	4·86	3·24
E234*†	5.6	1.005 dia. x 2.578	Flat Contacts −, +5.6	4.2 oz.	1	0.50	4·86	3·24
E235N†	6.75	1 1/64 dia. x 3 5/6	Flat Contacts −, +6.75	5 oz.	1	0.50	6·42	4·28
E236N†	8.1	1.005 dia. x 3.921	Flat Contacts −, +8.1	6.3 oz.	1	0.50	7·00	4·68
E286	8.4	1 dia. x 1 15/16	Flat Contacts −, +8.4	1.6 oz.	1	0.10	2·70	1·80
E289	12.6	1 dia. x 2 13/32	Snap Type −, +12.6	3.6 oz.	1	0.20	5·40	3·60
E312†	1.4	.310 dia. x 0.140	Flat Contacts −, +1.4	0.03 oz.	6	0.03	·48	·32
323BP▲	1.35	.310 dia. x .210	Flat Contacts −, +1.35	0.05 oz.	5	0.045	1·85	1·20
343BP▲	1.35	.455 dia. x .138	Flat Contacts −, +1.35	0.05 oz.	5	0.05	1·85	1·20
E400*†	1.4	.455 dia. x 0.135	Flat Contacts −, +1.4	0.04 oz.	6	0.03	·80	·53
E401*†	1.4	.470 dia. x 1.130	Flat Contacts −, +1.4	0.4 oz.	3	0.10	1·08	·72
E450†	1.35	.455 dia. x .570	Flat Contacts −, +1.35	0.18 oz.	4	0.25	1·35	·90
E502†	1.35	.550 dia. x 1.968	Flat Contacts −, +1.35	1.05 oz.	2	0.20	1·89	1·26
E520†	1.4	.495 dia. x 0.286	Flat Contacts −, +1.4	0.07 oz.	6	0.05	·37	·23
E601†	1.35	.627 dia. x 1.140	Flat Contacts −, +1.35	1.22 oz.	2	0.20	1·89	1·26
E625*†	1.4	.615 dia. x 0.238	Flat Contacts −, +1.4	0.15 oz.	4	0.05	·81	·54
EPX625	1.35	.615 dia. x 0.238	Flat Contacts −, +1.4	0.15 oz.	4	0.10	1·08	·72
E630*†	1.4	.615 dia. x 0.238	Flat Contacts −, +1.4	0.17 oz.	4	0.05	1·02	·68
E640*†	1.4	.625 dia. x 0.440	Flat Contacts −, +1.4	0.28 oz.	2	0.15	1·02	·68
EPX640	1.35	.625 dia. x 0.440	Flat Contacts −, +1.35	0.13 oz.	4	0.10	1·08	·72
E675†	1.4	.455 dia. x 0.205	Flat Contacts −, +1.4	0.09 oz.	6	0.01	·525	·35
EPX675	1.35	.455 dia. x 0.205	Flat Contacts −, +1.35	0.09 oz.	6	0.05	1·08	·72
E302157	1.35	2 1/2 x 1 3/8 x 4 1/4	Socket −, +1.35	13.5 oz.	1	1.00	19·44	12·96
E302250	9.45	1 1/16 dia. x 1 29/32	Tabs −, +9.45	1 oz.	1	0.10	4·85	3·24
E302351	5.4	1 1/16 dia. x 2 5/8	Flat Contacts −, +5.4	4.5 oz.	1	0.30	10·55	7·05
E302358	10.8	3/4 dia. x 2 5/32	Wire Leads −, +10.8	1.3 oz.	1	0.10	6·45	4·32
E302362	16.2	23/32 dia. x 3 5/32	Wire Leads −, +16.2	1.8 oz.	1	0.10	8·60	5·76
E302435	6.75	1 1/16 dia. x 1 1/2	Flat Contacts −, +6.75	0.75 oz.	1	0.10	5·40	3·60
E302462	97.2	2 13/16 x 1 17/32 x 6 3/8	Wire Leads −, +97.2	2 lb.	1	2.0	60·45	40·32
E302465	47.25	2 3/16 dia. x 3 3/4	Wire Leads −, +47.25	1 lb. 1 oz.	1	1.0	34·56	23·04
E302478	9.8	1 1/4 dia. x 3 5/8	Flat Contacts −, +9.8	9 oz.	1	0.6	10·68	7·12
E302497	6.75	1 1/16 dia. x 4 3/16	Screw −, +6.75	6 oz.	1	0.4	15·12	10·08
E302579	29.7	1 13/32 x 3/4 x 3 3/16	Wire Leads −, +29.7	5 oz.	1	0.3	19·44	12·96
E302580	27.0	2 23/32 x 2 23/32 x 3 29/32	Sockets −, +27	2 lb. 1.6 oz.	1	2.0	51·84	34·56
E302642	7.0	1 9/32 dia. x 2 5/8	Flat Contacts −, +7	6 oz.	1	0.40	8·64	5·76
E302651	1.35	1 5/16 dia. x 2 7/16	Special Leads −, +1.35	6.14 oz.	1	0.40	7·56	5·04
E302702	2.8	1 1/8 dia. x 1 5/8	Wire Leads −, +2.7	2 oz.	1	0.20	6·48	4·32
E302904	5.4	1 11/32 dia. x 2 31/32	Wire Leads −, +5.4	6 oz.	1	0.40	11·88	7·92
E302905	6.75	1 11/32 dia. x 3 19/32	Wire Leads −, +6.75	9 oz.	1	0.50	13·60	9·07
E302907	9.45	1 5/16 dia. x 4 7/8	Wire Leads −, +9.45	11.6 oz.	1	0.60	17·28	11·52
E302908	10.8	1 11/32 dia. x 5 9/16	Wire Leads −, +10.8	12 oz.	1	0.80	19·44	12·96
E303145	8.4	2 3/16 x 7/8 x 4 7/16	Snap Type −, +8.4	9.34 oz.	1	0.6	10·80	7·20
E303219	9.8	.515 dia. x 1 5/8	Flat Contacts −, +9.8	1 oz.	1	0.1	3·24	2·16
E303236	4.2	23/32 x 23/32 x 1 29/32	Flat Contacts −, +4.2	1.28 oz.	1	0.1	2·10	1·40
E303314	16.8	2.81 x 2.85 x 1.320	Recessed Flat Contacts −, +16.8	12.8 oz.	1	0.80	17·28	11·52
E303394	11.2	2 1/2 x 1 3/4 x 2.28	Snap Type −, +11.2	14 oz.	1	0.80	18·36	10·44
E303462	15.4	2.14 x 2.12 x 1.8	Recessed Flat Contacts −, +15.4	1 lb. 0.8 oz.	1	1.50	17·70	11·80
E303496	4.2	.655 dia. x 1.330	Flat Contacts −, +4.2	0.87 oz.	1	0.10	2·10	1·40

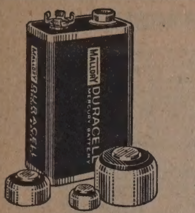
PREMIUM SERVICE ALKALINE BATTERIES FOR RADIO, PHOTOFLASH, TOYS, HIGH DRAIN ELECTRONIC APPLICATIONS

"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Unit Pkg. Qty.	List Price Each	Net Ea. In Unit Pkg.
S41•	1.5	.455 dia. x .165	6	$0·54	$0·36
S76•	1.5	.455 dia. x .200	6	·61	·41
E90	1.5	.470 dia. x 1.13	2	·64	·415
E91‡#	1.5	9/16 dia. x 1 31/32	24	·70	·455
E92‡	1.5	.410 dia. x 1.745	12	·70	·455
E93‡	1.5	1 1/32 dia. x 1 15/16	12	·80	·52
E94	1.5	1 11/32 dia. x 1 13/64	12	·80	·52
E95‡	1.5	1 11/32 dia. x 2 13/32	12	1·00	·65
303▲•	1.5	.455 dia. x .220	5	1·69	1·11
523	4.5	.662 dia. x 1.965	1	2·10	1·37

"Eveready" No.	Voltage	Overall Dimensions, Inches L. x W. x H.	Unit Pkg. Qty.	List Price Each	Net Ea. In Unit Pkg.
531§	4.5	.662 dia. x 2.290	6	$ 2·10	$ 1·37
532§	3.0	.664 dia. x 1.670	6	1·89	1·23
538§	4.5	1.60 x .670 x .450	1	2·40	1·59
544	6.0	.514 dia. x .990	1	2·50	1·71
560■	7.5	2 1/32 x 1 17/32 x 7 5/32	1	7·95	5·29
561■	15	8 5/16 x 2 13/16 x 5 7/8	1	16·95	11·29
563■	4.5	1 23/64 dia. x 7 5/32	3	4·50	3·00
564■	13.5	8 5/16 x 2 13/16 x 5 7/8	1	16·50	10·99
565■	6.0	2 25/32 x 2 25/32 x 5 11/32	1	7·95	5·29

Available at extra cost: *Suffix **N** types for instrument voltage ref. and hi-temp use; †1/2" steel tab connectors for solder/weld; ‡Blister pack of 2; #Blister pack of 4; §Blister pack of 1. •Silver type. ■For portable TV sets. ▲Blister pack.

MALLORY Duracell® Batteries



MERCURY DURACELL BATTERIES

Mercury Duracell batteries offer more power per unit of volume than any other type. Sizes range from the RM312, which is aspirin tablet size, up thru the Power-Pak types. Voltage stability is excellent, as is storage life. Types with **R** in the suffix are rated at 1.35 volts per cell; all others rated 1.4 V. All have flat terminals unless otherwise noted. Types with suffix **T** have solder tab on negative terminal; suffix **T2**, solder tabs on both terminals.

Mallory No.	Volts	mAH	Use	Size, Inches	Oz.	Net
MP401	1.4	1000	Paging	29/64 dia. x 1 1/8	0.4	**$0.83**
MP675	1.4	220	Calculator	29/64 dia. x 7/32	0.07	**.49**
RM1	1.4	1000	Phys. hndcp.	5/8 dia. x 21/32	0.43	**.72**
RM1R	1.35	1000	Electronic	5/8 dia. x 21/32	0.43	**.88**
RM1RT†	1.35	1000	Electronic	5/8 dia. x 21/32	0.43	**.92**
RM1RT2‡	1.35	1000	Electronic	5/8 dia. x 21/32	0.43	**.97**
RM3R	1.35	2200	Electronic	1 dia. x 21/32	0.93	**1.36**
RM4R	1.35	3400	Electronic	1.2 dia. x 21/32	1.6	**1.74**
RM4RT†	1.35	3400	Electronic	1.2 dia. x 21/32	1.6	**1.79**
RM4Z	1.4	2400	Electronic	1.2 dia. x 1/2	1.2	**1.15**
RM12	1.4	3600	Tape rcrdr.	5/8 dia. x 1 61/64	2.0	**1.23**
RM12R	1.35	3600	Tachometer	5/8 dia. x 1 61/64	2.0	**1.36**
RM12RT†	1.35	3600	Electronic	5/8 dia. x 1 61/64	2.0	**1.41**
RM12RT2‡	1.35	3600	Electronic	5/8 dia. x 1 61/64	2.0	**1.46**
RM42	1.4	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	**3.51**
RM42R	1.35	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	**3.84**
RM42RT†	1.35	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	**3.89**
RM42RT2‡	1.35	14000	Elec. "D"	1.2 dia. x 2 3/8	5.9	**3.94**
RM312	1.4	45	Phys. hndcp.	5/16 dia. x 9/64	0.02	**.25**
RM400	1.4	75	Phys. hndcp.	29/64 dia. x 9/64	0.04	**.53**
RM400R§	1.35	75	Electronic	29/64 dia. x 9/64	0.04	**.72**
RM400RT2‡	1.35	75	Electronic	29/64 dia. x 9/64	0.04	**.82**
RM401	1.4	800	Radio "N"	29/64 dia. x 1 1/8	0.4	**.72**
RM401R	1.35	800	Electronic	29/64 dia. x 1 1/8	0.4	**.88**
RM411	14	160	Electronic	1 x 19/32 x 1 27/64	1.08	**2.08**
RM412	22.4	160	Electronic	1 x 19/32 x 1 31/32	1.65	**2.79**
RM413	28	160	Electronic	1 x 19/32 x 2 1/2	2.04	**3.51**
RM415*	42	160	Electronic	1 x 19/32 x 3 1/2	3.03	**5.23**
RM450R	1.35	350	Electronic	29/64 dia. x 9/16	0.18	**.88**
RM502R	1.35	2400	Electronic	1/2 dia. x 1 61/64	1.05	**1.23**
RM520	1.4	130	Phys. hndcp.	1/2 dia. x 9/32	0.07	**.18**
RM575	1.4	100	Phys. hndcp.	.455 dia. x .129	0.05	**.25**
RM601R	1.35	1800	Electronic	5/8 dia. x 1 5/32	1.2	**1.23**
RM601RT2‡	1.35	1800	Electronic	5/8 dia. x 1 5/32	1.2	**1.33**
RM625	1.4	350	Phys. hndcp.	5/8 dia. x 1/4	0.14	**.67**
RM625R	1.35	250	Electronic	5/8 dia. x 1/4	0.14	**.78**
RM625RT†	1.35	250	Electronic	5/8 dia. x 1/4	0.14	**.83**
RM625RT2‡	1.35	250	Electronic	5/8 dia. x 1/4	0.14	**.88**
RM630	1.4	350	Phys. hndcp.	5/8 dia. x 1/4	0.17	**.67**
RM630R	1.35	250	Electronic	5/8 dia. x 1/4	0.17	**.78**
RM640#	1.4	500	Radio	5/8 dia. x 7/16	0.26	**.66**
RM640R	1.35	500	Electronic	5/8 dia. x 7/16	0.26	**.78**
RM640RT2‡	1.35	500	Electronic	5/8 dia. x 7/16	0.26	**$0.88**
RM675	1.4	160	Phys. hndcp.	29/64 dia. x 13/64	0.07	**.37**
TR112	2.8	350	Electronic	21/32 dia. x 19/64	0.29	**1.81**
TR112R	2.7	250	Electronic	21/32 dia. x 19/64	0.29	**1.80**
TR113R	4.05	250	Electronic	21/32 dia. x 53/64	0.45	**2.07**
TR114R	5.4	250	Electronic	21/32 dia. x 1 1/16	0.59	**2.28**
TR114RT2‡	5.4	250	Electronic	21/32 dia. x 1 1/16	0.59	**2.38**
TR115	7.0	350	Dictating	21/32 dia. x 1 5/16	0.73	**2.52**
TR115R	6.75	250	Electronic	21/32 dia. x 1 5/16	0.73	**2.60**
TR118	11.2	350	Medical	21/32 dia. x 2 1/32	1.13	**3.24**
TR126	8.4	600	Radio	3/4 dia. x 2	1.6	**1.80**
TR132	2.8	1000	Paging	21/32 dia. x 1 5/16	1	**1.22**
TR132R	2.7	1000	Electronic	21/32 dia. x 1 5/16	1	**1.57**
TR133§	4.2	1000	Radio, Pag.	21/32 dia. x 2	1.4	**1.80**
TR133R	4.05	1000	Radio, Pag.	21/32 dia. x 2	1.4	**2.00**
TR134	5.6	1000	Gar. door	21/32 dia. x 2 39/64	1.9	**1.74**
TR134R	5.4	1000	Electronic	21/32 dia. x 2 39/64	1.9	**2.42**
TR134T2‡	5.6	1000	Electronic	21/32 dia. x 2 39/64	1.9	**1.84**
TR135	7.0	1000	Gar. door	21/32 dia. x 3 1/4	2.4	**2.33**
TR135R	6.75	1000	Electronic	21/32 dia. x 3 1/4	2.4	**2.88**
TR136	8.4	1000	Gar. door	21/32 dia. x 3 29/32	2.9	**2.45**
TR136R	8.1	1000	Electronic	21/32 dia. x 3 29/32	2.9	**3.22**
TR137	9.8	1000	Electronic	21/32 dia. x 4 9/16	3.4	**2.82**
TR137R	9.45	1000	Electronic	21/32 dia. x 4 9/16	3.4	**3.61**
TR145	7	250	Electronic	21/32 dia. x 1 3/16	0.58	**1.85**
TR146X*§	8.4	575	Radio	1 x 21/32 x 1 3/4	2.0	**1.27**
TR152	2.8	350	Electronic	15/32 dia. x 1 1/8	0.42	**.93**
TR152R	2.7	350	Electronic	15/32 dia. x 1 1/8	0.42	**1.36**
TR153R	4.05	350	Electronic	15/32 dia. x 1 11/16	0.6	**1.74**
TR162R	2.7	500	Electronic	21/32 dia. x 7/8	0.58	**1.71**
TR163	4.2	500	TV tuner	21/32 dia. x 1 5/16	0.87	**1.98**
TR163R	4.05	500	Electronic	21/32 dia. x 1 5/16	0.87	**2.23**
TR164	5.6	500	Radio	21/32 dia. x 1 3/4	1.16	**1.80**
TR164R	5.40	500	Electronic	21/32 dia. x 1 3/4	1.16	**2.44**
TR165	7	500	TV tuner	21/32 dia. x 2 3/16	1.45	**2.33**
TR165R	6.75	500	Electronic	21/32 dia. x 2 3/16	1.45	**2.66**
TR169	12.6	500	Electronic	21/32 dia. x 3 61/64	2.88	**3.96**
TR175	7	160	Radio	31/64 dia. x 1 1/32	0.4	**1.61**
TR177*	9.8	160	Radio	35/64 dia. x 1 29/32	0.67	**1.80**
TR233	4.2	2200	Radio	1 1/64 dia. x 1 31/32	3	**3.23**
TR233R	4.05	2200	Electronic	1 1/64 dia. x 1 31/32	3	**3.61**
TR234	5.6	2200	Electronic	1 1/64 dia. x 2 19/32	3.88	**2.98**
TR234R	5.4	2200	Electronic	1 1/64 dia. x 2 19/32	3.88	**4.68**
TR235R	6.75	2200	Electronic	1 1/64 dia. x 3 1/4	4.63	**5.78**
TR236R	8.10	2200	Electronic	1 1/64 dia. x 3 29/32	4.76	**6.85**
TR239R	12.15	2200	Electronic	1 dia. x 5 13/16	9.45	**8.85**
TR286*	8.4	750	Radio	1 dia. x 1 15/16	1.6	**1.80**
TR289*	12.6	750	CB radio	1 dia. x 2 25/64	3.6	**3.61**
TR431*	10.7	1000	Dictation	1 dia. x 3 9/64	5	**3.61**
ZM9#	1.4	2400	Radio "AA"	1/2 dia. x 1 31/32	1	**.70**
ZM12	1.4	3600	Clock	5/8 dia. x 1 61/64	2.0	**1.36**
4R82	8.1	250	Paging	21/32 dia. x 1 13/32	0.9	**2.07**
9R81	1.4	800	Paging	29/64 dia. x 1 1/8	0.4	**1.04**

*Snap terminals. †1 tab, 1 flat terminal. ‡2 tab terminals. §Add suffix **B** for blister pack; add **1c** to price. #Add suffix **B2** for blister pack (2).

MERCURY POWER-PAK™ BATTERIES

Mercury Power-Pak batteries are used in heavy duty industrial applications where extreme reliability is required. Detailed terminal drawings and precise specifications are available on request.

Mall. No.	Volts	mAH	Use	Terminals	Net
302157	1.35	28,000	Radiation eqpt.	Socket	**$13.50**
302250	9.45	250	Radiation eqpt.	Tabs	**3.34**
302351	5.4	2,200	Fire alarm	Flat	**7.23**
302358	10.8	250	Radiation eqpt.	Leads	**4.42**
302362	16.2	250	Radiation eqpt.	Leads	**6.04**
302435	6.75	250	Radiation eqpt.	Flat	**3.73**
302462	97.2	1,000	Transmitter "B"	Leads	**43.21**
302465	47.25	1,000	Geophysical	Leads	**25.91**
302478	9.8	2,400	Recorder	Flat	**8.31**
302580	27	3,400	Electronic	Socket	**36.28**
302642	7.0	2,400	Fire alarm	Flat	**6.15**
302651	1.35	14,000	Electronic	Leads	**5.18**
302702	2.7	2,200	Geophysical	Leads	**4.42**
302904	5.4	3,400	Meter	Leads	**8.10**
302905	6.75	3,400	Test equipment	Leads	**9.17**
302907	9.45	3,400	Electronic	Leads	**11.88**
302908	10.8	3,400	Radiation eqpt.	Leads	**13.50**
303145	8.4	3,600	Depth finder	Snap	**8.31**
303236	4.2	1,000	Electronic	Flat	**1.55**
303314	16.8	2,400	Transceiver	Flat	**11.56**
303394	11.2	3,600	Electronic	Snap	**12.20**
303496	4.2	500	Paging	Button	**1.39**
303996	8.4	575	Medical	Snap	**1.47**

DURACELL PHOTO BATTERIES

Suffix **B** indicates blister pack. **B2** indicates pack of 2.

Mallory Number	Volts	Wt. Oz.	Net Each	Mallory Number	Volts	Wt. Oz.	Net Each
PX1B	1.35	0.6	**$0.90**	**PX29B**	4.05	0.22	**$1.37**
PX4	5.6	3.2	**2.13**	**PX30***	1.5	1.5	**1.04**
PX6	8.1	4.0	**3.15**	**PX30B**	1.5	1.5	**1.05**
PX13B	1.35	0.14	**.72**	**PX32**	5.6	1.2	**1.80**
PX14B	2.7	0.3	**1.44**	**PX450B**	1.35	0.3	**.72**
PX18	45	5.3	**4.21**	**PX625B**	1.35	0.15	**.72**
PX19*‡	4.5	1.2	**1.36**	**PX640B**	1.35	0.38	**.72**
PX21*‡	4.5	1.2	**1.36**	**PX675B**	1.35	0.07	**.72**
PX23B	5.6	2.0	**.72**	**PX825***	1.5	0.38	**.52**
PX24*‡	3.0	1.0	**1.23**	**PX825B2***	1.5	0.38	**1.05**
PX25B	4.05	0.5	**1.81**	**TR112R**	2.7	0.29	**1.80**
PX27B	4.05	1.6	**.72**	**7R31**	4.2	0.67	**1.59**
PX28	6.0	0.13	**1.67**	**7R31B**	4.2	0.67	**1.60**
PX28B	6.0	0.13	**1.81**				

*Alkaline; all other mercury. ‡Available in single blister pack, add **1c** to price.

ALKALINE DURACELL BATTERIES

DURACELL
MALLORY

MALLORY
Rechargeable
DURACELL

Designed for high drain use such as photoflash, movie cameras, lighting, etc.; up to 10 times longer life than zinc-carbon types.

STANDARD ALKALINE DURACELL BATTERIES

Mallory No.	Volts	Use	Wt. Oz.	Net Each
MN1300‡	1.5	All purpose "D"	5 1/4	**$0.65**
MN1306†	4.5	Transistor radio	1 3/4	**1.36**
MN1400‡	1.5	All purpose "C"	2 1/3	**.52**
MN1500‡§	1.5	All purpose "AA"	.82	**.455**
MN1604†	9.0	Radio	1 1/2	**.975**
MN1611†	9.0	Transistor radio	1 1/2	**1.23**
MN2400‡	1.5	All purpose "AAA"	.4	**.455**
MN9100‡	1.5	All purpose "N"	.34	**.41**

†Add suffix **B** for blister pack; add **1c** to price. ‡Add suffix **B2** for blister (2). §Add suffix **B4** for blister (4).

RECHARGEABLE ALKALINE DURACELL BATTERIES

Not interchangeable with other rechargeable batteries.

Mallory No.	Volts	Size, Inches (Cell)	Wt., Oz.	Net
SA13D†	1.5	1.3 dia. x 2.367 h. (D)	5	**$1.25**
SA14C†	1.5	1.01 dia. x 1.93 h. (C)	2 1/2	**1.08**
SA15AA†	1.5	0.55 dia. x 1.94 h. (AA)	1	**.69**

†Add suffix **B2** for blister pack (2).

MODEL BC-16 DURACELL ALKALINE BATTERY CHARGER

Will charge either two or four Mallory (only) Duracell rechargeable alkaline batteries in any pair combination.

Mallory Model No. BC-16—Net Each. **$6.67**

SILVER OXIDE DURACELL, GRID BIAS CELLS

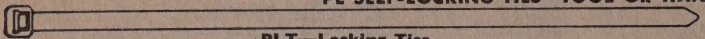
Mallory Number	Volts	Size, In.	Net Each	Mallory Number	Volts	Net Each
MS13	1.56	.21 x .31	**$0.39**	**MS312**	1.56	**$0.36**
MS41	1.56	.16 x .46	**.39**	**BC-3***	1.5	**.60**
MS76B	1.56	.21 x .46	**.53**	**BC-4***	1.5	**.60**
MS-212	1.56	. . . .	**.24**			

*Standard package, weight, 8 oz.; all others 4 oz.

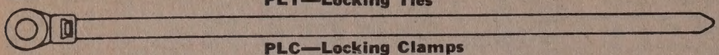
PANDUIT® Wiring Components

PAN-TY® ONE PIECE CABLE TIES, CLAMPS, PUSH MOUNT TIES AND MARKERS

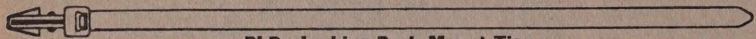
PL SELF-LOCKING TIES—TOOL OR HAND INSTALLED



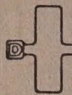
PLT—Locking Ties



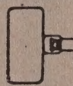
PLC—Locking Clamps



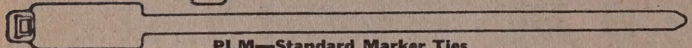
PLP—Locking Push Mount Ties



PLM1M—Miniature Locking Marker Ties



PLF1M—Miniature Locking Flag Marker Ties



PLM—Standard Marker Ties

PANDUIT
cable ties & clamps

All packages of 50 and 100 PAN-TY cable ties; bulk packages of PLT1M-MP, PLT1.5I-MP and PLT2S-MP are supplied in convenient dispenser cartons.

PAN-TY ONE PIECE CABLE TIES

Panduit Number	Max. Bundle Dia.	Approx. Length	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
PLT1M-CP	¾″	4″	100	1000	$ 3.13	$ 2.50
PLT1.5M-CP	1¼″	5½″	100	500	3.29	2.64
PLT1.5I-CP	1¼″	5½″	100	1000	3.50	2.80
PLT2M-CP	2″	8″	100	500	3.43	2.74
PLT2I-CP	2″	8″	100	500	4.13	3.30
PLT2S-CP	1¾″	7¼″	100	1000	4.38	3.50
PLT3I-CP	3″	11½″	100	500	7.25	5.80
PLT3S-CP	3″	11½″	100	500	8.50	6.80
PLT4I-CP	4″	14½″	100	500	9.13	7.30
PLT4S-CP	4″	14½″	100	500	10.13	8.10
PLT4H-LP	4″	14½″	50	500	14.50	11.60
PLT8H-LP	9″	30⅝″	50	500	30.00	24.00
PLC1M-S4-CP	¾″	4⅜″	100	500	4.75	3.80
PLC1.5I-S8-CP	1¼″	6⅜″	100	500	5.38	4.30
PLC2S-S6-CP	1¾″	7½″	100	500	6.13	4.90
PLC2S-S10-CP	1¾″	7½″	100	500	6.13	4.90
PLC4H-S25-LP	4″	15¼″	50	500	19.38	15.50
PLP1.5I-CP	1¼″	6″	100	500	5.63	4.50
PLP2S-CP	1¾″	7¾″	100	500	6.50	5.20
PLM1M-CP	¾″	4″	100	500	6.13	4.90
PLF1M-CP	¾″	4⅜″	100	500	6.13	4.90
PLM2S-CP	1¾″	7¼″	100	500	12.38	9.90
PLM4S-CP	4″	14½″	100	500	15.00	12.00

STA-STRAP® CABLE TIES, CLAMPS AND MARKERS

Hand or tool installed—releasable prior to tightening.

Panduit Number	Max. Bundle Dia.	Approx. Length	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
SST1M-CP	¾″	4″	100	1000	$ 3.13	$ 2.50
SST1.5M-CP	1¼″	5½″	100	500	3.29	2.64
SST1.5I-CP	1¼″	5½″	100	1000	3.50	2.80
SST1.5S-CP	1¼″	5¾″	100	500	3.72	2.97
SST2I-CP	2″	8³⁄₁₆″	100	500	4.13	3.30
SST2S-CP	1¾″	6¾″	100	1000	4.38	3.50
SST2H-LP	2″	8″	50	500	10.50	8.40
SST3I-CP	3″	11″	100	500	7.25	5.80
SST3S-CP	3″	11″	100	500	8.50	6.80
SST4I-CP	4″	14¾″	100	500	9.13	7.30
SST4S-CP	4″	15″	100	500	10.13	8.10
SST4H-LP	4″	14¾″	50	500	14.50	11.60
SST8H-LP	8″	27½″	50	500	30.00	24.00
SSC2S-S6-CP	1¾″	7⁷⁄₁₆″	100	500	6.13	4.90
SSC2S-S10-CP	1¾″	7⁷⁄₁₆″	100	500	6.13	4.90
SSC4S-S6-CP	4″	15⁷⁄₁₆″	100	500	17.00	13.60
SSC4S-S10-CP	4″	15⁷⁄₁₆″	100	500	17.00	13.60
SSC4H-S25-LP	4″	15⁷⁄₁₆″	50	500	19.38	15.50
SSM2S-CP	1¾″	6¾″	100	500	12.38	9.90
SSM4S-CP	4″	14¾″	100	500	15.00	12.00
SSB2S-C	*	6¾″	100	500	6.75	5.40

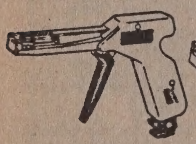
*Any two bundles up to approx. total dia. of 1¼″.

Colors: Standard color, natural nylon white; other colors available, 10% additional price.

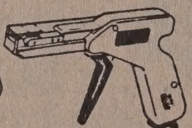
WRITE OR CALL FOR PRICES AND INFORMATION ON BULK PRICES OF PAN-TY AND STA-STRAP CABLE TIES

CABLE TIE ACCESSORIES

PRODUCTION INSTALLATION TOOLS



GS2B



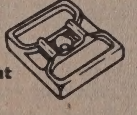
GS4H

Panduit No. GS2B Hand Tool—For uniform tensioning and cut-off. Installs miniature, intermediate and standard cable ties. Shpg. Wt., 1 lb. approx. Net Ea. . **$33.00**

Panduit No. GS4H Hand Tool—Same, but installs standard and heavy cable ties. Shpg. Wt., 1½ lbs. approx. Net . . **$55.00**

CABLE TIE MOUNTS

Variety of cable tie mounts available as shown below. **Prices on request.**



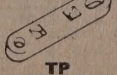
ABMS-A Adhesive Backed Mount

TM Mount

TMEH Mount

TA1 Mount

TA2 Mount



TP Mount

PANDUCT® PLASTIC WIRING DUCT

- **Patented snap-in slot design**
- **Eliminates threading wires through duct holes**
- **Wires may be inserted with terminations attached**
- **Meets J.I.C. requirements. CSA approved.**

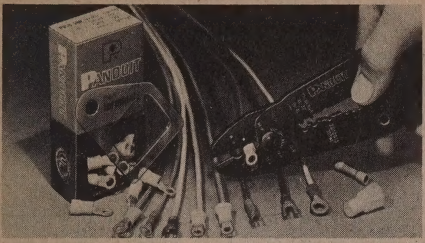
Non-slip cover available for all width sizes. **Prices on request.**

Panduit Number*	Nominal Size, Inches Wide	Nominal Size, Inches High	Net per Foot, Lengths of 1-199′	Net per Foot, Lengths of 200-1999′	Net per Foot, Lengths of 2000-4999′
E .5 x .5	½	½	$0·56	$0·44	$0·41
E .5 x .62	½	⅝	·59	·47	·44
E .5 x 1	½	1	·64	·51	·48
E .5 x 1.25	½	1¼	·73	·58	·52
E .5 x 1.75	½	1¾	·76	·62	·58
E .75 x .75	¾	¾	·63	·50	·47
E .75 x 1	¾	1	·64	·51	·48
E .75 x 1.5	¾	1½	·76	·61	·56
E .75 x 2	¾	2	·92	·74	·68
E 1 x 1	1	1	·64	·52	·48
E 1 x 1.5	1	1½	·85	·69	·64
E 1 x 2	1	2	·90	·72	·67
E 1 x 3	1	3	1·14	·92	·85
E 1 x 4	1	4	1·52	1·21	1·11
E 1.5 x 1.5	1½	1½	·90	·73	·66
E 1.5 x 2	1½	2	·98	·78	·72
E 1.5 x 3	1½	3	1·23	·99	·91
E 1.5 x 4	1½	4	1·58	1·28	1·17
E 2 x 1	2	1	·89	·72	·64
E 2 x 2	2	2	·99	·79	·73
E 2 x 3	2	3	1·29	1·01	·94
E 2 x 4	2	4	1·64	1·32	1·21
E 2.5 x 3	2½	3	1·36	1·09	1·00
E 3 x 1	3	1	1·08	·85	·79
E 3 x 1.25	3	1¼	1·10	·87	·81
E 3 x 2	3	2	1·17	·92	·85
E 3 x 3	3	3	1·40	1·11	1·01
E 3 x 4	3	4	1·72	1·39	1·28
E 3 x 5	3	5	2·39	1·90	1·76
E 4 x 1.5	4	1½	1·22	·98	·91
E 4 x 2	4	2	1·24	1·00	·92
E 4 x 3	4	3	1·49	1·20	1·10
E 4 x 4	4	4	1·85	1·47	1·36
E 4 x 5	4	5	2·57	2·06	1·89

*Order by total number of feet required (must be multiple of 6 ft.). Specify Color: Light gray (standard); white and dark gray available.

PANDUIT® Wiring Components

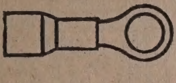
PAN-TERM® TERMINALS, SPLICES, DISCONNECTS AND INSTALLATION TOOLS



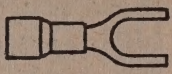
Panduit Pan-Term terminals and splices are engineered and manufactured to stringent quality standards to accommodate wire sizes from #10 to #22 in complete range of applications. Packaging is in convenient-to-use dispensing boxes. Clear, see-through lid snaps open (and shut) and swings clear for quick terminal access.

VINYL SELF-INSULATED (BRAZED SEAM)

Ring Tongue



Fork Tongue



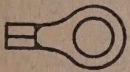
WIRE RANGE—22-18 RED (MAX. INS., .150")

Panduit Number†	Stud Size	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
PV18-4R-C	4	100	500	$8.00	$6.40
PV18-6R-C*	6	100	500	8.00	6.40
PV18-8R-C*	8	100	500	8.00	6.40
PV18-10R-C*	10	100	500	8.00	6.40
PV18-14R-C	¼	100	500	9.50	7.60
WIRE RANGE—16-14 BLUE (MAX. INS., .170")					
PV14-4R-C	4	100	500	$8.00	$6.40
PV14-6R-C*	6	100	500	8.00	6.40
PV14-8R-C*	8	100	500	8.00	6.40
PV14-10R-C*	10	100	500	8.00	6.40
PV14-14R-C	¼	100	500	9.50	7.60
WIRE RANGE—12-10 YELLOW (MAX. INS., .210")					
PV10-8R-L*	8	50	500	$10.25	$8.20
PV10-10R-L*	10	50	500	10.25	8.20
PV10-14R-L*	¼	50	500	12.25	9.80
PV10-56R-L	5/16	50	500	12.25	9.80
PV10-38R-L	⅜	50	500	12.25	9.80

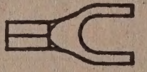
*Also available in vinyl insulated fork tongues with same insulation. To order, substitute **F** instead of R in Panduit No. (e.g., PV18-6**F**-C); same price. †UL Listed for all sizes.

NON-INSULATED (BRAZED SEAM)

Ring Tongue



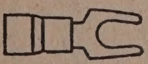
Fork Tongue



Panduit Number†	Wire Range	Stud Size	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
P18-4R-C	22-18	4	100	1000	$5.00	$4.00
P18-6R-C*	22-18	6	100	1000	5.00	4.00
P18-8R-C*	22-18	8	100	1000	5.00	4.00
P18-10R-C*	22-18	10	100	1000	5.00	4.00
P18-14R-C*	22-18	¼	100	1000	6.50	5.20
P14-4R-C	16-14	4	100	1000	5.00	4.00
P14-6R-C*	16-14	6	100	1000	5.00	4.00
P14-8R-C*	16-14	8	100	1000	5.00	4.00
P14-10R-C*	16-14	10	100	1000	5.00	4.00
P14-14R-C*	16-14	¼	100	1000	6.50	5.20
P10-8R-L*	12-10	8	50	500	6.75	5.40
P10-10R-L*	12-10	10	50	500	6.75	5.40
P10-14R-L*	12-10	¼	50	500	7.75	6.20
P10-56R-L	12-10	5/16	50	500	7.75	6.20
P10-38R-L	12-10	⅜	50	500	7.75	6.20

*Also available in fork tongues. To order, replace R in Panduit No. with **F** (e.g., P18-6**F**-C); same Price. †UL Listed for all sizes.

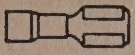
VINYL SELF-INSULATED LOCKING FORK



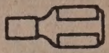
Panduit Number	Wire Range	Stud Size	Max. Ins. Inches	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
PV18-6LF-C	22-18	6	.150	100	500	$ 8.88	$ 7.10
PV18-8LF-C	22-18	8	.150	100	500	8.88	7.10
PV18-10LF-C	22-18	10	.150	100	500	8.88	7.10
PV14-6LF-C	16-14	6	.170	100	500	8.88	7.10
PV14-8LF-C	16-14	8	.170	100	500	8.88	7.10
PV14-10LF-C	16-14	10	.170	100	500	8.88	7.10
PV10-6LF-L	12-10	6	.210	50	500	12.00	9.60
PV10-8LF-L	12-10	8	.210	50	500	12.00	9.60
PV10-10LF-L	12-10	10	.210	50	500	12.00	9.60
PV10-14LF-L	12-10	¼	.210	50	500	14.25	11.40

FEMALE DISCONNECTS

All are recognized under Components Program of UL.



Vinyl Insulated



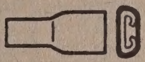
Non-Insulated

.250" X .032" TAB SIZE

VINYL INSULATED

Panduit Number	Wire Range	Max. Ins. Inches	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
DV18-250-C	22-18	.150	100	500	$10.63	$ 8.50
DV14-250-C	16-14	.170	100	500	10.63	8.50
DV10-250-L	12-10	.210	50	500	13.25	10.60
NON-INSULATED						
D18-250-C	22-18	....	100	500	$ 6.63	$5.30
D14-250-C	16-14	....	100	500	6.63	5.30
D10-250-L	12-10	....	50	500	12.13	9.70
.187" X .020" TAB SIZE **VINYL INSULATED**						
DV18-188-C	22-18	.150	100	1000	$11.15	$8.90
DV14-188-C	16-14	.170	100	1000	11.15	8.90
NON-INSULATED						
D18-188-C	22-18	....	100	500	$9.60	$7.65
D14-188-C	16-14	....	100	500	9.60	7.65
.110" X .020" TAB SIZE **VINYL INSULATED**						
DV18-111-C	22-18	.150	100	1000	$11.15	$8.90
DV14-111-C	16-14	.170	100	1000	11.15	8.90
NON-INSULATED						
D18-111-C	22-18	....	100	500	$10.25	$8.20
D14-111-C	16-14	....	100	500	10.25	8.20

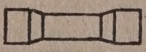
FULLY PRE-INSULATED VINYL



.250" x .032" TAB SIZE

Panduit Number	Wire Range	Max. Ins. Inches	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
DV18-250FI-C	22-18	.140	100	1000	$10.15	$8.12
DV14-250FI-C	16-14	.170	100	1000	10.15	8.12
.187" x .020" TAB SIZE						
DV18-188FI-C	22-18	.140	100	1000	$10.90	$8.72
DV14-188FI-C	16-14	.170	100	1000	10.90	8.72

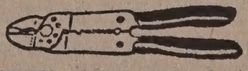
VINYL SELF-INSULATED BUTT SPLICES



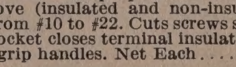
UL Listed.

Panduit Number	Wire Range	Max. Ins. Inches	Std. Pkg.	Std. Ctn.	Net per 100 Std. Pkg.	Net per 100 Std. Ctn.
BSV18X-C	22-18	.170	100	1000	$ 8.25	$6.60
BSV14X-C	16-14	.200	100	1000	8.25	6.60
BSV10X-L	12-10	.250	50	500	11.88	9.50

PAN-TERM INSTALLATION TOOLS



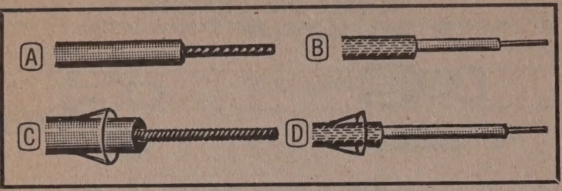
Panduit Number CT-100—All-purpose tool crimps all Pan-Term terminals listed above (insulated and non-insulated). Cuts and strips wire ranging from #10 to #22. Cuts screws sizes 4, 6, 8 and 10. Insulation closure pocket closes terminal insulation for grip. Comfortable, cushioned grip handles. Net Each **$8.50**



Panduit Number CT-200—Rugged, low-effort tool cuts wire and crimps non-insulated terminals ranging from #10 to #22. Comfortable soft plastic grip handles. Net Each **$7.50**

alpha ALPHA WIRE MIL-Spec Hook-Up Wire

SPECIFICATIONS MIL-W-76B AND MIL-W-16878/D HOOK-UP WIRE



SPECIFICATION MIL-W-76B PLASTIC HOOK-UP WIRE

TYPE MW (MEDIUM WALL) PLASTIC (FIG. A)

Single conductor stranded or solid tinned copper, polyvinylchloride insulation .016″ th. Rated 1000 volts. Temp., −40° C to +80° C.

STRANDED

Type MW-C	Conductor		Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
24(7)U	24	7/32	.059″	1-27	1550	$ 9·30	$1·44
22(7)U	22	7/30	.064″	1-27	1551	10·95	1·61
20(10)U	20	10/30	.073″	1-27	1553	12·45	1·85
18(16)U	18	16/30	.084″	1-27	1555	16·73	2·25
16(26)U	16	26/30	.095″	1-19	1557	24·00	3·09
14(41)U	14	41/30	.110″	1-19	1559	37·50	4·35
12(65)U	12	65/30	.125″	1-19	1560	54·00	6·60

SOLID

Type MW-C	Conductor		Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
24(1)U	24	1	.055″	1-19	1561/24	$ 7·50	$1·38
22(1)U	22	1	.060″	1-19	1561	8·55	1·35
20(1)U	20	1	.066″	1-19	1563	10·80	1·62
18(1)U	18	1	.074″	1-19	1565	14·70	2·07

TYPE MW (MEDIUM WALL) PLASTIC, SHIELDED (FIG. B)

Single conductor stranded tinned copper, polyvinylchloride insulation, tinned copper shield overall. Nominal insulation, .016″. Voltage rating, 1000 volts. Temp., −40° C to +80° C.

Type MW-C	Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
24(7)S	24	7/32	.075″	1	1350	$37·44	$4·26
22(7)S	22	7/30	.085″	1	1351	38·40	4·35
20(10)S	20	10/30	.095″	1	1352	45·66	5·25
18(16)S	18	16/30	.105″	1	1353	49·14	5·16
16(26)S	16	26/30	.115″	1	1354	62·19	6·54
14(41)S	14	41/30	.130″	1	1355	75·57	7·94
12(65)S	12	65/30	.145″	1	1356	97·95	10·29

TYPE MW (MED. WALL) PLASTIC, NYLON JACKET (FIG. C)

Single conductor stranded tinned copper; polyvinylchloride insulation, nylon jacket overall. Nominal insulation, .016″. Voltage rating, 1000 volts. Temp., −40° C to +90° C.

Tpye MW-C	Conductor		Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
22(7)J	22	7/30	.072″	1-3	1504	$16·35	$2·37
20(10)J	20	10/30	.079″	1	1505	19·05	2·52
18(16)J	18	16/30	.090″	1	1506	25·05	3·51
16(26)J	16	26/30	.103″	1	1507	38·39	4·71
14(41)J	14	41/30	.118″	1	1508	54·68	6·31
12(65)J	12	65/30	.135″	1	1509	78·72	8·79

TYPE MW (MEDIUM WALL) PLASTIC, SHIELDED, NYLON JACKET (FIG. D)

Single conductor stranded tinned copper, white polyvinylchloride insulation, braided tinned copper shield, clear nylon jacket overall. Insul., .016″ th. Rated 1000 V. Temp., −40° C to +90° C.

Type MW-C	Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
24(7)SJ	24	7/32	.085″	1	1370	$50·94	$6·00
22(7)SJ	22	7/30	.092″	1	1371	53·30	6·29
20(7)SJ	20	7/28	.100″	1	1372	61·13	7·01
18(19)SJ	18	19/30	.110″	1	1373	69·32	7·83
16(19)SJ	16	19/29	.120″	1	1374	90·38	9·93
14(19)SU	14	19/27	.140″	1	1375	122·70	13·02
12(19)SU	12	19/25	.156″	1	1376	150·60	15·83

TYPE MW (MEDIUM WALL) GLASS BRAID (FIG. B)

Extra flexible stranded tinned copper, white medium wall polyvinylchloride insulation, color coded flame retardant lacquered glass braid overall. Nom. wall thickness, .016″. Voltage rating, 1000 volts. Temp. rating, −40° C to +80° C. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Type MW-C	Conductor		Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
18(16)B	18	16/30	.090″	1-6	1592	$ 36·00	$ 3·96
16(26)B	16	26/30	.105″	1-6	1593	48·00	5·28
14(41)B	14	41/30	.120″	1	1594	69·00	7·59
12(65)B	12	65/30	.135″	1	1595	105·00	11·55

SPECIFICATION N MIL-W-76B PLASTIC HOOK-UP WIRE (CONT'D)

TYPE MW (MEDIUM WALL) GLASS BRAID SHIELDED (FIG. D)

Extra flexible stranded tinned copper, white medium wall polyvinylchloride insulation, white flame retardant lacquered glass braid with tinned copper shield overall, 80% coverage. Nom. wall thickness, .016″. Voltage rating, 1000 volts. Temp. rating, −40° C to +80° C. Resistant to acids, alkalis, oil, flame, moisture and fungus.

Type MW-C	Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
24(7)BS	24	7/32	.091″	1	1194/24	$56·25	$ 6·50
22(7)BS	22	7/30	.097″	1	1194/22	57·00	6·59
20(10)BS	20	10/30	.105″	1	1194	69·00	7·97
18(16)BS	18	16/30	.117″	1	1196	75·00	8·67
16(26)BS	16	26/30	.129″	1	1197	88·80	10·26

TYPE HW (HEAVY WALL) PLASTIC (FIG. A)

Single conductor stranded tinned copper; heavy wall polyvinylchloride insulation. Nominal insulation .032″ for 22-16 cond. sizes; .045″, all other sizes. Voltage rating, 2500 V 22-16 cond. sizes; 600 V, all other sizes. Temp., −40° C to +80° C.

Type HW-C	Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
22(7)U	22	7/30	.092″	1-6	1571	$ 15·32	$ 2·01
20(10)U	20	10/30	.100″	1-6	1573	18·53	2·40
18(16)U	18	16/30	.112″	1-6	1575	23·63	3·17
16(26)U	16	26/30	.126″	1-3	1577	30·48	3·90
14(41)U	14	41/30	.170″	1-3	1579	53·00	6·68
12(65)U	13	65/30	.186″	1-3	1651	78·38	8·55
10(105)U	10	105/30	.210″	1-3	1653	119·55	12·30
8(133)U	8	133/29	.260″	1-3	1655	270·00	28·50

TYPE LW (LIGHT WALL) PLASTIC (FIG. A) WITH REGULAR TINNED CONDUCTOR

Single conductor stranded tinned copper: light wall polyvinylchloride insulation .010″ th. Rated 300 volts. Temp., −40° C to +80° C.

Type LW-C	Conductor		Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
30(7)U	30	7/38	.033″	1-19	1685	$ 7·89	$1·11
28(7)U	28	7/36	.035″	1-19	1686	8·04	1·34
26(7)U	26	7/34	.038″	1-19	1687	8·19	1·35
24(7)U	24	7/32	.043″	1-19	1688	8·82	1·46
22(7)U	22	7/30	.049″	1-19	1689	9·62	1·49
20(7)U	20	7/28	.060″	1-19	1690	12·45	1·85

TYPE LW (LIGHT WALL) PLASTIC, NYLON JACKET (FIG. C)

Single conductor stranded tinned copper, light wall polyvinylchloride insulation, clear nylon jacket overall. Insulation .010″ nominal. Rated 300 volts. Temp., −40° C to +90° C.

Type LW-C	Conductor		Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
26(7)J	26	7/34	.042″	1-19	1677	$12·66	$1·97
24(7)J	24	7/32	.047″	1-19	1678	13·10	2·00
22(7)J	22	7/30	.053″	1-19	1679	14·22	2·18
20(7)J	20	7/28	.065″	1-19	1680	17·82	2·63

SPECIFICATION MIL-W-16878D HOOK-UP WIRE

RX-7000 IRRADIATED-HEAT RESISTANT HOOK-UP WIRE (FIG. A)

Newly developed hook-up wire with insulation made of irradiated polyvinylchloride compound (PVC) provides insulation far superior to ordinary PVC. Withstands higher temperature, and even in direct contact with a soldering iron will not shrink back, melt, blow or deform. Ideal where high reliability is essential, particularly in the wiring of tight, high density systems, appliances, computer wiring, business machines, instrumentation and control systems. Rated 600 volts, Type B; 1000 volts, Type C. Temperature, +105° C.

MIL-W-16878/D TYPE B STRANDED, +105° C, 600 VOLTS

Alpha No.	Conductor		Nom. O.D.	Colors*	Net per Spool	
	Size	Strand			1000′	100′
7053	26	7/34	.038″	1-19	$14·63	$3·48
7054	24	7/32	.043″	1-19	13·80	3·39
7054/19	24	19/36	.043″	1-19	15·83	3·62
7055	22	7/30	.050″	1-19	14·93	3·51
7055/19	22	19/34	.050″	1-19	18·90	3·96
7056	20	7/28	.058″	1-19	16·43	3·68
7056/19	20	19/32	.058″	1-19	20·18	4·10
7057	18	7/26	.068″	1-19	22·73	4·38
7057/19	18	19/30	.068″	1-19	25·29	4·65
7058/19	16	19/.0117	.077″	1-19	30·83	5·27

MIL-W-16878/D TYPE C STRANDED, +105° C, 1000 VOLTS

7030	24	7/32	.058″	1-19	$15·38	$3·57
7031	22	7/30	.064″	1-19	17·33	3·78
7032	20	7/28	.072″	1-19	18·30	3·89
7033	18	7/26	.082″	1-19	22·88	4·40
7034	16	19/29	.091″	1-19	29·70	5·15
7035	14	19/27	.105″	1-19	45·45	6·87
7036	12	19/25	.124″	1-19	60·23	8·51

*‡See following page for colors.

alpha ALPHA WIRE MIL-Spec Hook-Up Wire

SPECIFICATION MIL-W-16878D HOOK-UP WIRE (CONT'D)

TYPE B UNCOVERED PLASTIC (FIG. A)

Single conductor stranded tinned copper, .010″ polyvinylchloride insulation. Rated 600 volts. Temp., −55° C to +105° C.

MIL-W Type	Conductor		Nom. O.D.	Col-ors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
B-32	32	7/40	.028″	1-19	1850	$13·20	$1·80
B-30	30	7/38	.032″	1-19	1851	10·35	1·50
B-28	28	7/36	.034″	1-19	1852	9·45	1·47
B-26	26	7/34	.038″	1-19	1853	10·40	1·47
B-24	24	7/32	.043″	1-19	1854	9·71	1·47
B-24	24	19/36	.043″	1-19	1854/19	11·70	1·86
B-22	22	7/30	.050″	1-19	1855	10·58	1·61
B-22	22	19/34	.050″	1-19	1855/19	12·68	2·00
B-20	20	7/28	.058″	1-19	1856	12·75	1·95
B-20	20	19/32	.058″	1-19	1856/19	15·15	2·12
B-18	18	7/26	.068″	1-19	1857	16·20	2·13
B-18	18	19/30	.068″	1-19	1857/19	17·66	2·46
B-16	16	19/29	.077″	1-19	1858/19	21·60	2·76
B-14	14	19/27	.091″	1-19	1859/19	37·92	5·12

TYPE B NYLON JACKET (FIG. C)

Same as above, but clear nylon jacket overall; 115° C.

B-26	26	7/34	.044″	1-19	1863	$14·33	$2·00
B-24	24	7/32	.049″	1-19	1864	13·65	1·97
B-24	24	19/36	.049″	1-19	1864/19	16·13	2·16
B-22	22	7/30	.056″	1-19	1865	15·45	2·13
B-22	22	19/34	.056″	1-19	1865/19	18·45	2·43
B-20	20	7/28	.064″	1-19	1866	17·40	2·33
B-20	20	19/32	.064″	1-19	1866/19	19·80	2·58
B-18	18	7/26	.074″	1-19	1867	21·75	2·85
B-18	18	19/30	.074″	1-19	1867/19	25·20	3·21
B-16	16	19/29	.085″	1-19	1868/19	27·75	3·03
B-14	14	19/27	.099″	1-19	1869/19	52·22	6·30

TYPE B, PRE-BONDED, UNCOVERED PLASTIC (FIG. A)

Each strand is double tinned and then heated to bond the strands together for easy stripping. Insulation per MIL-W-16878D, .010″ polyvinylchloride. Rated 600 volts. Temp., −55° C to +105° C.

B-24	24	7/32	.044″	1-19	3154	$13·14	$2·85
B-22	22	7/30	.051″	1-19	3155	16·55	3·24
B-20	20	7/28	.059″	1-19	3156	21·48	2·39
B-18	18	7/26	.070″	1-19	3157	30·27	4·59

TYPE C UNCOVERED PLASTIC (FIG. A)

Single conductor stranded tinned copper; .016″ polyvinylchloride insulation. Rated 1000 volts. Temp., −55° C to +105° C.

MIL-W Type	Conductor		Nom. O.D.	Col-ors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
C-24	24	7/32	.058″	1-19	1830	$12·75	$1·77
C-22	22	7/30	.064″	1-19	1831	14·03	1·92
C-20	20	7/28	.072″	1-19	1832	17·10	2·22
C-18	18	7/26	.082″	1-19	1833	20·85	2·67
C-16	16	19/29	.091″	1, 11-19	1834	27·60	3·30
C-14	14	19/27	.105″	1, 11-19	1835	40·50	5·04
C-12	12	19/25	.124″	1, 11-19	1836	71·69	8·42

TYPE C NYLON JACKET (FIG. C)

Same as above, but clear nylon jacket overall; 115° C.

C-24	24	7/32	.065″	1-19	1840	$15·60	$2·25
C-22	22	7/30	.072″	1-19	1841	18·68	2·58
C-20	20	7/28	.079″	1, 11-19	1842	22·63	2·82
C-18	18	7/26	.090″	1, 11-19	1843	26·25	3·18
C-16	16	19/29	.099″	1, 11-19	1844	34·50	3·78
C-14	14	19/27	.114″	1, 11-19	1845	47·25	5·25
C-12	12	19/25	.135″	1, 11-19	1846	84·84	9·45

TYPE C SHIELDED NYLON JACKET (FIG. D)

Shielded version of above. Single stranded tinned copper conductor. White .016″ polyvinylchloride insulation. Braided, tinned copper shield, 90% coverage. Clear nylon jacket. Rated −55° C to +115° C. Voltage rating, 1000 volts.

MIL-W Type	Conductor		Nom. O.D.	Col-ors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
C-24	24	7/32	.091″	1	1470	$ 63·56	$ 7·79
C-22	22	7/30	.098″	1	1471	67·71	8·19
C-20	20	7/28	.105″	1	1472	73·80	8·85
C-18	18	19/30	.115″	1	1473	80·40	9·35
C-16	16	19/29	.125″	1	1474	102·08	11·54
C-14	14	19/27	.142″	1	1475	122·70	13·50
C-12	12	19/25	.156″	1	1476	150·60	16·56

TYPE D NYLON JACKET (FIG. C)

Stranded tinned copper, color coded polyvinylchloride insulation. Sizes 24-6, clear nylon (polyamide) jacket overall. Temp. rating, −55° C to +115° C. Voltage rating, 3000 volts. Resistant to acids, alkalis, oil, flame, moisture, solvents and fungus.

MIL-W Type	Conductor		Nom. O.D.	Col-ors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
D-24	24	7/32	.090″	1-3	1880	$ 25·13	$ 3·39
D-22	22	7/30	.096″	1-3	1881	29·46	3·81
D-20	20	7/28	.104″	1-3	1882	34·65	4·34
D-18	18	7/26	.114″	1-3	1883	45·05	5·37
D-16	16	19/29	.125″	1-3	1884	55·44	6·41
D-14	14	19/27	.139″	1-3	1885	79·70	8·84
D-12	12	19/25	.168″	1-3	1886	113·08	12·24
D-10	10	37/26	.197″	1	1887	169·44	17·82
D-8	8	133/29	.265″	1	1888	322·43	33·11
D-6	6	133/27	.310″	1	1889	450·45	45·92

TYPE D UNCOVERED PLASTIC (FIG. A)

Single conductor stranded tinned copper; .032″ polyvinylchloride insulation. Rated 3000 volts. Temp., −55° C to +105° C.

MIL-W Type	Conductor		Nom. O.D.	Col-ors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
D-24	24	7/32	.082″	1-3	1870	$ 16·56	$ 2·34
D-22	22	7/30	.088″	1-3	1871	21·15	2·70
D-20	20	7/28	.096″	1-3	1872	25·35	3·18
D-18	18	7/26	.106″	1-3	1873	30·90	3·51
D-16	16	19/29	.115″	1-3	1874	45·75	4·95
D-14	14	19/27	.129″	1-3	1875	50·40	5·13
D-12	12	19/25	.158″	1-3	1876	81·75	8·19
D-10	10	37/26	.185″	1	1877	108·75	10·95
D-8	8	133/29	.247″	1	1878	276·00	28·35
D-6	6	133/27	.290″	1	1879	384·62	39·33

TYPE E TEFLON® WIRE (FIG. A)

Single conductor stranded, silver-plated copper, extruded TFE Teflon insulation .010″ thick. Temp., −65° C to +200° C. Rated 600 volts. Put-up on spools.

MIL-W Type	Cond. Strand	Nom. O.D.	Colors‡	Alpha No.	Net per Spool	
					1000′	100′
E-32	7/40	.029″	1-19	2850	$ 86·00	$ 9·02
E-30	7/38	.032″	1-19	2851	83·69	8·78
E-28	7/36	.036″	1-19	2852	89·31	9·35
E-26	7/34	.040″	1-19	2853	93·27	9·77
E-26	19/38	.041″	1-19	2853/19	108·75	11·97
E-24	19/36	.045″	1-19	2854	106·68	11·09
E-24	7/32	.044″	1-19	2854/7	92·79	9·68
E-22	19/34	.051″	1-19	2855	119·25	12·32
E-22	7/30	.050″	1-19	2855/7	109·16	11·33
E-20	19/32	.059″	1-19	2856	152·99	15·75
E-20	7/28	.058″	1-19	2856/7	135·62	13·97
E-18	19/30	.070″	1-19	2857	174·30	18·27
E-16	19/20	.077″	1-19	2858	232·52	24·06
E-14	19/27	.094″	1-6, 11-19	2859§	310·99	31·92
E-12	19/25	.113″	1, 11-19	2859/12§	463·05	47·15
E-10	37/26	.134″	1, 11-19	2859/10§	777·27	79·38

§Insul., .012″ th.

TYPE EE TEFLON® WIRE (FIG. A)

Same as Type E, but .014″ thick extruded. TFE Teflon insulation. Rated 1000 volts. Temperature, −65° C to +200° C.

MIL-W Type	Conductor		Nom. O.D.	Colors‡	Alpha No.	Spool of 100′▲
	Size	Strand				
EE-24	24	19/36	.055″	1-19	2874	$ 11·84
EE-22	22	19/34	.062″	1-19	2875	13·74
EE-20	20	19/32	.070″	1-19	2876	17·78
EE-18	18	19/30	.080″	1-19	2877	20·69
EE-16	16	19/29	.089″	1, 11-19	2878	27·63
EE-14	14	19/27	.106″	1, 11-19	2879§	38·04
EE-12	12	19/25	.124″	1, 11-19	2879/12§	56·24
EE-10	10	37/26	.145″	1, 11-19	2879/10§	94·26
EE-8	8	133/29	.210″	1	2879/8#	191·84

§Insul., .017″ thick. #Insul., .020″ thick. ▲Spool of 1000′ also avail.; prices on request. Also avail. to order: Cut, stripped and tinned.

TYPE ET EXTRUDED TEFLON® WIRE (FIG. A)

Single conductor stranded, silver-plated copper; extruded TFE Teflon insulation, .006″ thick. Rated 250 volts. Temperature, −65° C to +200° C.

MIL-W Type	Conductor		Nom. O.D.	Col-ors‡	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
ET-32	32	7/40	.021″	1-10	2840/7	$31·74	$3·93
ET-30	30	7/38	.024″	1-10	2841/7	29·88	3·74
ET-28	28	7/36	.027″	1-10	2842/7	29·37	3·69
ET-28	28	19/40	.027″	1-10	2842/19	53·37	6·09
ET-26	26	7/34	.031″	1-10	2843/7	30·75	3·83
ET-26	26	19/38	.032″	1-10	2843/19	45·87	5·34
ET-24	24	7/32	.036″	1-10	2844/7	39·12	4·67
ET-24	24	19/36	.037″	1-10	2844/19	49·88	5·75
ET-22	22	7/30	.042″	1-10	2845/7	47·75	5·52
ET-22	22	19/34	.044″	1-10	2845/19	58·50	6·60
....	30†	Solid	.022″	1-10	2841/1	27·38	3·50
....	28†	Solid	.025″	1-10	2842/1	26·63	3·42
....	26†	Solid	.028″	1-10	2843/1	28·13	3·50
....	24†	Solid	.032″	1-10	2844/1	30·87	3·77

†Solid silver plated copper conductor.

TYPE E TEFLON® SOLID-CONDUCTOR WIRE (FIG. A)

Single solid silver-plated copper conductor; extruded TFE Teflon insulation. Rated 600 V. Temp., −65° C to +200° C.

E-26	26	Solid	.036″	1-10	5853/1	$23·99	$3·18
E-24	24	Solid	.040″	1-10	5854/1	27·44	3·53
E-22	22	Solid	.045″	1-10	5855/1	33·51	4·14
E-20	20	Solid	.052″	1-10	5856/1	42·41	5·03
E-18	18	Solid	.060″	1-10	5857/1	56·52	6·44

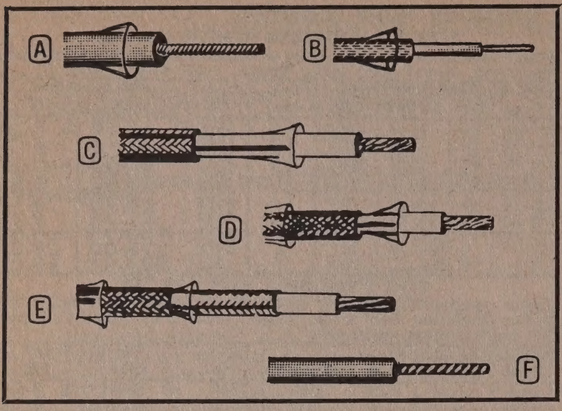
* ‡ STOCK COLORS

*Specify color. ‡Prices shown are for solid colors only. Following striping charges apply for either one, two or three spiral tracers per item in any standard put-up. Plastic and nylon jacketed wire, **$1.50** per 1000′; Teflon® wire, **$10.50** per 1000′. Other tracer colors available at extra cost. Write for information.

No.	Color	No.	Color	No.	Color
1	White	10	Violet	19	White/Violet
2	Black	11	White/Black	20	White/Black/Red
3	Red	12	White/Red	21	White/Black/Green
4	Green	13	White/Green	22	White/Black/Yellow
5	Yellow	14	White/Yellow	23	White/Black/Blue
6	Lt. Blue	15	White/Blue	24	White/Black/Brown
7	Brown	16	White/Brown	25	White/Black/Orange
8	Orange	17	White/Orange	26	White/Black/Gray
9	Gray	18	White/Gray	27	White/Black/Violet

®DuPont trademark.

alpha ALPHA WIRE MIL-SPEC AND UL HOOK-UP WIRE



MIL-W-5086A AND MIL-C-7078A AIRCRAFT HOOK-UP WIRE

Single conductor. Rated 600 volts. Temp., −55° C to +105° C. Resists water, oil, fuels, alcohol, acids, alkalis, fungus and abrasion.

UNSHIELDED MIL-W-5086A (FIG. B)

Type 1: Single, stranded tinned copper conductor; white PVC insulation; clear nylon jacket overall. **Type 2:** Single, stranded tinned copper conductor; white PVC insulation; white glass braid; and, clear nylon jacket (AN-22—AN-12) or flame retardant nylon lacquered nylon braid (AN-10—AN-0000) overall.

MIL Type	Spec. Type	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
AN-22	1	22	19/34	.068″	1381*	$ 28.50	$ 3.74
AN-20	1	20	19/32	.078″	1382*	33.21	4.17
AN-18	1	18	19/30	.088″	1383*	41.03	5.00
AN-16	1	16	19/29	.098″	1384*	45.02	5.45
AN-14	1	14	19/27	.117″	1385*	62.63	7.19
AN-12	1	12	19/25	.137″	1386*	91.67	10.08
AN-22	2	22	19/34	.075″	1341	41.34	4.59
AN-20	2	20	19/32	.085″	1342	48.71	5.30
AN-18	2	18	19/30	.095″	1343	58.91	6.39
AN-16	2	16	19/29	.105″	1344	67.49	7.79
AN-14	2	14	19/27	.125″	1345	93.65	10.38
AN-12	2	12	19/25	.143″	1346	128.79	13.89
AN-10	2	10	49/27	.189″	1387	172.43	18.15
AN-8	2	8	133/29	.240″	1388	326.70	34.49
AN-6	2	6	133/27	.293″	1389	471.90	49.01
AN-1	2	1	817/30	.470″	1389/1	1164.60	117.21
AN-4	2	4	133/25	.355″	1389/4	680.63	69.89
AN-2	2	2	665/30	.425″	1389/2	1016.40	103.46
AN-0	2	0	1045/30	.525″	1389/0	1615.35	166.98
AN-00	2	00	1330/30	.590″	1389/00	2032.80	208.73
AN-000	2	000	1661/30	.645″	1389/000	2277.00	228.45
AN-0000	2	0000	2104/30	.715″	1389/0000	2772.00	277.95

*Fig. A.

UNJACKETED SHIELDED CABLE (MIL-C-7078A TYPE 1) BASE WIRE MIL-W-5086A TYPE 1 (FIG. C)

Each conductor stranded tinned copper, color coded polyvinylchloride insulation. Clear nylon jacket on each conductor, cabled, braided tinned copper shield overall. 85% coverage per Type 1 MIL-5086A, Type 1 MIL-C-7078A. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts. Resists effects of water, oil, aircraft fuels, hydraulic fluid, skydral, ethyleneglycol, alcohol, dilute acids, alkalis, fungus and abrasion.

MIL-W Type	No. of Cond.†	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
AN-22	1	22	19/34	.090″	1391	$ 82.59	$ 9.08
AN-22	2	22	19/34	.160″	1391/2	152.73	16.80
AN-20	1	20	19/32	.100″	1392	88.50	9.74
AN-20	2	20	19/32	.180″	1392/2	169.26	18.62
AN-18	1	18	19/30	.110″	1393	99.12	10.91
AN-18	2	18	19/30	.200″	1393/2	189.03	20.79
AN-16	1	16	19/29	.120″	1394	117.36	12.92

NYLON JACKETED SHIELDED CABLE (MIL-C-7078A TYPE 2) BASE WIRE MIL-W-5086A TYPE 1 (FIG. D)

Each conductor stranded tinned copper, color coded PVC insulation clear nylon jacket on each conductor, cabled, braided tinned copper shield. 85% coverage. Clear nylon jacket overall. Per Type 1 MIL-W-5086A; per Type 2 MIL-C-7078A.

AN-22	1	22	19/34	.100″	6460	$ 97.35	$10.56
AN-22	2	22	19/34	.170″	6461	162.53	17.00
AN-22	3	22	19/34	.180″	6462	208.40	22.53
AN-20	1	20	19/32	.110″	6463	102.72	11.06
AN-20	2	20	19/32	.190″	6464	176.55	18.48
AN-20	3	20	19/32	.200″	6465	227.37	24.42
AN-18	1	18	19/30	.120″	6466	122.93	13.13
AN-18	2	18	19/30	.210″	6467	194.70	21.12
AN-18	3	18	19/30	.220″	6468	266.90	28.38
AN-16	1	16	19/29	.130″	6469	127.88	13.62
AN-14	1	14	19/27	.150″	6470	162.95	17.16
AN-12	1	12	19/25	.170″	6471	204.77	22.11

†**Color Code of Conductors:** 1 = White; 2 = 1 White/Blue, 1 White/Red; 3 = 1 White/Blue, 1 White/Red, 1 White/Yellow.

NYLON JACKETED SHIELDED CABLE (MIL-C-7078A TYPE 2) BASE WIRE MIL-W-5086A TYPE 2 (FIG. E)

Each conductor stranded tinned copper. White PVC insulation. Color coded glass braid on each conductor. Clear nylon jacket on each conductor. Conductors cabled, braided, tinned copper, shield overall. 85% coverage. Clear nylon jacket overall per Type 2, MIL-W-5086A, Type 2, MIL-C-7078A. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts. Resists effects of water, oil, aircraft fuels, hydraulic fluid, skydral, ethyleneglycol, alcohol, dilute acids, alkalis, fungus and abrasion.

MIL-W Type	No. of Cond.†	Conductor Size	Conductor Strand	Nom. O.D.	Alpha No.	Net per Spool 1000′	Net per Spool 100′
AN-22	1	22	19/34	.105″	6477	$103.13	$11.15
AN-22	2	22	19/34	.180″	6478	182.33	19.89
AN-22	3	22	19/34	.190″	6479	232.25	24.92
AN-20	1	20	19/32	.115″	6480	111.80	12.05
AN-20	2	20	19/32	.200″	6481	206.25	22.28
AN-20	3	20	19/32	.210″	6482	278.85	29.54
AN-18	1	18	19/30	.125″	6483	132.17	14.03
AN-18	2	18	19/30	.220″	6484	233.97	25.08
AN-18	3	18	19/30	.234″	6485	309.38	32.60
AN-16	1	16	19/29	.135″	6486	145.62	15.35
AN-14	1	14	19/27	.160″	6487	179.03	19.56
AN-12	1	12	19/25	.175″	6488	230.18	24.68

†**Color Code of Conductors:** 1 = White; 2 = 1 White/Blue, 1 White/Red; 3 = 1 White/Blue, 1 White/Red, 1 White/Yellow.

QUICK CUSTOM CONSTRUCTION UL HOOK-UP WIRE

The special, custom or prototype, UL Listed wire you need—in ready to use form—from one foot to production requirements, produced and delivered to you fast. Stranded tinned copper, color coded polyvinylchloride insulation. Resistant to acids, alkalis, oil, flame, moisture and fungus.

300 VOLTS, 80° C, UL STYLE 1007 (FIG. F)

Temperature rating, −10° C to +80° C. Voltage rating, 300 volts. Nom. wall thickness, .016″. CSA Style TR-64, 1/64″ nom. wall thickness.

Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net per Spool 1000′	Net per Spool 100′
24	7/32	.057″	1–19	3050	$10.20	$2.55
22	7/30	.065″	1–19	3051	12.72	3.00
20	10/30	.071″	1–19	3053	13.41	3.06
18	16/30	.080″	1–19	3055	18.32	3.54
16	26/30	.095″	1–19	3057	28.70	4.34

600 VOLTS, 105° C, UL STYLE 1015 (FIG. F)

Temperature rating, −10° C to +105° C. Voltage rating, 600 volts. Nom. wall thickness, .016″. CSA Style TEW-105, 1/32″ nom. wall thickness.

22	7/30	.095″	1–10	3071	$12.60	$1.82
20	10/30	.102″	1–10	3073	15.98	2.13
18	16/30	.112″	1–10	3075	20.25	2.64
16	26/30	.125″	1–10	3077	29.40	3.51
14	41/30	.142″	1–10	3079	40.20	4.73

SEMI-RIGID PVC, 300 VOLTS, 80° C, UL STYLE 1061 (FIG. F)

Stranded tinned copper, color coded semi-rigid polyvinylchloride insulation. Temperature rating, −10° C to +80° C. Voltage rating, 300 volts in business machine or electronic computers only. Nom. wall thickness, .009″. Applications include internal wiring of computers, electric bookkeeping, accounting machines, and other office and control equipment.

24	7/32	.042″	1–10	3250	$ 7.35	$0.83
22	7/30	.048″	1–10	3251	9.30	1.05
20	7/28	.056″	1–10	3252	12.45	1.37

NYLON JACKET, 300 VOLTS, 80° C, UL STYLE 1008 (FIG. A)

Stranded tinned copper, color coded, polyvinylchloride insulation, clear nylon (polyamide) jacket overall. Nom. wall thickness, .016″. Voltage rating, 300 V. Temp. rating, +10° C to +80° C.

Type	Conductor Size	Conductor Strand	Nom. O.D.	Colors*	Alpha No.	Net/Spool 1000′	Net/Spool 100′
C-24	24	7/32	.065″	1–19	3840	$16.38	$2.37
C-22	22	7/30	.072″	1–19	3841	19.61	2.72
C-20	20	7/28	.079″	1–19	3842	23.79	2.96
C-18	18	7/26	.090″	1–19	3843	27.57	3.35
C-16	16	19/29	.099″	1, 11–19	3844	36.23	3.98

NYLON JACKET, 80° C, UL STYLE 1004 (FIG. A)

Stranded tinned copper, color coded **light wall** polyvinylchloride insulation, clear nylon (polyamide) jacket overall. Nominal jacket thickness, .002″. Nom. wall thickness, .010″. Temp. rating, −40° C to +80° C.

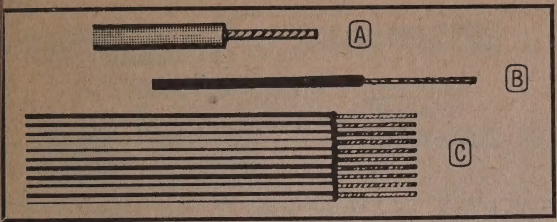
LW-C26(7)J	26	7/34	.042″	1–19	3677	$12.06	$1.88
LW-C24(7)J	24	7/32	.047″	1–19	3678	12.47	1.92
LW-C22(7)J	22	7/30	.053″	1–19	3679	13.55	2.07
LW-C20(7)J	20	7/28	.065″	1–19	3680	16.97	2.51

*STOCK COLORS

1–White
2–Black
3–Red
4–Green
5–Yellow
6–Light Blue
7–Brown
8–Orange
9–Gray (Slate)
10–Violet (Purple)
11–White/Black
12–White/Red
13–White/Green
14–White/Yellow
15–White/Blue
16–White/Brown
17–White/Orange
18–White/Gray
19–White/Violet

alpha **ALPHA WIRE**

UL HOOK-UP WIRE AND RIBBON CABLE



UNCOVERED PVC, 600 VOLTS, 80° C
UL STYLE 1011 (FIG. A)

Stranded tinned copper, color coded **heavy wall** polyvinylchloride insulation. Temp. rating, −40° C to +80° C. Voltage rating, 600 volts. Resistant to acids, alkalis, oil, flame, moisture and fungus. Nom. wall thickness, **Nos. 2571–2577**, .032″; balance, .045″.

Type	Conductor		Nom. O.D.	Col-ors*	Alpha No.	Net per Spool	
	Size	Strand				1000′	100′
HW-C22(7)U	22	7/30	.092″	1–6	2571	$ 16.08	$ 2.12
HW-C20(10)U	20	10/30	.100″	1–6	2573	19.46	2.52
HW-C18(16)U	18	16/30	.112″	1–6	2575	24.81	3.33
HW-C16(26)U	16	26/30	.126″	1–3	2577	32.00	4.10
HW-C14(41)U	14	41/30	.170″	1–3	2579	55.65	7.00
HW-C12(65)U	12	65/30	.186″	1–3	2551	82.29	8.99
HW-C10(105)U	10	105/30	.210″	1–3	2553	125.54	12.92
HW-C8(133)U	8	133/29	.260″	1–3	2555	283.50	29.93

TEFLON®, 200° C, UL STYLE 1212, 1213 (FIG. B)

Single conductor stranded silver plated copper, extruded TFE Teflon insulation. Temp. rating, −65° C to +200° C. Nom. wall thickness, .010″. Resistant to acid, alkalis, oil, flame, moisture, solvents and fungus.

Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
Size	Strand				1000′	100′
32	7/40	.029″	1–19	6850	$ 90.30	$ 9.47
30	7/38	.032″	1–19	6851	87.87	9.21
28	7/36	.036″	1–19	6852	93.78	9.81
26	7/34	.040″	1–19	6853	97.94	10.26
26	19/38	.041″	1–19	6853/19	114.20	12.57
24	19/36	.045″	1–19	6854	112.02	11.64
24	7/32	.044″	1–19	6854/7	97.43	10.16
22	19/34	.051″	1–19	6855	125.22	12.93
22	7/30	.050″	1–19	6855/7	114.62	11.90
20	19/32	.059″	1–19	6856	160.64	16.55
20	7/28	.058″	1–19	6856/7	142.40	14.67

TEFLON, 200° C, UL STYLE 1164, 1180 (FIG. A)

Single conductor stranded silver plated copper, extruded TFE Teflon insulation. Temp. rating, −65° C to +200° C. Nom. wall thickness, .014″. Resistant to acid, alkalis, oil, flame, moisture, solvents and fungus.

24	19/36	.055″	1–19	6874	$119.66	$12.42
22	19/34	.062″	1–19	6875	139.80	14.43
20	19/32	.070″	1–19	6876	177.83	18.66
18	19/30	.080″	1–19	6877	208.38	21.72
16	19/29	.089″	1, 11–19	6878	281.31	29.00

RX-7000 IRRADIATED-HEAT RESISTANT HOOK-UP WIRE MIL-W-16878D
UL STYLES 1430, 1429, 1472 (FIG. A)

Newly developed hook-up wire with insulation made of irradiated polyvinylchloride compound (PVC) provides insulation far superior to ordinary PVC. Withstands higher temperature, and even in direct contact with a soldering iron will not shrink back, melt, blow or deform. Ideal where high reliability is essential, particularly in the wiring of tight, high density systems, appliances, computer wiring, business machines, instrumentation and control systems. Rated 300 volts.

UL STYLE 1430, 105° C, 300 VOLTS

Nom. wall thickness, .016″.

Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
Size	Strand				1000′	100′
24	7/32	.056″	1–19	7130	$15.38	$3.57
22	7/30	.062″	1–19	7131	17.33	3.78
20	7/28	.070″	1–19	7132	18.30	3.89
18	7/26	.080″	1–19	7133	22.88	4.40
16	19/.0117	.091″	1–19	7134	29.70	5.15

UL STYLE 1429, SOLID AND STRANDED, 80° C

Nom. wall thickness, .010″.

26	7/34	.038″	1–19	7149	$14.63	$3.48
34	7/32	.043″	1–19	7150	13.80	3.39
22	7/30	.050″	1–19	7151	14.93	3.51
20	7/28	.068″	1–19	7153	16.43	3.68
18	7/26	.068″	1–19	7155	22.73	4.38
16	19/.0117	.077″	1–19	7157	30.83	5.27
22	Solid	.045″	1–19	7161	13.80	3.39
24	Solid	.040″	1–19	7161/24	12.00	3.20
20	Solid	.054″	1–19	7163	16.97	3.74

UL STYLE 1472, STRANDED, 80° C, 300 VOLTS

Nom. wall thickness, .0075″.

30	7/38	.028″	1–19	7070	$27.60	$4.91
28	7/36	.032″	1–19	7071	22.65	4.37
26	7/34	.034″	1–19	7072	20.25	4.11
24	7/32	.040″	1–19	7073	19.35	4.00
22	7/30	.045″	1–19	7074	21.00	4.19
20	7/28	.054″	1–19	7075	23.85	4.50

KYNAR® WIRE, 125° C, 300 VOLTS FOR WIRE WRAP® CONNECTIONS (FIG. A)

Solid, silver-plated, oxygen-free high conductivity (OFHC) copper conductor, extruded Kynar (Polyvinylidene fluoride) insulation. Extremely tough, high cut-through resistance. Self-extinguishing, will not support combustion. Excellent ultra-violet and weathering resistance. For use in automatic wrapping equipment in the computer and related industries. Temp. rating, through 125° C continuous (UL rated at 105° C). Voltage rating, 300 volts. Nominal wall thickness, .005″. Cut lengths available, write or phone for information.

Conductor Size	Nom. O.D.	Colors*	Alpha No.	Net per Spool	
				1000′	100′
30	.020″	1–10	5951	$18.00	....
28	.023″	1–10	5952	20.84	....
26	.026″	1, 3–9	5953	21.33	....
24	.030″	1, 3–6	5954	26.34	....

TEFZEL® COMPUTER WIRE, 150° C, 300 VOLTS (FIG. B)

Rugged, flexible wire-wrap wire. Solid silver-plated OFHC copper conductor. Tefzel insulation (copolymer of ethylene and tetra fluourethylene. Low dielectric constant of 2.6. Rated non-burning or self-extinguishing. Temp. rating, −100° C to +150° C continuous. Voltage rating, 300 volts. Nom. wall thickness, .005″. Cut lengths available, write or phone for information.

30	.019″	1–10	1805	$48.38	$5.61
28	.023″	1–10	1806	52.13	5.97
26	.026″	1–10	1807	56.07	6.36
24	.029″	1–10	1808	63.20	7.07

RIBBON CABLE MIL-W-16878D, TYPES B & C UL, FR-1, ROUND CONDUCTOR, FLAT BONDED (FIG. C)

Round conductor, flat bonded ribbon cable saves space, simplifies cable identification. Each conductor stranded tinned copper, color coded PVC insulation.

TYPE B

Nom. wall thickness, .010″. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts.

Conductor		No. of Cond.	Nom. O.D., In.		Alpha No.	Net per 100 Ft.	
Size	Strand		Width	Thick-ness		1-499′	500-1000′
22	19/34	10	.510	.051	3530	$ 37.17	$29.98
22	19/34	15	.765	.051	3531	55.76	43.47
22	19/34	20	1.05	.051	3532	74.34	57.96
22	19/34	30	1.57	.051	3533	111.51	86.94
24	19/36	10	.440	.044	3540	31.19	24.26
24	19/36	15	.662	.044	3541	46.79	36.39
24	19/36	20	.883	.044	3542	62.37	48.51
24	19/36	30	1.35	.044	3543	93.56	72.77
26	7/34	10	.392	.039	3550	24.11	18.75
26	7/34	15	.587	.039	3551	36.15	28.13
26	7/34	20	.783	.039	3552	48.20	37.49
26	7/34	30	1.19	.039	3553	72.30	56.24
28	7/36	10	.351	.035	3560	27.72	21.59
28	7/36	15	.523	.035	3561	41.58	32.37
28	7/36	20	.701	.035	3562	55.44	43.16
28	7/36	30	1.06	.035	3563	83.16	64.74
30	7/38	10	.311	.032	3570	32.61	25.37
30	7/38	15	.482	.032	3571	48.92	38.04
30	7/38	20	1.05	.032	3572	65.21	50.72
30	7/38	30	.965	.032	3573	96.24	76.08

TYPE C

Nom. wall thickness, .016″. Temp. rating, −55° C to +105° C. Colors*, 1–10. Voltage rating, 1000 volts.

22	7/30	5	.065	.320	3505	$199.50	$21.30
22	7/30	10	.065	.640	3510	399.00	41.40
22	7/30	15	.065	.960	3515	600.00	63.00
22	7/30	20	.065	1.92	3520	809.78	82.29

MACHINE TOOL WIRE, 90° C, 600 VOLTS (FIG. A)

Stranded bare copper conductor insulated with thermoplastic insulation. NEC code UL listed. Temp. rating, 90° C in air, 60° C in oil. Voltage rating, 600 volts. For machine tools and appliances where temperatures do not exceed 90° C in dry locations; 60° C where exposed to moisture, oil, or coolants.

Conductor		Nom. O.D.	Colors*	Alpha No.	Net per Spool	
Size	Stranding				1000′	500′
16	26 x 30	.122″	1–10	3090	$ 23.63	$ 12.20
14	19 x .0147	.138″	1–10	3091	31.50	16.13
14	19 x .0147	.170″	1–3	3092	34.28	17.52
12	19 x .0185	.189″	1–3	3093	46.95	23.85
10	19 x .0234	.214″	1–3	3094	71.70	36.23
8	19 x .0295	.277″	2	3095	115.95	58.35
6	19 x .0372	.320″	2	3096	184.65	92.70
4	19 x .0469	.365″	2	3097	268.35	134.55

*COLOR CODE OF CONDUCTORS

No.	Color	No.	Color	No.	Color	No.	Color
1	White	6	Lt. Blue	11	Wht/Blk	16	Wht/Brn
2	Black	7	Brown	12	Wht/Red	17	Wht/Orng
3	Red	8	Orange	13	Wht/Grn	18	Wht/Gray
4	Green	9	Gray	14	Wht/Yel	19	Wht/ Violet
5	Yellow	10	Violet	15	Wht/Blue		

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ALPHA WIRE Control Cable

SHIELDED NYLON PVC CONDUCTORS MIL-W-16878D/B (FIG. A)

Each conductor stranded tinned copper, .010″ polyvinylchloride insulation, color coded, clear nylon (polyamide) jacket, conductors cabled, braided tinned copper shield 90% coverage, white polyvinylchloride jacket overall. Temp. rating, −55° C to +105° C. Voltage rating, 600 volts. Resists acids, alkalis, oil, flame, moisture, fungus, solvents. Nominal wall thickness, .010″; nylon thickness, .003″.

Conductor			Nom. Overall Jacket	Nom. O.D.	Alpha No.	Net per Spool*	
No.	Size	Strand				1000′	100′
1	26	7/34	.010″	.087″	3200	$ 46.26	$ 4.88
2	26	7/34	.014″	.138″	3201	62.88	6.60
3	26	7/34	.014″	.142″	3202	85.47	8.97
4	26	7/34	.016″	.162″	3203	100.74	10.59
1	24	19/36	.010″	.092″	3210	51.00	5.40
2	24	19/36	.016″	.152″	3211	73.05	7.50
3	24	19/36	.016″	.161″	3212	93.75	9.75
4	24	19/36	.017″	.172″	3213	114.00	12.00
1	22	19/34	.010″	.100″	3220	54.29	6.26
2	22	19/34	.016″	.168″	3221	100.25	10.86
3	22	19/34	.017″	.178″	3222	130.77	13.95
4	22	19/34	.019″	.194″	3223	133.73	14.75
1	20	19/32	.010″	.106″	3230	56.10	6.00
2	20	19/32	.019″	.186″	3231	103.05	11.25
3	20	19/32	.019″	.196″	3232	135.45	14.10
4	20	19/32	.021″	.218″	3233	147.00	16.20
1	18	19/30	.012″	.120″	3240	74.75	8.34
2	18	19/30	.021″	.210″	3241	129.03	13.79
3	18	19/30	.022″	.227″	3242	171.60	18.15
4	18	19/30	.023″	.250″	3243	178.05	19.64
1	16	19/29	.016″	.137″	3245	78.30	8.25
2	16	19/29	.023″	.236″	3246	132.75	13.50
3	16	19/29	.023″	.240″	3247	182.55	18.75
4	16	19/29	.025″	.274″	3248	224.70	23.25

22 GAUGE, 5-12 CONDUCTOR CABLE

5	22	19/34	.020″	.212″	3335	$475.00	$48.26
6	22	19/34	.020″	.235″	3336	520.00	52.76
8	22	19/34	.025″	.257″	3337	725.00	73.26
10	22	19/34	.025″	.284″	3340	815.00	82.26
12	22	19/34	.030″	.310″	3342	975.00	98.25

COLOR CODE OF CONDUCTORS

Pair No.	Color Combination	Pair No.	Color Combination
1	Black paired with Red	7	Black paired with Orange
2	Black paired with White	8	Red paired with Green
3	Black paired with Green	9	Red paired with White
4	Black paired with Blue	10	Red paired with Blue
5	Black paired with Brown	11	Red paired with Yellow
6	Black paired with Yellow	12	Red paired with Brown

IRRADIATED CONDUCTOR CABLE, 600 VOLTS, 105° C, MIL-W-16878D/B, UL 1429 (FIG. B)

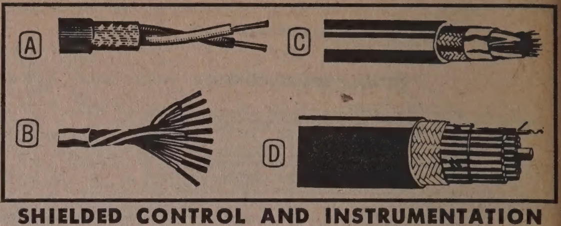
Miniature shielded cable with both military specifications and UL listings. Ideal for application on crowded circuit boards where terminals must be soldered. Prevents shrinkback, melting or charring when used in production line soldering. Stranded tinned copper conductors, color coded, irradiated PVC (RX-7000) insulation (braided, tinned copper shield) white PVC jacket overall. Nom. jacket thickness, .025″. Nom. insul. thickness, .010″. **Conductors' Color Code:** 1 = White; 2 = Black; 3 = Red; 4 = Green.

UNSHIELDED

Conductor			Nom. O.D.	Alpha No.	Net per Spool*	
No.	Size	Strand			1000′	100′
1	24	7/32	.90″	6621A	$ 49.25	$ 5.69
2	24	7/32	.129″	6622A	75.00	9.08
3	24	7/32	.139″	6623	97.50	11.25
4	24	7/32	.150″	6624A	129.75	15.00
1	22	7/30	.98″	6631	52.50	6.06
2	22	7/30	.149″	6632A	87.72	10.13
3	22	7/30	.155″	6633	114.42	12.62
4	22	7/30	.168″	6634A	157.11	18.15
1	20	7/28	.105″	6641A	62.51	7.23
2	20	7/28	.163″	6642A	90.17	10.41
3	20	7/28	.178″	6643	127.50	14.73
4	20	7/28	.187″	6644A	169.74	19.61
1	18	7/26	.115″	6651A	68.75	7.94
2	18	7/26	.182″	6652A	112.91	13.04
3	18	7/26	.193″	6653	150.15	17.34
4	18	7/26	.212″	6654A	210.00	24.26

SHIELDED

1	24	7/32	.115″	7621	$ 59.10	$ 6.83
2	24	7/32	.158″	7622A	90.00	10.89
3	24	7/32	.164″	7623	117.00	13.50
4	24	7/32	.176″	7624A	155.70	17.99
1	22	7/30	.122″	7631	63.00	7.28
2	22	7/30	.172″	7632A	105.26	12.15
3	22	7/30	.180″	7633	137.31	15.14
4	22	7/30	.193″	7634A	188.54	21.78
1	20	7/28	.130″	7661	75.00	8.67
2	20	7/28	.188″	7662	108.20	12.50
3	20	7/28	.197″	7663	153.00	17.67
4	20	7/28	.212″	7664	203.70	23.57
1	18	7/26	.140″	7671	82.50	9.53
2	18	7/26	.208″	7672	135.48	15.65
3	18	7/26	.218″	7673	180.18	20.81
4	18	7/26	.237″	7674	252.00	29.10



SHIELDED CONTROL AND INSTRUMENTATION CABLE, MIL-W-16878D (FIG. C)

Used as interconnecting cables for electronic equipment, instrumentation and control cable, telemetry data, remote control of sensitive recording instruments. Each conductor stranded tinned copper, color coded, polyvinylchloride insulation, cabled, Mylar® wrap. Braided tinned copper shield 90% coverage, chrome gray polyvinylchloride jacket overall. Temp. rating, −55° C to +105° C. Resists acids, alkalis, oil, flame, moisture, solvents and fungus.

MINIATURE SHIELDED CONTROL CABLE— 600 VOLT—TYPE B CONDUCTOR

Nominal Wall Thickness: .010″.

Conductor			Nom. Jkt.	Nom. O.D.	Alpha No.	Net per Spool*	
No.	Size	Strand				1000′	100′
2	B-28	7/36	.012″	.125″	3302	$ 132.23	$ 14.15
3	B-28	7/36	.012″	.130″	3303	176.54	18.69
4	B-28	7/36	.012″	.140″	3304	215.49	22.58
6	B-28	7/36	.015″	.170″	3306	275.43	28.53
8	B-28	7/36	.015″	.175″	3308	313.64	32.34
10	B-28	7/36	.018″	.210″	3310	398.30	40.86
12	B-28	7/36	.018″	.215″	3312	450.81	47.04
15	B-28	7/36	.020″	.230″	3315	547.80	56.57
20	B-28	7/36	.022″	.260″	3320	683.84	70.29

18 GAUGE HEAVY DUTY SHIELDED CONTROL CABLE 1000 VOLT, TYPE C CONDUCTOR

Nominal Wall Thickness: .016″.

5	C-18	19/30	.025″	.300″	3405	$ 555.51	$ 57.30
8	C-18	19/30	.030″	.350″	3408	747.00	86.28
10	C-18	19/30	.035″	.405″	3410	993.24	101.30
12	C-18	19/30	.035″	.430″	3412	1191.75	137.66
15	C-18	19/30	.040″	.470″	3415	1356.15	137.60
20	C-18	19/30	.045″	.530″	3420	1833.68	185.30
30	C-18	19/30	.055″	.650″	3430	2712.33	277.01

16 GAUGE SHIELDED CONTROL CABLE 1000 VOLT, TYPE C CONNECTOR

Nominal Wall Thickness: .016″.

4	16	19/29	.031″	.326″	3444	$ 813.00	$ 82.05
5	16	19/29	.032″	.346″	3445	903.75	91.28
6	16	19/29	.034″	.369″	3446	969.50	97.85
8	16	19/29	.041″	.424″	3448	1216.00	122.51
10	16	19/29	.044″	.470″	3450	1432.50	144.15
12	16	19/29	.048″	.511″	3452	1839.00	184.95

COLOR CODE OF CONDUCTORS (CONFORMS TO MIL-C-915)

No.	Color	No.	Color	No.	Color
1	Black	11	Blue/Black	21	Orange/Green
2	White	12	Black/White	22	Black/White/Red
3	Red	13	Red/White	23	White/Black/Red
4	Green	14	Green/White	24	Red/Black/White
5	Orange	15	Blue/White	25	Green/Black/White
6	Blue	16	Black/Red	26	Orange/Black/White
7	White/Black	17	White/Red	27	Blue/Black/White
8	Red/Black	18	Orange/Red	28	Black/Red/Green
9	Green/Black	19	Blue/Red	29	White/Red/Green
10	Orange/Black	20	Red/Green	30	Red/Black/Green

COMPUTER CABLE

COAXIAL—UL STYLE 2386 (FIG. D)

Used for interconnection of modules and data transmission. Individual miniature coax cables, grouped together under common overall shield and jacket. Individual cables of #26 AWG solid silver-plated copper conductor, air-spaced, flame-retardant polyethylene dielectric spiral-wrapped 29 AWG tinned copper drain wire, braided tinned copper shield, overall .016″ PVC jacket. Nominal dia., .155″. Completed cable constructed of miniature coaxial cables cabled with PVC fillers, clear Mylar wrap, overall gray PVC jacket. Shielded cables have braided tinned copper shields with spirally wrapped #26 AWG solid copper alloy drain wires. Nominal impedance, 95 ohms. Attenuation at 400 MHz max., 10.2 dB/100 ft. Velocity propogation, 83%. Voltage, 750 V, max.

Type	No. of Indiv. Coax Cables	Jacket Thickness	Nom. O.D.	Alpha No.	Net per Spool*†	
					1000′	100′
Unshielded	20	.085″	.978″	2453	$3000.00	$307.50
Unshielded	24	.085″	1.075″	2454	3900.00	397.50
Shielded	24	.080″	1.110″	2456	4200.00	427.50

UL STYLE 2343—18 GAUGE (FIG. C)

Used for interconnection of computer modules. Each conductor stranded tinned copper. Color coded, 80° C PVC insulation. Cabled with PVC fillers, .001″ clear Mylar wrap. Braided tinned copper shield, 85% coverage. Gray PVC jacket. Nom. wall thickness, .016″.

Conductor		Jacket Thickness	Nom. O.D.	Alpha No.	Net/Spool*†	
No.	Strand				1000′	100′
6	16/30	.062″	.394″	2458	$360.00	$36.75

*Also available in 500 ft. spools. Prices on request. †Available also cut to customer's length requirement. Minimum order 25 ft. per item. All orders non-cancellable.

alpha ALPHA WIRE COMPUTER AND CONTROL CABLE

UNSHIELDED AND SHIELDED COMPUTER AND CONTROL CABLES

UNSHIELDED COMPUTER AND CONTROL CABLE UL STYLE 1061 CONDUCTORS, 600 VOLTS

For control and signal application in computers, industrial equipment and instrumentation. Stranded tinned copper conductor, .010″ color-coded PVC insulation. Cabled singly or in pairs. Gray vinyl jacket overall. Cable rated at +80° C, 300 volts. Individual conductors rated +105° C, 600 volts.

UNSHIELDED MULTI-CONDUCTOR CABLES

24 GAUGE

Nominal O.D. conductor, .045″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Conductors	Nom. O.D.	Net per Spool	
			1000′	100′
5200	5	.218	$ 259.10	$ 34.20
5201	7	.251	280.11	36.98
5202	12	.301	386.90	51.08
5203	15	.328	526.05	69.44
5204	19	.341	570.15	75.26
5205	27	.394	762.30	100.62
5206	37	.418	1050.53	138.68
5207	48	.470	1320.65	174.33
5208	60	.508	1576.58	208.11

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5210	5	.202	$ 280.35	$ 37.00
5211	7	.272	300.83	39.71
5212	12	.332	423.68	55.92
5213	15	.352	568.58	75.05
5214	19	.372	625.28	82.53
5215	27	.432	833.18	109.98
5216	37	.481	1149.75	151.77
5217	48	.533	1436.40	189.60
5218	60	.574	1782.90	235.23

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5220	5	.277	$ 318.15	$ 42.00
5221	7	.293	355.95	46.98
5222	12	.363	507.15	66.95
5223	15	.393	681.98	90.02
5224	19	.412	773.33	102.08
5225	27	.494	1028.48	135.80
5226	37	.521	1415.93	186.90
5227	48	.584	1790.78	236.39
5228	60	.644	2176.65	287.33

UNSHIELDED PAIRED CABLES

24 GAUGE

Nominal O.D. conductor, .044″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Conductors	Nom. O.D.	Net per Spool	
			1000′	100′
5230	5	.332	$ 373.28	$ 49.28
5231	7	.352	428.40	56.55
5232	12	.438	617.40	81.50
5233	15	.488	789.08	104.16
5234	19	.507	896.18	118.29
5235	27	.595	1215.90	160.50
5236	37	.665	1630.13	215.18
5237	48	.747	2034.90	268.61
5238	60	.819	2598.75	343.04

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

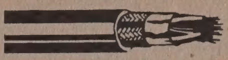
5240	5	.368	$ 409.50	$ 54.06
5241	7	.393	474.08	62.58
5242	12	.475	696.15	91.89
5243	15	.551	915.08	120.80
5244	19	.563	1028.48	135.77
5245	27	.604	1363.95	180.05
5246	37	.755	1831.73	241.79
5247	48	.856	2367.23	312.48
5248	60	.984	2929.50	386.70

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5250	5	.398	$ 488.25	$ 64.46
5251	7	.445	587.48	77.55
5252	12	.545	880.43	116.22
5253	15	.607	1067.85	140.96
5254	19	.634	1335.60	176.30
5255	27	.749	1786.05	235.76
5256	37	.826	2453.85	323.91
5257	48	.955	3091.73	408.11
5258	60	1.045	3822.53	504.57

SHIELDED COMPUTER AND CONTROL CABLE UL STYLE 1061 CONDUCTORS, 600 VOLTS, 80° C



Used for control and signal application in computers, industrial equipment and instrumentation. Stranded tinned copper conductor, .010″ color-coded PVC insulation. Braided tinned copper shield. Cabled singly or in pairs; gray vinyl jacket overall. Cable rated at 80° C, 300 volts. Individual conductors rated 105° C, 600 volts.

SHIELDED MULTI-CONDUCTOR CABLES

24 GAUGE

Nominal O.D. conductor, .045″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Conductors	Nom. O.D.	Net per Spool	
			1000′	100′
5300	5	.247	$ 311.85	$ 41.16
5301	7	.277	343.35	45.32
5302	12	.328	464.64	61.34
5303	15	.353	611.10	80.67
5304	19	.367	663.08	87.53
5305	27	.418	872.55	115.17
5306	37	.447	1185.98	156.56
5307	48	.497	1485.23	196.05
5308	60	.538	1757.70	232.02

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5310	5	.287	$ 343.35	$ 45.32
5311	7	.298	371.70	49.07
5312	12	.357	510.30	67.37
5313	15	.382	664.65	87.74
5314	19	.397	727.65	96.05
5315	27	.458	968.63	127.86
5316	37	.513	1316.70	173.81
5317	48	.563	1626.98	214.76
5318	60	.603	1965.60	259.46

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5320	5	.302	$ 389.03	$ 51.35
5321	7	.318	433.13	57.18
5322	12	.387	604.80	79.83
5323	15	.417	789.08	104.16
5324	19	.437	878.85	116.00
5325	27	.518	1192.28	157.38
5326	37	.552	1600.20	211.32
5327	48	.612	2008.13	318.92
5328	60	.673	2416.05	318.92

SHIELDED PAIRED CABLES

24 GAUGE

Nominal O.D. conductor, .044″. Nom. jkt. thickness, .063″. Conductor stranding, 7/32.

Alpha No.	No. of Conductors	Nom. O.D.	Net per Spool	
			1000′	100′
5330	5	.357	$ 459.90	$ 60.71
5331	7	.378	526.05	69.44
5332	12	.378	768.60	101.46
5333	15	.513	956.03	126.20
5334	19	.533	1077.30	142.20
5335	27	.622	1433.25	189.20
5336	37	.693	1875.83	247.61
5337	48	.778	2316.83	305.82
5338	60	.847	2910.60	384.20

22 GAUGE

Nominal O.D. conductor, .050″. Nom. jkt. thickness, .063″. Conductor stranding, 7/30.

5340	5	.392	$ 508.73	$ 67.16
5341	7	.418	582.75	76.92
5342	12	.497	869.40	114.77
5343	15	.578	1110.37	139.59
5344	19	.584	1236.38	163.20
5345	27	.672	1609.65	212.48
5346	37	.784	2119.95	279.84
5347	48	.883	2694.83	355.71
5348	60	.960	3324.93	438.87

20 GAUGE

Nominal O.D. conductor, .058″. Nom. jkt. thickness, .063″. Conductor stranding, 19/32.

5350	5	.422	$ 596.93	$ 78.80
5351	7	.468	729.23	96.26
5352	12	.572	1077.30	142.20
5353	15	.633	1362.38	179.84
5354	19	.665	1571.85	207.48
5355	27	.778	2067.98	272.97
5356	37	.854	2776.73	366.53
5357	48	.983	3494.93	461.33
5358	60	1.074	4265.10	563.00

COLOR CODE OF CONDUCTORS (Colors Repeated)

No.	Color	No.	Color	No.	Color	No.	Color	No.	Color	No.	Color	No.	Color
1	Black	4	Orange	7	Blue	10	White	13	Wht/Red	16	Wht/Grn	19	Wht/Gray
2	Brown	5	Yellow	8	Violet	11	Wht/Blk	14	Wht/Org	17	Wht/Blue	20	Wht/Blk/Brn
3	Red	6	Green	9	Gray	12	Wht/Brn	15	Wht/Yel	18	Wht/Violet	21	Wht/Blk/Red

alpha ALPHA WIRE Control Cable

20/10 PVC NYLON UNSHIELDED STATION CONTROL CABLE

Heavy-duty, multi-conductor cable with plastic jacket. Used for remote control of automatic electrical equipment, recording and relaying devices, telemetering, temperature voltage pressure and motor control, etc. Each conductor stranded bare copper, .020″ polyethylene insulation on 14 and 12 gauge cable; .015″ on 16 gauge cable. .010″ polyvinylchloride jacket over each conductor. Moisture resistant tape, black polyvinylchloride jacket overall. Rated 600 volts. Cable cut to specific lengths, minimum 25 ft. All orders are non-cancellable. **Color Code:** Conforms to IPCEA standards either with full color code or surface printed with color name and number.

16 GAUGE, 26/30 BARE COPPER

Alpha No.	No. of Cond.	Jkt. Thick-ness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
4102	2	.045″	.320″	$0.42	$0.27	$0.21	$0.20
4103	3	.045″	.340″	.71	.44	.35	.32
4105	5	.045″	.400″	1.14	.72	.57	.51
4106	6	.045″	.435″	1.31	.81	.66	.59
4107	7	.045″	.435″	1.47	.92	.74	.66
4108	8	.045″	.480″	1.64	1.02	.83	.74
4110	10	.060″	.580″	2.06	1.28	1.02	.93
4112	12	.060″	.590″	2.49	1.56	1.25	1.13
4114	14	.060″	.605″	2.64	1.65	1.32	1.19
4116	16	.060″	.665″	3.21	2.00	1.61	1.44
4119	19	.060″	.690″	3.77	2.36	1.88	1.70
4121	21	.060″	.735″	3.98	2.48	1.95	1.86
4122	22	.060″	.760″	4.35	2.72	2.18	1.95
4124	24	.060″	.805″	4.56	2.85	2.28	2.06
4126	26	.060″	.805″	4.92	2.97	2.31	2.21
4130	30	.080″	.900″	5.51	3.44	2.76	2.46
4137	37	.080″	.965″	7.07	4.41	3.54	3.18
4140	40	.080″	1.010″	7.92	4.95	3.96	3.57
4150	50	.080″	1.100″	9.48	5.91	4.74	4.26
4160	60	.080″	1.200″	11.64	7.26	5.82	5.24

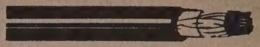
14 GAUGE, 19/27 BARE COPPER

Alpha No.	No. of Cond.	Jkt. Thick-ness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
4202	2 Rd.	.045″	.380″	$0.48	$0.30	$0.24	$0.21
4203	3 Rd.	.045″	.390″	.78	.48	.39	.35
4204	4	.045″	.425″	.95	.59	.47	.42
4205	5	.045″	.465″	1.26	.80	.63	.57
4206	6	.045″	.520″	1.46	.90	.72	.66
4207	7	.045″	.520″	1.64	1.02	.81	.74
4208	8	.060″	.580″	1.83	1.14	.92	.83
4209	9	.060″	.635″	2.10	1.31	1.05	.95
4210	10	.060″	.690″	2.28	1.43	1.14	1.04
4212	12	.060″	.705″	2.78	1.74	1.38	1.25
4214	14	.060″	.750″	2.94	1.83	1.47	1.32
4216	16	.060″	.785″	3.57	2.22	1.79	1.61
4219	19	.060″	.835″	4.19	2.61	2.09	1.88
4224	25	.080″	1.010″	5.09	2.88	2.54	2.28
4227	27	.080″	1.200″	5.70	3.57	2.85	2.57
4230	30	.080″	1.070″	6.12	3.83	3.06	2.76
4234	34	.080″	1.140″	7.23	4.52	3.62	3.26
4237	37	.080″	1.160″	7.86	4.91	3.93	3.54
4240	40	.080″	1.175″	8.79	5.49	4.40	3.96

12 GAUGE, 19/25 BARE COPPER

Alpha No.	No. of Cond.	Jkt. Thick-ness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
4302	2 Twin	.045″	.415″	$0.60	$0.38	$0.30	$0.27
4303	3 Rd.	.045″	.445″	.92	.57	.47	.42
4304	4	.045″	.485″	1.11	.69	.56	.50
4305	5	.045″	.530″	1.46	.90	.72	.66
4306	6	.045″	.610″	1.71	1.07	.86	.78
4307	7	.060″	.610″	1.85	1.16	.93	.83
4308	8	.060″	.660″	2.12	1.32	1.05	.95
4309	9	.060″	.700″	2.27	1.41	1.14	1.02
4310	10	.060″	.770″	2.82	1.77	1.41	1.28
4312	12	.060″	.790″	3.14	1.97	1.58	1.41
4314	14	.060″	.830″	3.36	2.10	1.68	1.52
4315	15	.080″	.915″	3.74	2.33	1.86	1.68
4316	16	.080″	.915″	4.10	2.55	2.04	1.85
4318	18	.080″	.970″	4.50	2.81	2.25	2.03
4319	19	.080″	.970″	4.80	3.00	2.40	2.16
4320	20	.080″	1.020″	5.01	3.14	2.51	2.28
4322	22	.080″	1.050″	5.55	3.47	2.78	2.49
4325	25	.080″	1.130″	6.03	3.77	3.02	2.72
4327	27	.080″	1.050″	6.48	4.05	3.24	2.91
4330	30	.080″	1.200″	7.04	4.40	3.53	3.17
4334	34	.080″	1.270″	8.25	5.16	4.13	3.72
4337	37	.080″	1.285″	8.97	5.61	4.49	4.04

15/5 PVC NYLON CONTROL CABLE 600 VOLTS, 90° C



Widely used for all types of control and signal circuits. Bare stranded copper conductor, .015″ PVC insulation. .005″ nylon jacket over each conductor. Has moisture resistant tape, black PVC jacket overall. Suitable for underground burial. Conductors color coded per IPCEA standards. See color code, below. Meets UL, ASTM, IPCEA S-61-402. Available cut to customer's length requirement. Minimum order 25 ft. per item. Orders are non-cancellable.

AWG NO. 16 (26 X 30)

Alpha No.	No. of Cond.	Jkt. Thick-ness	Approx. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
7500	2 (Flat)	.045″	.295″*	$0.54	$0.35	$0.27	$0.24
7501	2	.045″	.310″	.69	.42	.35	.32
7502	3	.045″	.310″	.77	.48	.39	.35
7503	4	.045″	.335″	.93	.59	.47	.42
7504	5	.045″	.360″	1.26	.80	.63	.57
7505	6	.045″	.395″	1.44	.90	.72	.65
7506	7	.045″	.395″	1.62	1.01	.81	.72
7507	8	.045″	.420″	1.80	1.13	.90	.81
7508	9	.045″	.455″	2.07	1.29	1.04	.93
7509	10	.045″	.490″	2.25	1.41	1.13	1.02
7511	12	.045″	.505″	2.75	1.71	1.37	1.23
7513	14	.060″	.560″	2.91	1.82	1.46	1.31
7514	15	.060″	.590″	3.21	2.01	1.58	1.44
7515	16	.060″	.590″	3.53	2.21	1.76	1.59
7517	18	.060″	.620″	3.90	2.43	1.95	1.76
7518	19	.060″	.620″	4.14	2.58	2.07	1.86
7519	20	.060″	.650″	4.35	2.72	2.18	1.95
7520	21	.060″	.650″	4.58	2.85	2.28	2.06
7521	22	.060″	.680″	4.79	2.99	2.40	2.15
7522	23	.060″	.680″	4.91	3.06	2.46	2.21
7523	24	.060″	.720″	5.01	3.14	2.52	2.27

*Approx. O.D., .200″ x .295″.

AWG NO. 14 (19 X 27)

Alpha No.	No. of Cond.	Jkt. Thick-ness	Approx. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
7525	2 (Flat)	.045″	.325″*	$0.65	$0.42	$0.33	$0.30
7526	2	.045″	.325″	.72	.45	.36	.33
7527	3	.045″	.345″	.86	.54	.44	.39
7528	4	.045″	.375″	1.04	.65	.53	.47
7529	5	.045″	.405″	1.40	.87	.71	.63
7530	6	.045″	.440″	1.59	.99	.80	.72
7531	7	.045″	.440″	1.80	1.13	.90	.81
7532	8	.045″	.475″	2.01	1.26	1.01	.90
7533	9	.045″	.510″	2.31	1.44	1.16	1.04
7534	10	.060″	.585″	2.52	1.58	1.26	1.13
7536	12	.060″	.605″	3.05	1.91	1.53	1.37
7538	14	.060″	.630″	3.24	2.03	1.62	1.46
7539	15	.060″	.665″	3.59	2.22	1.79	1.61
7540	16	.060″	.665″	3.92	2.45	1.97	1.76
7542	18	.060″	.700″	4.34	2.70	2.16	1.95
7543	19	.060″	.700″	4.61	2.88	2.30	2.07
7544	20	.060″	.735″	4.83	3.02	2.43	2.18
7545	21	.060″	.735″	5.07	3.17	2.55	2.28
7546	22	.060″	.770″	5.33	3.33	2.66	2.40
7547	23	.060″	.770″	5.46	3.39	2.73	2.46
7548	24	.060″	.815″	5.60	3.47	2.79	2.52

*Approx. O.D., .240″ x .325″.

AWG NO. 12 (19 X 25)

Alpha No.	No. of Cond.	Jkt. Thick-ness	Approx. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
7550	2 (Flat)	.045″	.365″*	$0.81	$0.51	$0.41	$0.36
7551	2	.045″	.365″	.90	.56	.45	.41
7552	3	.045″	.385″	1.01	.63	.51	.45
7553	4	.045″	.420″	1.22	.77	.62	.56
7554	5	.045″	.460″	1.59	.99	.80	.72
7555	6	.045″	.500″	1.89	1.17	.95	.86
7556	7	.045″	.500″	2.04	1.28	1.02	.92
7557	8	.060″	.570″	2.33	1.46	1.16	1.05
7558	9	.060″	.615″	2.49	1.56	1.25	1.13
7559	10	.060″	.665″	3.11	1.94	1.56	1.41
7561	12	.060″	.685″	3.45	2.16	1.73	1.56
7563	14	.060″	.720″	3.71	2.31	1.85	1.67
7564	15	.060″	.760″	4.11	2.57	2.06	1.85
7565	16	.060″	.760″	4.50	2.81	2.25	2.03
7567	18	.060″	.800″	4.95	3.00	2.48	2.22
7568	19	.060″	.800″	5.28	3.30	2.64	2.39
7569	20	.080″	.880″	5.67	3.45	2.76	2.51
7570	21	.080″	.880″	5.81	3.63	2.90	2.63
7571	22	.080″	.925″	6.09	3.81	3.05	2.75
7572	23	.080″	.925″	6.26	3.90	3.12	2.82
7573	24	.080″	.975″	6.42	4.01	3.21	2.88

*Approx. O.D., .260″ x .365″.

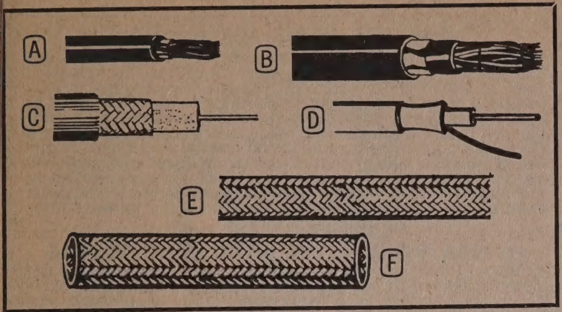
SERIES AWG No. 10 (19 x 23) also available. Prices on request.

IPCEA COLOR CODE SHOWING CONDUCTOR NO. AND COLOR

No.	Color	No.	Color	No.	Color	No.	Color	No.	Color	No.	Color
1	Black	18	Orange/Red	35	Wht/Red/Org	52	Red/Org/Blk	69	Wht/Grn/Blue	86	Blue/Green
2	White	19	Blue/Red	36	Org/Wht/Blue	53	Grn/Red/Blue	70	Red/Grn/Blue	87	Black/Orange
3	Red	20	Red/Green	37	Wht/Red/Blue	54	Org/Blk/Blue	71	Grn/Wht/Red	88	White/Orange
4	Green	21	Orange/Green	38	Blk/Wht/Grn	55	Blue/Blk/Org	72	Org/Red/Blk	89	Red/Orange
5	Orange	22	Blk/Wht/Red	39	Wht/Blk/Grn	56	Blk/Org/Grn	73	Blue/Red/Blk	90	Green/Orange
6	Blue	23	Wht/Blk/Red	40	Red/Wht/Grn	57	Wht/Org/Grn	74	Blk/Org/Blue	91	Blue/Orange
7	White/Black	24	Red/Blk/Wht	41	Grn/Wht/Blue	58	Red/Org/Grn	75	Red/Org/Blue	92	Black/Blue
8	Red/Black	25	Grn/Blk/Wht	42	Org/Red/Grn	59	Grn/Blk/Blue	76	Grn/Red/Blk	93	White/Blue
9	Green/Black	26	Org/Blk/Wht	43	Blue/Red/Grn	60	Org/Grn/Blue	77	Org/Wht/Grn	94	Red/Blue
10	Orange/Black	27	Blue/Blk/Wht	44	Blk/Wht/Blue	61	Blue/Grn/Org	78	Blue/Wht/Grn	95	Green/Blue
11	Blue/Black	28	Blk/Red/Grn	45	Wht/Blk/Blue	62	Blk/Red/Blue	79	Red/Wht/Org	96	Orange/Blue
12	Black/White	29	Wht/Red/Grn	46	Red/Wht/Blue	63	Wht/Org/Blue	80	Grn/Wht/Org	97	Yellow
13	Red/White	30	Red/Blk/Grn	47	Grn/Org/Red	64	Red/Blk/Blue	81	Blue/Blk/Grn	98	Yellow/Black
14	Green/White	31	Grn/Blk/Org	48	Org/Red/Blue	65	Grn/Org/Blue	82	Orange/White	99	Yellow/White
15	Blue/White	32	Org/Blk/Grn	49	Blue/Red/Org	66	Org/Wht/Red	83	Green/Red	100	Yellow/Red
16	Black/Red	33	Blue/Wht/Org	50	Blk/Org/Red	67	Blue/Wht/Red	84	Black/Green		
17	White/Red	34	Blk/Wht/Org	51	Wht/Blk/Org	68	Blk/Grn/Blue	85	White/Green		

alpha ALPHA WIRE

Control Cable, Braid



TELEMETERING AND SUPERVISORY SHIELDED CONTROL CABLE (FIG. A)

Used for remote control of rocket recording data and test-firing control, transmission of signals which telemeter temperature, voltage pressure, etc., control of multiple circuits, measuring devices, quality control equipment, radar antenna. For aerial, duct and conduit installations. Double jacketed types have higher dielectric strength, suited for direct burial installations. Each conductor bare solid copper. High molecular weight polyethylene insulation. Color coded, twisted into pairs, cabled with a non-hygroscopic binder tape .008″ aluminum shield, black polyethylene jacket overall. Voltage rating, 300 V. Double jacketed types have additional inner black polyethylene jacket over binder, and .005″ copper shield. **Standard Put-up:** Cut to specification, minimum, 25 ft. Orders non-cancellable. **Color Code:** Fully color coded in accordance with REA standards.

22 AWG SOLID

Nominal insulation thickness, .015″.

Alpha No.	No. of Pairs	Nom. Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
3706	6	.060″	.51″	$0.96	$0.66	$0.59	$0.53
3712	12	.060″	.62″	1.32	.95	.83	.75
3718	18	.060″	.71″	1.56	1.19	1.04	.93
3725	25	.060″	.79″	2.03	1.43	1.25	1.17
3750	50	.070″	1.05″	3.12	2.31	2.10	1.88

19 AWG SOLID

Nominal insulation thickness, .015″.

Alpha No.	No. of Pairs	Nom. Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
3806	6	.060″	.56″	$1.19	$0.84	$0.74	$0.66
3812	12	.060″	.70″	1.65	1.20	1.07	.96
3818	18	.060″	.80″	2.09	1.49	1.35	1.23
3825	25	.060″	.91″	2.85	2.03	1.82	1.65
3850	50	.070″	1.20″	4.77	3.45	3.14	2.85

16 AWG SOLID

Nominal insulation thickness, .020″.

Alpha No.	No. of Pairs	Nom. Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
3863	3	.060″	.56″	$ 1.79	$1.25	$1.16	$1.05
3864	6	.060″	.69″	2.37	1.58	1.43	1.29
3865	12	.060″	.88″	3.15	2.25	2.03	1.83
3866	18	.070″	1.04″	4.28	3.03	2.79	2.52
3867	25	.070″	1.18″	5.55	3.96	3.60	3.29
3868	50	.080″	1.62″	10.95	7.76	7.05	6.45

DOUBLE JACKET—HEAVY DUTY (FIG. B)

22 AWG SOLID

Nominal insulation thickness, .015″. Nominal inner jacket, .047″.

Alpha No.	No. of Pairs	Outer Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
3906	6	.060″	.56″	$1.26	$0.92	$0.83	$0.75
3912	12	.060″	.67″	1.73	1.23	1.13	1.02
3918	18	.060″	.76″	2.10	1.53	1.38	1.23
3925	25	.060″	.84″	2.40	1.73	1.56	1.41
3950	50	.070″	1.10″	3.90	2.76	2.51	2.28

19 AWG SOLID

Nominal insulation thickness, .015″. Nominal inner jacket, .047″.

Alpha No.	No. of Pairs	Outer Jacket Thickness	Nom. O.D.	Net per Foot 25-99	100-499	500-999	1000 Up
4006	6	.060″	.61″	$1.65	$1.17	$1.05	$0.90
4012	12	.060″	.75″	2.10	1.53	1.38	1.23
4018	18	.060″	.85″	2.40	1.73	1.56	1.41
4025	25	.080″	.96″	3.20	2.30	2.09	1.91
4050	50	.070″	1.25″	5.70	3.96	3.60	3.27

MICRO-MINIATURE COAXIAL CABLE—50, 75, 100 OHM IMPEDANCES (FIG. D)

For computer instrumentation and ultra-compact wiring. Extremely small and flexible coax has high cut-through resistance. Provides uniform characteristic impedance, low losses and low propagation delays. Crosstalk kept to minimum. Center conductor, solid silver-plated copper with 40 micro-inch minimum plating. Aluminized Mylar® shield, 30 AWG. Solid silver-plated copper drain wire, parallel to center conductor. Flame-retardant, blue-colored jacket overall.

Alpha No.	Impedance, Ohms	Conductor AWG	Dielectric Material	Nom. Cable O.D.	Net per 100 Ft.
9500	100	32	Polypropylene*	.080″	$28.13
9475	75	30	Polypropylene*	.065″	28.13
9450	50	32	FEP Teflon®	.40″	28.13

*Cellular polypropylene. ®Reg. DuPont trademarks.

BRAIDING

TINNED COPPER FLAT BRAID (FIG. E) TO MIL SPEC QQ-W-343/S, ASTM-B-33

For shielding insulated wire and cable, bonding and ground straps. For applications requiring extreme flexibility (pigtails, component leads, connecting moving parts, etc). Very fine, soft annealed tinned copper wires, braided and rolled flat. Strand size, 36, except Nos. 1239 thru 1242/4 which are 30 AWG. Also available in spool of 500′ except: 1240-1242/4; prices on request.

Width In.	Alpha No.	Net, Spool 1000′	100′	Width In.	Alpha No.	Net per Spool 1000′	100′
.025	1221	$ 47.37	$ 5.70	⅝	1233	$247.58	$ 22.73
1/32	1222	50.69	6.12	¾	1234	569.63	58.95
3/64	1223	54.09	6.47	1	1235	611.07	63.09
3/32	1224	63.51	7.20	1⅜	1239	695.49	71.52
⅛	1229	70.95	8.12	1½	1240	....	100.22
3/16	1230	78.98	8.85	1¾	1241	....	200.43
¼	1231	110.22	11.99	2	1242	....	251.55
⅜	1232	181.76	19.19	3	1242/4	....	485.30
½	1233/2	234.35	24.32				

TINNED COPPER OVAL BRAID (FIG. F)

Woven, tinned copper braid manufactured to a specific inside diameter but, due to its extreme flexibility, cannot maintain its completely round shape and becomes oval. Used as an electrostatic shield to cover a conductor, a series of conductors, cable etc. Specifically constructed and left in its tubular or oval form so that it can easily be slipped over wire, cable, or other components for which shielding is required. Each strand 34 AWG.

Nom. I.D.	Nominal Circ., Mil	Alpha No.	Net per Spool 1000′	500′	100′
1/16″	1192	2132	$ 52.26	$ 25.47	$ 5.70
1 1/64″	4770	2138	131.24	66.66	14.14
3/16″	5724	2140	....	73.80	15.72
¼″	6678	2142	....	88.49	18.69
⅜″	7632	2144	....	101.21	21.24
½″	13356	2146	....	....	40.43
⅝″	14264	2148	....	....	43.83
1 1/16″	19080	2150	....	....	54.09
2 5/32″	20988	2152	....	....	59.13

TINNED COPPER TUBULAR BRAID (FIG. F) TO MIL SPEC QQ-B-575

Maximum shielding against electrostatic interference for wires, cables, etc. Woven, tinned copper braid fully round per MIL Spec QQ-B-575. Each strand is soft, drawn, tinned copper wire, 36 AWG except as noted. Self-supporting to maintain the round shape. Shielding coverage 95%.

Nom. I.D.	Alpha No.	Net, Spool 250′	100′	Nom. I.D.	Alpha No.	Net, Spool 100′	50′
1/32″	2160	$ 9.53	$ 4.41	¼″	2171	$ 36.23	......
1/16″	2162	19.70	9.30	9/32″	2171/1†	37.80	......
5/64″	2163	23.31	10.79	⅜″	2172	37.24	......
7/64″	2164	31.35	14.49	7/16″	2173†	61.59	......
⅛″	2166	33.87	15.12	½″	2174	51.20	......
5/32″	2167	60.65	24.57	9/16″	2175†	94.50	......
11/64″	2168	43.64	18.90	21/32″	2175/1†	144.90	......
13/64″	2170*	....	26.78	25/32″	2176	69.30	......

*Braid 34 AWG. †Braid 30 AWG.

EXTRA LARGE TINNED COPPER TUBULAR BRAID (FIG. E)

Tubular braids manufactured to standards of QQ-B-575 although these sizes are not listed in the specification. Each strand 30 AWG.

Nom. I.D.	Alpha No.	Net, Spool 100′	50′	Nom. I.D.	Alpha No.	Net, Spool 100′	50′
⅞″	2177	$ 99.27	$50.69	1¼″	2180	$131.76	$66.98
1″	2178	112.02	57.00	1⅜″	2181	152.99	77.54
1⅛″	2179	117.39	60.74	1½″	2182	164.51	83.16

CATV, MATV, CCTV COAXIAL CABLE 6/U, 8/U, 11/U, 59/U TYPES (FIG. C)

Designed specifically for commercial and CATV, MATV and CCTV applications. Alpha Nos. 9830 and 9840 available in 500′ and 100′ spools, prices on request.

Alpha No.	Type	Size*		Dielectric Material	Shield*	Jkt. Material	Nom. O.D.	Nom. Impedance, Ohms	Channel 2	5	13	14	33	Stock Colors	Net per Spool 1000′
9843	6/U	18 Solid	BC	Foam PE	Foil	PVC	.242″	75	1.5	1.9	3.1	5.0	7.0	Blk., Wht., Gray	$ 44.85
9846	8/U	13 (7 x 21)	BC	Foam PE	BBC	PVC	.407″	50	1.2	1.7	2.5	3.9	5.5	Black Only	154.50
9847	11/U	14 Solid	BC	Foam PE	BBC	PE	.405″	75	1.0	1.3	2.1	3.6	4.8	Black Only	141.90
9848	58/U	20 Solid	BC	Foam PE	BTC	PVC	.195″	50	4.2	4.7	7.0	10.4	15.3	Black Only	54.60
9830	59/U	22 Solid	BCW	Solid PE	BBC	PVC	.242″	75	2.0	2.7	4.5	6.8	10.0	Black Only	47.03
9840	59/U	22 Solid	BCW	Foam PE	BBC	PVC	.242″	75	2.2	2.8	4.5	6.0	9.8	Black Only	48.68
9844	59/U	22 Solid	BCW	Foam PE	Foil	PVC	.218″	80	1.9	2.6	3.8	6.5	9.1	Blk., Wht., Gray	37.65

***BC**—Bare Copper. **BCW**—Bare Copper Weld. **Foil**—Aluminum/Polyester Tape with 4-28 AWC Tinned Copper Weld drain wires. **BBC**—Braided Bare Copper. **BTC**—Braided Tinned Copper. **Foam PE**—Unicellular Foamed Polyethylene.

alpha ALPHA WIRE FIT® Shrinkable Tubing

FIT-105 POLYVINYLCHLORIDE TUBING

Extra-flexible tubing, ideal for cable jackets. Conforms to MIL-I-23053/2. High flexibility, strength and 50% shrinkage make it suitable for insulating components and cables with wide shape and size variations. **Shrinkage Temp.:** Approx. 347° F (175° C). **Operating Temp.:** 105° C, continuous. **Tensile Strength:** 1800 psi, min. **Elongation:** 200% ultimate min. **Low Temp. Flexibility:** −20° F. **Dielectric Strength:** 750 V/mil, minimum. **Longitudinal Shrinkage:** 10%. **Environment Resistance:** Inert to fungus; excellent resistance to fuel, oil, hydraulic fluid, solvents, acids and alkalis. Self-extinguishing to flame; non-corrosive. Poor resistance to soldering irons. **Standard Put-Up:** Continuous lengths and 6″ lengths. **Color:** Black.

Alpha No. FIT-	Size, Inches			Net Price per Pkg. of		
	Min. I.D.*	Recov. I.D.†	Wall Thk.	25′	100′	200′
105-3/64″	.046	.023	.020	$ 2.84	$11.34	$56.70‡
105-1/16″	.062	.031	.020	3.05	12.08	60.38‡
105-3/32″	.093	.046	.020	3.47	13.81	27.62
105-⅛″	.125	.062	.025	3.68	14.60	29.19
105-3/16″	.187	.093	.025	4.46	17.85	35.70
105-¼″	.250	.125	.025	5.67	22.58	45.15
105-⅜″	.375	.187	.030	6.25	24.89	49.77
105-½″	.500	.250	.030	7.09	28.30	....
105-¾″	.775	.375	.035	9.45	37.85	....
105-1″	1.000	.500	.040	13.65	54.50	....
105-1½″	1.500	.750	.045	23.52	93.92	....
105-2″	2.000	1.000	.050	34.65§	69.25#	....

*Before shrinking. †After shrinking. ‡Pkg. of 500′. §Pkg. of 10 available at **$13.86.** #Pkg. of 50.

PACKAGED ASSORTMENTS IN 6″ LENGTHS

Alpha No.	Size Range	No. Lengths/Box	Net/Box
FIT-105-MS1	3/64″–¼″ (6 sizes)	10 per size (60 total)	$4.84
FIT-105-MS2	⅜″–1″ (4 sizes)	10 per size (40 total)	9.67
FIT-105-MS3	1½″ and 2″ only	7 per size (14 total)	8.45

FIT-221 IRRADIATED POLYOLEFIN TUBING

Simple-to-use, all-purpose extruded tubing gives tight mechanical bond with thermal stability. Controlled shrinkage to correct predetermined size occurs in 7 seconds at 275° to 300° F, beginning at a slower rate at 235° F. Shrinks 50% (2:1 ratio) with only 5% maximum longitudinal shrinkage. Will not cold-flow or melt, but retains form stability throughout its temperature range. Clear tubing remains transparent over its full operating range, −67° F to 275° F. Though high temperature, material is flammable; will not burn, however, when shrunk over flame-resistant on non-flammable components. **Operating Temperature:** −55° C to +135° C continuous. **Tensile Strength:** 2000 psi min. **Elongation:** 200% min., ultimate. **Dielectric Strength:** 500 volts/mil, min. **Dielectric Constant:** 2.9 max. **Environment Resistance:** Will not support fungus. Non-corrosive. Max. water absorption, 0.6%. Excellent resistance to fuel, oil, acids, alkalis and solvents. (Tested to Bell Labs tests.) **Colors:** Specify clear, black, white, red, yellow or blue when ordering.

Alpha No. FIT-	Size, Inches			4 Ft. Lengths		6″ Lengths	
	Min. I.D.*	Recov. I.D.†	Wall Thk.	Std. Pkg.	Pkg. Net	Std. Pkg.	Pkg. Net
221-3/64″	.046	.023	.016	100′	$18.50	20′	$4.12
221-1/16″	.063	.031	.017	100′	19.43	18′	4.12
221-3/32″	.093	.046	.020	100′	22.45	16′	4.12
221-⅛″	.125	.062	.020	100′	24.00	14′	4.12
221-3/16″	.187	.093	.020	100′	29.25	12′	4.12
221-¼″	.250	.125	.025	100′	36.70	10′	4.12
221-⅜″	.375	.187	.025	100′	40.65	8′	4.12
221-½″	.500	.250	.025	20′	9.24	7′	4.12
221-¾″	.750	.375	.030	20′	12.32	6′	4.12
221-1″	1.000	.500	.035	20′	17.25	4′	4.12
221-1½″	1.500	.750	.040	20′	27.14	2.5′	4.12
221-2″	2.000	1.000	.045	20′	37.48	1.5′	4.12
221-3″	3.000	1.500	.050	8′	23.78	1′	4.12
221-4″	4.000	2.000	.055	8′	34.64	.5′	4.12

PACKAGED ASSORTMENTS IN 6″ LENGTHS

Assorted, standard colors and sizes in 6″ lengths, all identified.

Alpha No.	Size Range	No. Lengths/Box	Net/Box
FIT-221-MS1	3/64″ thru 3/16″ (5 sizes)	6 per size (30 total)	$4.61
FIT-221-MS2	¼″ thru ¾″ (4 sizes)	4 per size (16 total)	9.21
FIT-221-MS3	1″ thru 4″ (5 sizes)	2 per size (10 total)	8.05

FIT-350 IRRADIATED KYNAR‡ TUBING

High-temperature, thin-wall tubing with excellent cut-through and abrasion resistance. Semi-rigid, polyvinylidene fluoride. Non-flammable; shrinkage ratio, 2:1 (50%); high dielectric strength. Supplied in clear only. Shrinks to half size at 175°C; forms permanent mechanical bond. Operates at temperatures from −55° C to +175° C; withstands intermittent heat shock to 350° C.

Alpha No. FIT-	Dimensions, Inches			4 Ft. Lengths		6 In. Lengths	
	Min. I.D.*	Recov. I.D.†	Wall Th.	Std. Pkg.	Pkg. Net	Std. Pkg.	Pkg. Net
350-3/64″	.046	.023	.010	100′	$26.75	16′	$4.80
350-1/16″	.063	.031	.010	100′	29.30	14′	4.80
350-3/32″	.093	.046	.010	100′	34.90	12′	4.80
350-⅛″	.125	.062	.010	100′	38.35	10′	4.80
350-3/16″	.187	.093	.010	100′	59.65	8′	4.80
350-¼″	.250	.125	.012	100′	74.80	6′	4.80
350-⅜″	.375	.187	.012	100′	98.65	4′	4.80
350-½″	.500	.250	.012	20′	29.35	2′	4.80
350-¾″	.750	.375	.017	20′	53.95	1′	4.80
350-1″	1.000	.500	.019	20′	99.20	.5′	4.80

—WHAT IS ALPHA FIT TUBING?—

This concept in insulating and jacketing saves time and money and insures a better job. The user simply fits an expanded piece of FIT Tubing over the wire, cable, component or termination to be insulated, then uses heat to shrink it down to form a permanent, form-fitting seal. This expanded FIT Tubing eliminates forcing, covers irregular shapes and forms a skin-tight band. The irradiation process improves the properties of polymer tubing: Irradiated, cross-linked polymers will not flow at elevated temperatures; they are more resistant to chemical action; they are completely stress-crack resistant; longitudinal shrinkage is controlled and never exceeds 10%.

FIT-295 POLYOLEFIN SEMI-RIGID TUBING

Maximum strength at stress points; extremely strong, abrasion-resistant extruded tubing with heavy wall; good stability. Shrinkage 2:1 (50%) gives wide versatility. High temperature capability, though inflammable. **Shrinkage Temp.:** Approx. 275° F (135° C). **Operating Temp.:** 135° C, continuous. **Tensile Strength:** 2500 PSI, min. **Elongation:** 200% ultimate min. **Low Temp. Flexibility:** −67° F. **Dielectric Strength:** 500 V/mil, min. **Dielectric Constant:** 2.7. **Volume Resistance:** 10^{16} ohm/cm. **Environment Resistance:** Inert to fungus. Excellent resistance to fuel, oil, hydraulic fluid, solvents, acids and alkalis. Non-corrosive. Excellent resistance to soldering irons. No cracks or splits with heat aging 175° C (347° F) for 168 hours. **Standard Put-Up:** 4 ft. (prices given are per 100′) and 6″ lengths. **Colors:** Available in clear (specify) or color as indicated in table below.

Alpha No. FIT-	Clear or Color	Size, Inches			4 Ft. Lgths.		6″ Lengths	
		Min. I.D.*	Recov. I.D.†	Wall Thk.	Std. Pkg.	Pkg. Net	Std. Pkg.	Pkg. Net
295-3/64″	Yellow	.046	.023	.020	100′	$19.40	20′	$4.68
295-1/16″	White	.063	.032	.020	100′	20.40	18′	4.68
295-3/32″	Blue	.093	.045	.020	100′	23.55	16′	4.68
295-⅛″	Red	.125	.063	.020	100′	25.20	14′	4.68
295-3/16″	Green	.187	.093	.025	100′	30.65	12′	4.68
295-¼″	Slate	.250	.125	.025	100′	38.50	10′	4.68
295-⅜″	Brown	.375	.187	.030	100′	42.65	8′	4.68
295-½″	White	.500	.250	.030	20′	9.70	7′	4.68

PACKAGED ASSORTMENT IN 6″ LENGTHS

Alpha No.	Size Range	No. Lengths/Box	Net/Box
FIT-295-MS1	3/64″–½″ (8 sizes)	(40 total)	$4.68

FIT-300 IRRADIATED POLYOLEFIN TUBING

OUTER WALL SHRINKS . . . INNER WALL MELTS

Surface irradiated tubing has been developed to answer the need for easy-to-use, permanent encapsulation and jacketing material. Because only the outer wall of this tubing is irradiated, when heat is applied, only this outer wall shrinks. The inner wall, instead of shrinking, melts and the viscous plastic released by the heat, encapsulates the wire or component placed in the tubing. The pressure created by the outer wall shrinkage forces the melted plastic into every orifice, eliminating voids and resulting, when cooled, in a solid, homogenous molding. Alpha HG-1 hot air gun is recommended for heating tubing. However, excellent results may be achieved by use of an oven, hot liquids, soldering iron or even the flame of a match. **Shrinking and Melting Temperature:** 275° F (135° C). **Operating Temperature:** −55° C to +110° C. **Tensile Strength:** 2000 psi. **Elongation:** 400%. **Dielectric Strength:** 1100 V/mil. **Volume Resistance:** 10^{16} ohm/cm.

Alpha No. FIT-	Stock Color	Size, Inches			4 Ft. Lgths.		6″ Lgth.	
		Min. I.D.*	Recov. I.D.†	Wall Thk.	Std. Net	Pkg. Net	Std. Pkg.	Pkg. Net
300-⅛″	Brown	.125	.023	.038	100′	$ 51.00	7′	$4.68
300-3/16″	Gray	.187	.060	.043	100′	62.30	6′	4.68
300-¼″	White	.250	.080	.047	100′	77.70	5′	4.68
300-⅜″	Red	.375	.135	.050	100′	86.60	4′	4.68
300-½″	Blue	.500	.195	.055	20′	20.40	3′	4.68
300-¾″	Yellow	.750	.313	.065	20′	31.50	2′	4.68
300-3/10″§	Blue	.300	.050	1.00	100′	177.30	2′	4.68

FIT-500 SHRINKABLE TEFLON TUBING

FIT-500 shrinkable tubing forms a tight, flexible protective covering for wires and electronic components; it is recommended for use as a mechanical shield and for friction-proofing. Resists chemical and corrosive agents; is non-burning, non-corrosive. Electrical characteristics remain stable throughout electrical range. It shrinks to approximately 65% of its supplied dia. at a temperature of 327° C; longitudinal shrinkage is less than 10%. **Operating Temperature:** −67° C to +250° C.

Alpha No. FIT-	Size, Inches			2 Ft. Lengths	
	Min. I.D.*	Recov. I.D.†	Wall Thk.	Std. Pkg.	Pkg. Net
500-30	.030	.022	.009	100′	$29.16
500-28	.035	.025	.009	100′	30.42
500-26	.040	.028	.010	100′	33.06
500-24	.050	.032	.010	100′	41.10
500-22	.055	.037	.010	100′	44.10
500-20	.060	.044	.012	100′	55.14
500-18	.076	.052	.012	100′	60.60
500-16	.093	.063	.012	100′	69.95
500-14	.121	.078	.012	100′	78.60
500-12	.153	.096	.012	50′	45.93
500-10	.191	.116	.012	50′	52.98
500-8	.240	.144	.015	50′	79.17
500-6	.302	.178	.015	20′	37.93
500-4	.370	.224	.015	20′	45.89
500-2	.430	.278	.015	20′	56.11
500-0	.470	.347	.015	20′	68.29

*Before shrinking. †After shrinking. ‡Pennsalt trademark. §Heavy walled tubing for use where a large volume of meltable material is needed.

FIT® TUBING ACCESSORIES, CAPS AND SOLDERING SLEEVES

FIT-600 NEOPRENE EXTRA FLEXIBLE-RUGGED IRRADIATED HEAT SHRINKABLE TUBING

MEETS MIL-R-46846A/1, MIL-1-23053/B/1, AMS-3623

Highly flexible, abrasion resistant heavy wall neoprene tubing ideal for fabrication in house short-run cables and harnesses. Widely used in prototype and repair work. At applied heat of 175° C, FIT-600 shrinks to approximately half its supplied diameter. Longitudinal shrinkage is less than 10%. Has good dielectric strength, excellent chemical and solvent resistance. Dielectric strength, 300 volts/mil. Flammability, self-extinguishing in 5 sec. Elongation, 250%.

Alpha No.	Size	Min. I.D. Before Shrinkage	Recov. I.D. After Shrinkage	Nom. Wall Thk.	Net per Pkg.	
					25′	100′
FIT-600-¼	¼″	.250″	.143″	.035″	$ 20.81*	$ 81.63
FIT-600-⅜	⅜″	.375″	.214″	.040″	24.92	97.67
FIT-600-½	½″	.500″	.286″	.048″	27.68	108.53
FIT-600-⅝	⅝″	.625″	.375″	.052″	31.16	122.13
FIT-600-¾	¾″	.750″	.428″	.057″	34.61	135.74
FIT-600-⅞	⅞″	.875″	.500″	.065″	38.73	151.83
FIT-600-1	1″	1.00″	.570″	.070″	42.21	165.53
FIT-600-1¼	1¼″	1.25″	.714″	.087″	55.88	219.12
FIT-600-1½	1½″	1.50″	.857″	.095″	65.28	255.99
FIT-600-1¾	1¾″	1.75″	1.00″	.107″	79.82	312.99
FIT-600-2	2″	2.00″	1.14″	.110″	92.82	363.99
FIT-600-3	3″	3.00″	1.71″	.125″	141.69	280.55*

*Pkg. of 50 Ft.

PACKAGED ASSORTMENTS IN 6″ LENGTH

Alpha No.	Tubing Size Range	Length	Lengths per Box	Net per Box
FIT-600 MS-1	¼″–⅞″	6″	12	$ 9.00
FIT-600 MS-2	⅞″–3″	6″	12	24.30

FIT-700 ADHESIVE LINED POLYOLEFIN CABLE AND CONNECTOR SLEEVES

Designed to protect cables used in overhead or underground installations from moisture penetration, corrosion and electrical breakdown. Sleeves are made of irradiated polyolefin tubing with an inner pre-coat of moisture resistant mastic for splice and connector protection on electrical, telephone, CATV cable. When heated to 275° F, tubing shrinks down and mastic flows to totally encapsulate wire splice or connector and cable insulation. Available in standard wall sleeves for use in general applications where wall thickness up to 600 volt cable is required, and in heavy wall sleeves for applications where extra mechanical protection or minimum wall thickness is needed, or where underground specifications must be met. Tough crystaline seal withstands external pressures to 100 psi. Operating temp., −40° C to +135° C. Dielectric strength, 300 volts/mil. Tensile strength, 2400 psi ASTM-D 2671. Black only.

STANDARD WALL SLEEVES

Alpha No.	Min. I.D. Expanded	Max. Recov. I.D.	Wall Thickness	Net per Pkg.*, Lengths		
				6″	9″	12″
FIT-700-1	.750″	.250″	.075″	$ 9.98	$ 8.40	$ 8.18
FIT-700-2	1.360″	.600″	.070″	14.78	13.11	12.47
FIT-700-3	1.400″	.400″	.070″	12.47	10.34	9.83
FIT-700-4	1.950″	.750″	.070″	18.23	16.62	15.65
FIT-700-5	2.750″	1.000″	.090″	19.65	......	18.14

*6″ lgths. have 12 lgths. per pkg. 9″ lgths. have 8 lgths. per pkg. 12″ lgths. have 6 lgths. per pkg.

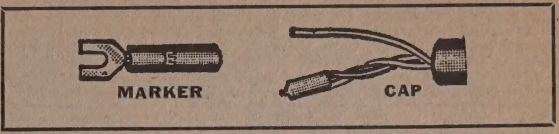
HEAVY WALL SLEEVES

FIT-700-21	.750″	.220″	.110″	$11.36	$ 9.05	$ 8.87
FIT-700-22	1.200″	.300″	.165″	12.47	10.34	9.83
FIT-700-23	1.500″	.500″	.175″	17.73	14.58	13.58
FIT-700-24	1.920″	.600″	.175″	19.67	15.87	15.09
FIT-700-25	3.300″	1.000″	.175″	41.10	....	39.47
FIT-700-26	4.500″	1.500″	.175″	49.50	....	46.80

ASSORTMENT

Alpha No.	Description	No. of Lgths.	Net Each
FIT-700 MS-1	6″ lengths all sizes, standard sleeves	10	$15.00
FIT-700 MS-2	6″ lgths. all sizes, heavy wall sleeves	12	31.50

FIT-MARKERS AND FIT-CAPS



FIT-MARKERS—SHRINKABLE WIRE MARKERS

Pre-printed lengths of flexible black polyolefin tubing for permanent wire and cable identification. Printed in white type by hot stamping foil process; assures permanence even when subjected to a high degree of abrasion or certain chemical solvents. For numerical markers (two each 1–50) add suffix **NS** (example, MRK-B-**NS**); for alphabetical markers (4 each A–Z) add suffix **LS** (example, MRK-B-**LS**) to numbers below.

Alpha No.	Wire O.D., In.	Min. I.D.*, In.	Recov. I.D.†, In.	Marker Lgth., In.	Wall Th., In.	Net Pkg. 100
MRK-A	.049–.065	.098	.049	¾	.016	$3.40
MRK-B	.066–.095	.122	.061	¾	.016	3.40
MRK-C	.096–.150	.178	.089	¾	.016	3.40

FIT-CAPS

Shrinkable Polyolefin Wire Termination Caps—Semi-rigid tubing sealed on one end and specifically designed to act as termination caps over wire, cable and splices. Shrinkage ratio, 2:1.

Alpha No.	Color	Dimensions, Inches				Net per Standard Package Put-Up	
		Min. I.D.*	Recov. I.D.†	Wall Thk.	Nom. Lgth.	1000*	100
CAP-1	White	.063	.025	.016	¾	$ 38.84	$ 4.19
CAP-2	Red	.125	.050	.020	1	49.38	5.25
CAP-3	Slate	.250	.100	.025	1¼	67.76	7.09
CAP-5	Brown	.350	.175	.035	1⅓	86.08	8.93
CAP-4	Black	.500	.250	.040	1½	204.09	20.73

Self-Encapsulating Molded Caps—Molded, heat shrinkable, cross-linked polyolefin with two inserts: One at closed end of cap melts and flows between the splice forming a moisture-proof encapsulation; insert near open end acts as a dam. Cap shrinks and melts at 275° F. Black only.

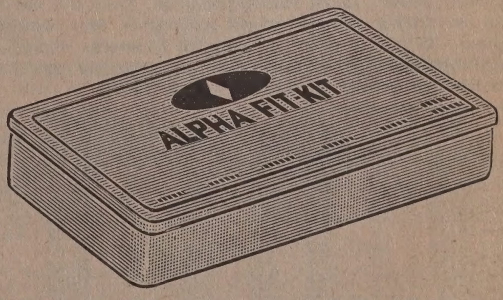
Alpha No.	Size, Inches			Nom. Wall Thk., Inch		Net per Pkg.*	
	Min. I.D.*	Recov. I.D.†	Nom. Lgth.	Inner	Outer	Pkg. of 10	Pkg. fo 25
CAP-11	.160	.080	1.12	.013	.040	$ 9.20	$22.87
CAP-12	.250	.120	1.25	.020	.050	10.50	26.25
CAP-15	.360	.180	1.50	.030	.060	11.85	29.62

Molded Polyolefin Caps—Shrinks when heated (275° F) to a predetermined size and shape. Shrinkage ratio, 2:1. Black only.

Alpha No.	Dimensions, Inches				Net per Pkg*	
	Min. I.D.*	Recov. I.D.†	Wall Thk.	Nom. Lgth.	Pkg. of 10	Pkg. of 25
CAP-21	.16	.08	.04	1.12	$ 3.96	$ 9.90
CAP-22	.25	.12	.05	1.15	4.90	11.97
CAP-23	.36	.18	.06	1.40	6.27	15.68
CAP-24	.50	.25	.07	1.87	8.25	20.63
CAP-25	.75	.37	.08	2.70	12.21	30.53
CAP-26	1.00	.50	.09	3.50	16.34	40.85
CAP-27	1.50	.75	.10	4.00	21.45	53.65
CAP-28	2.00	1.00	.11	4.50	26.40	66.00

*Before shrinking. †After shrinking. *Larger quantity prices on request.

FIT-KITS—IDEAL R & D, OR PROTOTYPE SAMPLERS



FIT-KIT-1—Contains more than 70 6″ lengths of 7 widely used types of FIT Tubing in a variety of colors. Compartmented clear plastic box allows easy storage and quick identification. Includes lengths of FIT-105, FIT-221, FIT-295, FIT-300, FIT-350, FIT CAPS AND FIT MARKERS. Size, 11″ w. x 6½″ d. x 2″ h. Net Each..**$21.00**

FIT-KIT-2—Contains all items in FIT-KIT-1, plus 6″ lengths of FIT-200, FIT-400, FIT-500, FIT-600, FIT-700, and 1″ cut pieces of FIT-200 and FIT-521. Kit is complete engineering, prototype, or laboratory inventory of all Alpha FIT-Tubing. Consists of two 11″ w. x 6½″ d. x 2″ h. compartmented clear plastic boxes. Net Each..**$31.50**

PVC, ZIPPER, FIBERGLASS AND TEFLON TUBING

alpha ALPHA WIRE

ALPHA POLYVINYLCHLORIDE PVC-105 MIL-I-631D PLASTIC TUBING

All-purpose, economical tubing is compounded with first quality, non-migratory resinous type plasticizers; designed to counteract chemical and environmental degradation. Rated for temperatures as high as 105° C with high dielectric strength. No loss in tensile strength or flexibility; resistant to abrasion. Retains its flexibility which permits it to cling to and protect irregular shapes. Meets MIL-I-631D, Type F, Form U, Grade C, Class I, Category 1. **Dielectric Strength:** 800 V/mil. **Tensile Strength:** 2700–3300 psi. **Min. Volume Resis.:** 10^{11} ohm/cm. **Low Temperature Flexibility:** −20° C. **Specify Color:** **#24** thru **#2:** Clear, black, white, yellow, red or green; **#1** thru **1″:** Clear, black or white; **1⅛″** thru **2½″:** Clear or black. **To Order:** Add gauge size to prefix **PVC-105/**, e.g., **PVC-105/24.**

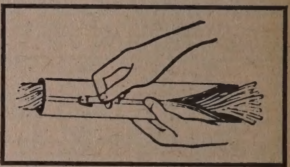
Ga. Size	Nom. I.D., In.	Net per Spool of 100′	500′	1000′
24	.022	$2.43	$ 8.80	$13.00
22	.027	2.44	8.85	13.10
20	.034	2.49	9.05	13.50
19	.038	2.55	9.30	13.50
18	.042	2.58	9.40	13.80
17	.047	2.61	9.55	14.00
16	.053	2.72	10.00	14.60
15	.059	2.80	10.35	14.90
14	.066	2.89	9.95	....
13	.076	2.94	10.20	....
12	.085	3.07	10.70	....
11	.095	3.15	11.05	....
10	.106	3.27	11.55	....
9	.118	4.27	15.70	....

Ga. Size	Nom. I.D., In.	Net Price per Put-Up* Coil of 25′	Coil of 100′	Coil of 250′	Spool of 500′
8	.133	......	$ 4.57†	....	$16.95
7	.148	......	4.84†	....	18.10
6	.166	......	5.19†	....	19.55
5	.186	......	5.58†	....	21.15
4	.208	......	6.00	$13.75	....
3	.234	......	6.38	14.70	....
2	.263	......	6.91	16.03	....
1	.294	......	7.42	17.30	....
0	.330	......	7.98	18.70	....
5/16″	.312	$2.48	9.42	22.30	....
⅜″	.375	2.83	10.81	25.78	....
7/16″	.438	3.15	11.58	....	....
½″	.500	3.44	12.77	....	....

Ga. Size	Nom. I.D., In.	Net Price per Put-Up* Coil of 25′	Coil of 50′	Coil of 100′
9/16″	.562	$ 4.50	....	$17.00
⅝″	.625	4.85	....	18.38
¾″	.750	6.59	$12.67	....
⅞″	.875	7.37	14.25	....
1″	1.000	8.21	15.92	....
1⅛″	1.125	10.69	20.88	....
1¼″	1.250	11.28	22.07	....
1⅜″	1.375	12.04	23.59	....
1½″	1.500	14.55	28.60	....
1¾″	1.750	18.08	35.66	....
2″	2.000	24.75	49.00	....
2¼″	2.250	29.38	58.26	....
2½″	2.500	34.79	69.07	....

*Larger put-ups available. †On spool.

ALPHA POLYVINYLCHLORIDE ZIPPER TUBING



All-purpose, easy-to-use jacketing material; zips on in seconds without disconnecting or disturbing connection. Track thickness (when closed), .095″; dielectric strength, 759 V/mil; tensile strength, 3,810 psi; ultimate elongation, 255%; operating temperature, upper limit, +106° C; lower limit, −86° C; fungus proof; self-extinguishing; lateral pull strength (permanently sealed) 59.8 #/in. One metal slider supplied with every 25 feet; additional sliders, AB-295, may be ordered at **5c** each. **ZIP-31M Type:** MIL-I-631D, Grade C materials. Temp., −20° C to +105° C. Wall thickness, .040″; for heavy duty construction. Clear or black. **ZIP-50 Type:** Aluminum foil laminated between two sheets of polyvinyl. Wall thickness, .040″. Silver-gray color. **ZIP-31 Type:** MIL-I-631D, Grade C materials. All-purpose type. Wall thickness, .020″. Temp., −20° C to +105° C. Clear or black.

Alpha No.	Net 100′*	Alpha No.	Net 100′*	Alpha No.	Net 25′	Net 50′	Net 100′*
ZIP-31M-¼″*	$50.40	ZIP-50-¼″*	$ 57.00	ZIP-31-¼″*	$11.10	$21.90	$43.20
ZIP-31M-⅜″*	51.00	ZIP-50-⅜″*	57.60	ZIP-31-⅜″*	11.40	22.50	44.40
ZIP-31M-½″	51.60	ZIP-50-½″	59.40	ZIP-31-½″	11.56	22.80	45.00
ZIP-31M-⅝″	52.20	ZIP-50-⅝″	62.40	ZIP-31-⅝″	11.70	23.10	45.60
ZIP-31M-¾″	52.80	ZIP-50-¾″	66.00	ZIP-31-¾″	11.86	23.40	46.20
ZIP-31M-⅞″	53.40	ZIP-50-⅞″	70.80	ZIP-31-⅞″	12.16	24.00	47.40
ZIP-31M-1″	54.60	ZIP-50-1″	74.40	ZIP-31-1″	12.30	24.20	48.00
ZIP-31M-1⅛″	56.40	ZIP-50-1⅛″	78.00	ZIP-31-1⅛″	12.76	25.20	49.80
ZIP-31M-1¼″	57.60	ZIP-50-1¼″	81.00	ZIP-31-1¼″	12.90	25.50	50.40
ZIP-31M-1½″	59.40	ZIP-50-1½″	87.60	ZIP-31-1½″	13.36	26.40	52.20
ZIP-31M-1¾″	61.20	ZIP-50-1¾″	94.20	ZIP-31-1¾″	13.80	27.30	54.00
ZIP-31M-2″	62.40	ZIP-50-2″	100.80	ZIP-31-2″	14.10	27.90	55.20

*Write for prices on larger put-ups. *Cannot be closed with slider; must be done manually.

ALPHA FIBERGLASS TUBING

PIF-130 is the toughest and most pliable of insulating materials and is formulated to provide the maximum in electrical characteristics, chemical resistance, heat stability and abrasion resistance. Conforms to MIL-I-3190B, Class B, Grade B; ASTM-D372; NEMA-VS-1; MIL-I-21557. Tubing is constructed from an inorganic fiberglass base sleeving coated with heat-resistant, extremely flexible, tough plastic insulation. Ends will not fray when cut; tubing will not support combustion. **Max. Operating Temp.:** −20° C to +130° C. **Dielectric Strength:** 4000 V/mil. **Tensile Strength:** 1500–2000 psi. **Ultimate Elongation:** 300–400%. **Min. Volume Resis.:** 10^7 ohm/cm. **Color:** Black.

Alpha No.	Size	Wall Thk. In. Max.	Min.	Net per Put-Up Spool of 100′	Spool of 250′	Spool of 500′	Spool of 1000′
PIF-130/24	24	.022	.016	$ 4.50	....	$19.50	$36.00
PIF-130/22	22	.022	.016	4.50	....	19.80	36.75
PIF-130/20	20	.022	.016	4.58	....	19.88	37.50
PIF-130/18	18	.022	.016	4.65	....	19.50	39.00
PIF-130/16	16	.028	.020	4.80	....	20.63	40.50
PIF-130/14	14	.028	.020	5.10	....	21.75	....
PIF-130/12	12	.028	.020	5.25	....	23.25	....
PIF-130/10	10	.028	.020	5.70	....	25.50	....
PIF-130/8	8	.028	.020	6.38	....	28.50	....
PIF-130/6	6	.028	.020	7.35	16.50	....	....
PIF-130/4	4	.036	.026	8.10	19.50	....	....
PIF-130/2	2	.036	.026	10.20	24.75	....	....
PIF-130/0	0	.042	.030	13.80*	....	....	....
PIF-130/⅜″	⅜″	.042	.030	17.55*	....	....	....
PIF-130/7/16″	7/16″	.042	.030	23.25*	....	....	....
PIF-130/½″	½″	.042	.030	29.25*	....	....	....
PIF-130/⅝″	⅝″	.042	.030	34.88*	....	....	....
PIF-130/¾″	¾″	.042	.030	43.50*	....	....	....
PIF-130/⅞″	⅞″	.042	.030	52.50*	....	....	....
PIF-130/1″	1″	.042	.030	63.00*	....	....	....

*On coils, not on spools.

ALPHA TEFLON EXTRUDED TUBING

A thin, flexible insulation, Teflon• tubing permits compactness never before possible. Unmatched for use in electrical applications at high frequencies and temperatures. Rated for continuous operations at 250° C while it retains its toughness and flexibility. Will not shrink back during soldering. Chemically inert; has zero moisture absorption; non-flammable. TFT-250 conforms to MIL-I-22129C. **Max. Operating Temp.:** −90° C to +250° C. **Dielectric Strength:** 1400 V/mil. **Tensile Strength:** 5000–7500 psi. **Ultimate Elongation:** 300–500%. **Min. Volume Resis.:** 10^{17} ohm/cm. **Specify Color:** TFT-200: **#30** thru **#8:** Natural or black; **#7** thru **#0:** Natural only. TFT-250: Natural only. TFT-250 is similar characteristically to TFT-200, but is recommended for use where additional dielectric values and mechanical strength are necessary. **To Order:** Add gauge size to **TFT-200/** or **TFT-250/** prefix, e.g., **TFT-200/30.**

THIN WALL TUBING
Alpha No. TFT-200/

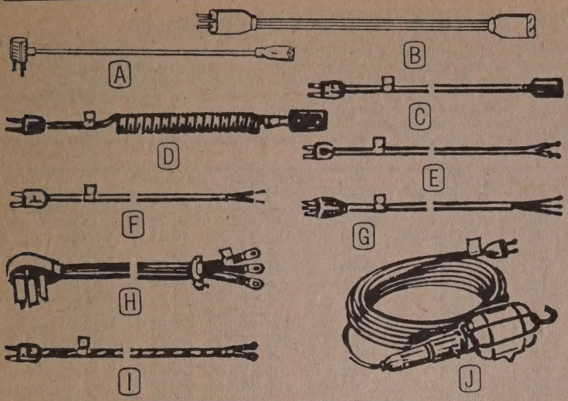
Ga. Size	Nom. Dim., In. I.D.	Wall Thk.	Net/Spool of 100′
30	.012	.009	$ 9.00
28	.015	.009	8.00
26	.018	.010	7.70
24	.022	.010	7.70
22	.027	.010	9.50
20	.034	.012	12.00
19	.038	.012	12.50
18	.042	.012	12.98
17	.047	.012	14.18
16	.053	.012	14.53
15	.059	.012	14.58
14	.066	.012	16.04
13	.076	.012	17.17
12	.085	.012	18.48
11	.095	.012	20.45
10	.106	.012	22.04
9	.118	.015	24.95*
8	.133	.015	27.25
7	.148	.015	29.45*
6	.166	.015	31.82*
5	.186	.015	34.85*
4	.208	.015	38.10*
3	.234	.015	41.74*
2	.263	.015	48.13*
1	.294	.015	52.71*
0	.330	.015	59.14*

STANDARD WALL TUBING
Alpha No. TFT-250/

Ga. Size	Nom. Dim., In. I.D.	Wall Thk.	Net/Spool of 100′
24	.022	.012	$10.01
22	.027	.012	11.23
20	.034	.016	15.19
19	.038	.016	16.31
18	.042	.016	18.70
17	.047	.016	20.39
16	.053	.016	21.78
15	.059	.016	22.26
14	.066	.016	24.03
13	.076	.016	25.33
12	.085	.016	27.41
11	.095	.016	30.43
10	.106	.016	33.02
9	.118	.020	45.86*
8	.133	.020	47.43*
7	.148	.020	49.56*
6	.166	.020	53.55*
5	.186	.020	58.99*
4	.208	.020	64.09*
3	.234	.020	70.89*
2	.263	.020	73.14*
1	.294	.020	81.26*
0	.330	.020	91.38*

*Random lengths packed in 100′ coils. •Registered DuPont Corp. trademark.

Belden Special Purpose Cords



EXTENSION CORD SETS

THREE-CONDUCTOR ADD-A-LINE (FIG. A)

Type SJT vinyl cordage 8-ft. and 15-ft. black extension cords have added convenience of an outlet in the adapter plug so you can add a line. Molded vinyl grounding connector, PH-108. Vinyl adapter plug, PH-267. Nominal O.D., .328". Blue Flag label. Certified to CSA Standards.

Belden Number	Length, Feet	AWG (Strands)	Rating	Net Each
17462S	8	18 (16 x 30)	1250 W, 10A–125V	$2.35
17463S	15	18 (16 x 30)	1250 W, 10A–125V	3.18

THREE-CONDUCTOR FLAT YELLOW (FIG. B)

Type SPT-3 vinyl cordage flat yellow extension cords for most light duty purposes. Molded vinyl grounding plug, PH-310. Molded vinyl grounding connector, PH-32. Nom. O.D., .239" x .517".

17196S	25	14 (41 x 30)	1875 W, 15A–125V	$ 5.02
17198S	50	14 (41 x 30)	1875 W, 15A–125V	8.27
17192S	100	14 (41 x 30)	1625 W, 13A–125V	15.60

TWO-CONDUCTOR, SINGLE CONNECTOR (FIG. C)

Unbreakable, molded vinyl, cord-holder plug; unbreakable molded vinyl connector unless otherwise noted. Two-conductor rubber cordage. Blue Flag label.

Belden Number	Length, Ft.	AWG (Strands)	Cord-age	Color	Net Each
17259S	9	18 (41 x 34)	SV	Gray	$1·17
17260S	8	18 (41 x 34)	SVT	Gray	1·01
17359B*	10	18 (16 x 30)	SJT	Gray	1·15
17361S	10	16 (26 x 30)	SJ	Black	1·41
17555S	25	16 (65 x 34)	S	Black	4·11
17556S	50	16 (65 x 34)	S	Black	7·28

*Has molded vinyl connector with dummy center contact.

APPLIANCE CORDS (FIG. D)

Coiled or standard cords, black only. Unbreakable, vinyl molded plug on HPN parallel neoprene heater cord with appliance plug. Blue Flag label.

Belden Number	Lgth., Ft.	AWG (Stranding)	Type Appliance Plug	Amps at 125 V	Net Each
17886S	4*	18 (41 x 34)	Min. slotted	....	$1.42
17826S†	6	16 (65 x 34)	Terms. for #8 screw	15	.66
17852S§	2	18 (41 x 34)	Min. slotted	....	.58
17866S§	6	18 (41 x 34)	Min. slotted	....	.75
17857S	6	18 (41 x 34)	Std. appliance	10	.86
17870S‡	8	16 (65 x 34)	Std. extension cord	15	.98
17876S	6	16 (65 x 34)	Roaster appl.	15	.99

*Coiled types; extended length. †Without appliance plug; Tan Flag label. ‡Has molded vinyl connector for blade prongs. §Specify black or ivory.

POWER SUPPLY CORDS

PARALLEL LAMP CORDS (FIG. E)

Unbreakable molded vinyl plug on parallel lamp cord; two conductors, AWG stranding 18 (41 x 34); conductors split 1" and stripped and twisted ⅝". Tan Flag label.

Belden Number	Length, Feet	Cord Type	Specify Color	Net Each
17106S	6	SPT-1 vinyl	Brown, gray, ivory	$0·45
17109S	9	SPT-1 vinyl	Brown, white	·56
17112S	12	SPT-1 vinyl	Brown, white	·70
17126S	6	SP-1 rubber	Brown	·56
17129S	9	SP-1 rubber	Brown	·72

SVT, SV, SJ, SVO TWO-CONDUCTOR CORDS (FIG. F)

Power supply type for mixers, tools, etc. Unbreakable, molded vinyl, cord-holder plug; two-conductor cord; outer jacket stripped 1½"; conductors stripped and twisted ⅝". Tan Flag label.

Belden Number	Lgth., Ft.	AWG (Strands)	Type Cord	Color	Net Each
17205S	6	18 (41 x 34)	SVT vinyl	†	$0·69
17206S	6	18 (41 x 34)	SV rubber	Gray	·83
17249S*	6	18 (41 x 34)	SVO neoprene	Black	1·57
17308S	8	18 (16 x 30)	SJ rubber	Black	·94
17310S	10	18 (16 x 30)	SJ rubber	Black	1·04
17328S	8	16 (26 x 30)	SJ rubber	Black	1·09
17330S	10	16 (26 x 30)	SJ rubber	Black	1·26

*Coiled; conductors stripped ½" and tinned. †Gray and black.

THREE-CONDUCTOR CORDS (FIG. G)

Heavy-duty for tools and appliances requiring grounding. Withstands crushing, twisting and pulling. Unbreakable, molded, vinyl grounding plug; outer jacket stripped 2"; conductors stripped and twisted ⅝". Tan Flag label.

Belden Number	Lgth., Ft.	AWG (Strands)	Type Cord	Color	Net Each
17236S†	6	18 (41 x 34)	SV rubber	Black	$1·01
17237S†	6	18 (41 x 34)	SVT vinyl	Gray	·90
17238S†	8	18 (41 x 34)	SV rubber	Black	1·12
17239S†	8	18 (41 x 34)	SVT vinyl	Gray	·99
17276C†	20	16 (26 x 30)	SJT vinyl	Gray	2·50
17405S	6	18 (16 x 30)	SJT vinyl	Gray	·93
17406S	6	18 (16 x 30)	SJ rubber	Black	1·06
17407S	8	18 (16 x 30)	SJT vinyl	Gray	1·07
17408S	8	18 (16 x 30)	SJ rubber	Black	1·20
17409B	8	18 (16 x 30)	SJO neoprene	Black	1·09
17412S	12	18 (41 x 34)	SJ rubber	Black	1·82
17419S	9	16 (65 x 34)	SJ rubber	Black	1·60
17422S	12	16 (65 x 34)	SJ rubber	Black	1·98
17425S	15	16 (65 x 34)	SJ rubber	Black	2·46
17447S#	6	18 (41 x 34)	SJO neoprene	Black	2·08
17448S#	6	16 (65 x 34)	SJO neoprene	Black	2·21
17449S#	12	16 (65 x 34)	SJO neoprene	Black	3·09
17629S*	9	14 (41 x 30)	S rubber	Black	2·85
17635S*	15	14 (41 x 30)	S rubber	Black	4.46

*For heavy-duty power tools; conductors stripped and twisted ¾". †Outer jacket stripped 1½". #Coiled. Outer jacket stripped 1½"; conductors stripped and tinned ½".

DRYER CORDS (FIG. H)

Molded vinyl three-prong right-angle plug; flat vinyl, three-conductor, gray SRDT cordage with conductors split 2¾" and terminals for ¼" stud; strain relief clamp. Rated 30 A, 250 V. AWG #10. Green Flag label.

Belden Number	Length, Ft.	Net Each	Belden Number	Length, Ft.	Net Each
1780S	3	$2·14	1782S	6	$3·12
1734S	4	2·45	1787B	10*	4·19
1735S	5	2·75			

*10 ft. cords not recognized by UL.

ELECTRIC RANGE CORDS (FIG. H)

Easier to install and require less space than standard round type. Molded, right-angle plug has three prongs; flat vinyl three-conductor SRDT cordage is gray; conductors split 2¾" with terminals for ¼" stud; strain relief clamp. Green Flag label.

Belden Number	Lgth., Ft.	Rating	Conductors	Net Each
1706S	3	50 A—250 V	2 #6—1 #8	$2·69
1714S	4	50 A—250 V	2 #6—1 #8	3·31
1715S	5	50 A—250 V	2 #6—1 #8	3·86
1775S	6	50 A—250 V	2 #6—1 #8	4·45
1777B	10*	50 A—250 V	2 #6—1 #8	6·51
1709S	3	40 A—250 V	2 #8—1 #10	2·27
1724S	4	40 A—250 V	2 #8—1 #10	2·67
1725S	5	40 A—250 V	2 #8—1 #10	3·04
1785S	6	40 A—250 V	2 #8—1 #10	3·50

*10 ft. lengths not recognized by UL.

HEATER APPLIANCE CORDS (FIG. I)

Type HPD recommended for irons and similar uses where flexibility is important and for use where cord is subjected to abrasion. Unbreakable, molded vinyl cord-holder plug. HPD asbestos cotton braid cord is black with spiral white tracer; 17727 and 17728 also available in brown with crossed white tracer. Braid stripped 1$\frac{1}{16}$" with fiber glass tie, eyelets for #8 screw except as otherwise noted. Tan Flag label.

Belden Number	Lgth., Ft.	AWG (Stranding)	Amps at 125 V	Type Cotton	Net Each
17723C*†	8	18 (41 x 34)	10	Glazed	$1·44
17722C	8	18 (41 x 34)	10	Glazed	1·41
17727S	8	16 (65 x 34)	15	Glazed	1·25
17728S‡	8	16 (65 x 34)	15	Glazed	1·23
17726C*	8	16 (65 x 34)	15	Glazed	1·58
17707B	8	18 (41 x 34)	10	Soft	·98

*Neoprene protector sleeve with metal strain relief. †Spade terminals. ‡Braid stripped 1½", conductors stripped and twisted ⅝".

Same as HPD types above except with hi-temp. plastic fixed strain relief. Rated 10 A, 125 V; 8-ft. lg.; 18 (41 x 34).

Belden Number	Legs, Inch	Termi-nals	Net Each	Belden Number	Legs, Inch	Termi-nals	Net Each
17724C	1$\frac{1}{16}$	#8 screw	$1.07	17732S	1¼	Snap on	$1.25
17731S	2$\frac{21}{32}$	Snap on	1.25	17733S	1$\frac{7}{16}$	#6 screw	1.25

CORDLITES® (FIG. J)

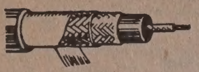
Switched trouble lights with lamp guard and one tool tap on handle; model 17925 has feed through switch on handle; with yellow cord; all others black cord. Oil and ozone resistant. Models with reeled cords and reeled extensions also available. Blue Flag label.

Belden Number	Length, Ft.	AWG, No. Conds.	Type Cord	Net Each
17998S*	25	16–3	SJO neoprene	$11·06
17999S*	50	16–3	SJO neoprene	17·23

*Have 3-conductor tool taps. Three-contact 15 amp, 125 V grounding type.

Vacuum Cleaner, Air Conditioner, Lawn Mower, Heavy Duty extensions and other specialty cords available on request.

Belden Electronic Wire and Cable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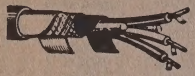
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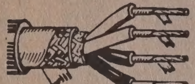
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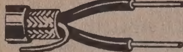
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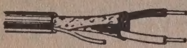
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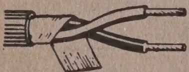
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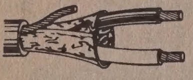
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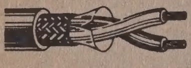
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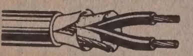
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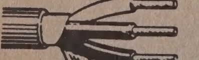
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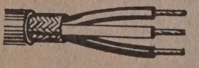
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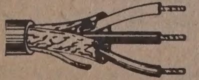
M

MICROPHONE AND SHIELDED POWER SUPPLY CABLES

Great abrasion and impact resistance; extra limp so cable lies flat. **No. 8410:** 3 strands copper, 4 strands Copperweld® tinned, cellulose yarn braid, rubber insul., rayon braid, tinned copper braid shield, cellulose yarn wrap, black rubber jacket. **Nos. 8406 and 8413:** Tinned cadmium bronze, cotton serve, rubber insulated, cabled with fillers, 100% coverage conductive textile wrap shield, tinned copper braid shield, cotton serve, black rubber jacket. **All Others:** Tinned copper, cotton wrap, rubber insulated, conductors cabled, rayon braid, tinned copper braid shield, cotton wrap, black rubber jacket. **Conductor Color Coding: 1,** white; **2,** black; **3,** red; **4,** green; **5,** blue; **6,** brown; **7,** yellow; **8,** orange.

Belden No.	Fig.	No. of Cond.	AWG and (Stranding)	Cap.,* pF/ft.	Nom. O.D.	Net Each, Spool of 15′	25′	50′	100′	250′	500′	1000′
8410	A	1	25 (7 x 33)	33	.245″	.....	$4.15	$ 7.20	$13.30	$30.75	$ 61.50	......
8413‡	B	2	24 (45 x 40)	55	.190″	$2.76	4.21	7.73	14.25	34.15	68.25	......
8406‡	B	3	24 (45 x 40)	60	.223″	.....	.....	.....	18.15	......	87.00	......
8412	C	2	20 (26 x 34)	55	.268″	.....	4.35	7.80	14.95	34.15	68.25	$136.50
8402†•	C	2	20 (26 x 34)	55	.268″	.....	.....	.....	16.05	38.55	77.05	......
8428#	C	2	18 (41 x 34)	60	.295″	.....	.....	.....	19.50	......	90.55	181.50
8408†•	C	2	16 (65 x 34)	55	.385″	.....	.....	.....	27.85	......	134.65	......
8423	C	3	20 (26 x 34)	60	.277″	.....	.....	9.15	16.80	39.50	79.05	158.10
8424	C	4	20 (26 x 34)	60	.295″	.....	.....	10.00	18.70	44.10	88.20	176.40
8407#•	C	4	16 (65 x 34)	55	.422″	.....	.....	.....	33.55	82.60	......	......
8425	C	5	20 (26 x 34)	60	.323″	.....	.....	.....	23.20	56.85	......	......
8426	C	6	20 (26 x 34)	60	.349″	.....	.....	.....	28.65	70.20	......	......
8427	C	7	20 (26 x 34)	60	.360″	.....	.....	.....	31.20	76.30	......	......
8418	C	8	20 (26 x 34)	60	.386″	.....	.....	.....	35.25	85.65	......	......

*Capacitance between one conductor and remaining conductors (if any) connected to shield. †Brown Hypalon® jacket; 8408 has heavy duty brown Hypalon jacket. ‡Miniature cable. #Black neoprene jacket; 8407 has heavy duty black neoprene jacket. •Passes the FR-1 vertical flame test.

BROADCAST AUDIO CABLES

Nos. 8437 and 8441: Tinned copper, vinyl insulated, conductors cabled, 8441 stranded, and 8437 solid tinned copper drain wire, tinned copper braid shield, black vinyl jacket. **Nos. 8450, 8451 and 9451:** Tinned copper, polypropylene insulated, conductors cabled, stranded tinned copper ground drain wire, Beldfoil® aluminum-polyester shield, paper wrap, black or gray vinyl jacket (specify); **No. 9451,** gray vinyl jacket only. Jacket and shield on No. 9541 are bonded so both can be removed on automatic stripping equipment. All types are 2-conductor. **Color Coding:** Black, red.

Belden No.	Fig.	AWG and (Stranding)	Nom. O.D.	Cap.* pF/ft.	Work Volts	Net Each, Spool of 100′	250′	500′	1000′
8437•	D	22 (Solid)	.200″	85	200	....	....	$30.85	$61.65
8441•	D	22 (16 x 34)	.210″	86	200	$7.65	....	33.75	67.50
8450†•	E	22 (Solid)	.118″	76	200	5.10	$ 9.20	18.40	36.75
8451†•	E	22 (7 x 30)	.135″	67	200	5.40	10.75	21.40	42.75
9451	E	22 (7 x 30)	.135″	67	200	....	....	23.05	46.05

*Between one conductor and other conductor connected to shield. †Miniature. ‡In self dispensing Convert-a-pakTM. •Passes the FR-1 vertical flame test.

TWO CONDUCTOR SHIELDED CABLE

Variety of gauges, insulations, shieldings and jackets meet every service requirement. Uniform quality for dependable service. **Fig. F Types:** Tinned copper, vinyl insulated, conductors cabled, tinned copper spiral wrapped shield, chrome vinyl jacket. **Fig. G Types:** Tinned copper, polyethylene insulated, conductors cabled, Beldfoil aluminum-polyester shield, stranded tinned copper drain wire (24 AWG for 8641, 22 AWG for 8761, 20 AWG for 8760 and 8762, 18 AWG for 8719, 16 AWG for 8720 and 14 AWG for 8718), chrome vinyl jacket. **Fig. H Type:** Tinned copper, rubber insulated, conductors cabled, separator, braided tinned copper shield, chrome vinyl jacket. **Fig. J Type:** Balanced pair instrumentation cable featuring short lay cabling to minimize pick-up of electromagnetic interference and special conductive textile tape to minimize microphonic noise. Tinned copper, polypropylene insulated, conductors cabled, noise reducing tape, 24 AWG stranded tinned copper drain wire, Beldfoil aluminum-polyester shield, black vinyl jacket. **No. 9154** similar to **Fig. G,** except vinyl insulated, twisted pair, 22 AWG wire, rose gray vinyl jacket; UL Listed (Style 2094).

Belden No.	Fig.	AWG and (Stranding)	Nom. O.D.	Color Coding	Cap.,* pF/ft.	Work Volts	Net Each, Spool of 100′	250′	500′	1000′
8739•	F	22 (Solid)	.160″	Blk, red	66	350	$ 5.00	....	$21.30	$ 42.60
8737•	F	22 (7 x 30)	.170″	Blk, red	70	350	5.40	$11.70	23.40	46.80
8759•	F	20 (7 x 28)	.195″	Blk, red	79	350	6.75	....	27.55	55.05
8790•	F	18 (7 x 26)	.231″	Red, wht	92	450	8.50	18.15	36.30	72.60
8780•	F	16 (19 x 29)	.266″	Blk, wht	98	450	10.70	....	46.95	93.90
8641	G	24 (7 x 32)	.160″	Blk, clear	42	350	4.65	....	18.85	37.65
8761	G	22 (7 x 30)	.167″	Blk, clear	47	350	....	....	19.30	38.55
8762	G	20 (7 x 28)	.196″	Blk, clear	49	350	5.93	12.15	24.30	48.60
8760	G	18 (16 x 30)	.222″	Blk, clear	44	450	....	14.60	29.20	58.35
8719	G	16 (19 x 29)	.274″	Blk, clear	47	600	....	....	43.15	86.25
8720	G	14 (19 x 27)	.340″	Blk, clear	47	750	....	....	65.70	131.40
8718	G	12 (19 x 25)	.400″	Blk, clear	49	1000	....	....	98.80	197.60
9154	G	20 (7 x 28)	.194″	Blk, red	100	300	....	....	24.30	48.60
8208	H	18 (16 x 30)	.255″	Red, wht	77	200	10.90	....	48.25	96.45
9452	J	24 (19 x 36)	.135″	Blk, red	58	200	5.55	....	22.95	45.90

*Between one conductor and other conductor connected to shield. •Passes the FR-1 vertical flame test.

THREE CONDUCTOR SHIELDED CABLES

Three conductor cable with three conductors shielded; #30 thru #16 gauge. **Fig. K Types:** Tinned copper, vinyl insulated, conductors cabled, tinned copper spiral wrapped shield. Chrome vinyl jacket. **Fig. L Types:** Tinned copper, vinyl insulated, conductors cabled, tinned copper braid shield. Chrome vinyl jacket. No. 8643: Same, but polypropylene insulated conductors cabled around textile strength member. Operating temperature, 105° C max. **Fig. M Types:** Tinned copper, polyethylene insulated, conductors cabled, Beldfoil aluminum-polyester shield, stranded tinned copper ground drain wire (22 AWG for 9770 and 8771, 20 AWG for 8770 and 8772, 18 AWG for 8618), chrome vinyl jacket. **Color Coding:** Black, red and white except 8771, 8772, 8770 and 8618, black, red and clear.

Belden No.	Fig.	AWG and (Stranding)	Nom. O.D.	Cap.,* pF/ft.	Working Volts	Net Each, Spool of 15′	50′	100′	500′	1000′
8731	K	22 (Solid)	.178″	63	350	....	....	....	$25.00	$ 50.00
8791	K	18 (7 x 26)	.236″	84	450	....	....	$10.40	45.90	91.80
8735	L	22 (7 x 30)	.199″	60	350	$1.65	$4.35	7.50	31.65	63.30
8643	L	30 (7 x 38)	.086″	43	200	....	....	8.78	20.55§	....
8618	M	16 (19 x 29)	.300″	50	600	....	....	....	59.40	118.80
8771	M	22 (7 x 30)	.175″	41	350	....	....	12.15§	24.30	48.60
8772	M	20 (7 x 28)	.200″	51	350	....	....	....	30.70	61.35
8770	M	18 (16 x 30)	.236″	48	450	....	....	....	39.10	78.15
9770‡	M	22 (7 x 30)	.145″	60	200	....	....	13.65§	27.30	54.60

*Capacitance between one conductor and other conductors connected to shield. §250′. ‡Polypropylene insulated and has brown vinyl jacket.

®TM: Beldfoil of Belden; Hypalon of DuPont; Copperweld of Copperweld Steel Co.

Belden Electronic Wire and Cable

TWO CONDUCTOR UNSHIELDED CABLES

All purpose cable for sound, intercom and alarm systems in a variety of sizes and insulations. Uniform quality and size for dependable service, easy installation. **Fig. A Types:** Copper, vinyl insulated, cabled. **Fig. B Types:** Copper, vinyl insulated, cabled, chrome vinyl jacket. **Fig. C Types:** Copper, vinyl insulated, chrome colored jacket, parallel cable. All conductors tinned except as noted.

Belden No.	Fig.	AWG and (Stranding)	Colors ‡	Nom. O.D.	Suggested Work Volts	Net Each, Spool of			
						25′	100′	500′	1000′
8481•	A	22 (Solid)*	1	.112″	350	....	$2.54	$ 8.20	$ 16.35
8482•	A	19 (Solid)*	1	.130″	350	....	3.32	12.15	24.30
8492•	A	19 (Solid)†	2	.170″	600	....	....	....	28.20
8460•	A	18 (7 x 26)	3	.175″	450	....	4.80	18.75	37.50
8470•	A	16 (19 x 29)	3	.195″	600	....	....	23.73	47.40
9151#	A	22 (7 x 30)†	2	.108″	300	....	....	9.80	19.65
9152#	A	20 (10 x 30)†	2	.125″	300	....	....	12.00	24.00
9153#	A	18 (16 x 30)†	2	.142″	300	....	....	16.35	32.70
8442•	B	22 (7 x 30)	4	.165″	350	....	....	13.15	26.25
8205•	B	20 (10 x 30)	4	.190″	350	....	4.21	15.45	30.90
8486•	B	19 (Solid)*	1	.162″	350	....	....	14.85	29.70
8461#•	B	18 (7 x 26)	3	.226″	450	....	5.63	22.95	45.90
9740•	B	18 (16 x 30)	4	.220″	400	....	....	22.95	45.90
8471•	B	16 (19 x 29)	3	.256″	600	....	....	31.15	62.25
8473•	B	14 (19 x 27)	3	.332″	600	....	....	49.45	98.85
8477•	B	12 (19 x 25)	3	.384″	600	....	....	69.55	139.05
8782	C	24 (7 x 32)†	5	.058 x .115	300	$0.96§	2.09	6.90	13.80
8781•	C	22 (Solid)†	....	.060 x .120	100	....	2.31	6.85	13.65
8649•	C	20 (7 x 28)†	6	.073 x .146	300	....	3.23	11.55	23.05

*Bare. †One cond. tinned. ‡Colors: 1—Brn, tan; 2—specify wht or brn; 3—blk, wht; 4—blk, red; (jacket color) 5—specify chrome, sand, clear or wht; 6—chrome, clear. §50′, **$1.41.** #UL Listed.

THREE CONDUCTOR UNSHIELDED CABLES

Three conductor unshielded cables of high quality for intercom, control line and many other applications. **Fig. D Type:** Bare copper, vinyl insulated and cabled. **Fig. E Types:** Copper, vinyl insulated, cabled. Chrome vinyl jacket. **Fig. F Types:** Copper, vinyl insulated, parallel cable.

8483•	D	19 (Solid)	6	.132″	350	....	$4.35	$17.50	$34.95
8443•	E	22 (7 x 30)*	7	.150″	200	$1.52	4.00§	16.15	32.25
8487•	E	19 (Solid)	6	.180″	350	....	....	21.40	42.75
8701•	F	22 (Solid)†	8	.060 x .190	100	....	3.20	11.70	23.40
8475•	F	16 (19 x 29)	9	.102 x .295	300	....	10.05	45.45	....
8476•	F	16 (19 x 29)	10	.102 x .400	....	....	13.35	59.00	....

*Tinned. †One conductor tinned. ‡Colors: 6, brown, gray, tan; 7, black, green, red; 8, chrome; 9, white, brown, red. §250′, **$8.10.**

VINYL MICROPHONE AND SHIELDED POWER SUPPLY CABLES

Low capacitance and loss; lightweight; small size. **Nos. 8401 and 8411:** 3 strands copper, 4 strands Copperweld® tinned, cellulose yarn braid, polyethylene insulated, tinned copper braid shield, chrome vinyl jacket. **No. 8434:** 3 strands copper, 4 strands Copperweld, tinned, polyethylene insulated, black and red conductors under Beldfoil® ISO-ShieldTM, stranded ground wire, green and clear conductors under overall Beldfoil ISO-Shield, chrome vinyl jacket. Pairs cabled on common axis to reduce diameter. **No. 8420:** Tinned cadmium bronze, cotton wrap, polyethylene insulated, cabled with fillers, rayon braid, tinned copper braid shield, chrome vinyl jacket. **No. 8723:** Tinned copper, polypropylene insulated, black and red under Beldfoil ISO-Shield, green and white under Beldfoil ISO-Shield, stranded tinned copper common drain wire, chrome vinyl jacket. Pairs cabled on common axis to reduce dia. **No. 8729:** Tinned copper, polyethylene insulated, conductors cabled, Beldfoil ISO-Shield, three 23 AWG solid tinned Copperweld, one 25 AWG stranded tinned Copperweld drain wires, white vinyl jacket. Conductors color-coded red, black, green and clear. **All Others:** Tinned copper, polyethylene insulated, conductors cabled, rayon braid, tinned copper braid shield, chrome vinyl jacket.

Belden No.	Fig.	No. of Cond.	AWG and (Stranding)	Cap.,* pF/ft.	Nom. O.D.	Net Each, Spool of						
						15′	25′	50′	100′	250′	500′	1000′
8411	G	1	25 (7 x 33)	40	.144″	$1.29	$1.85	$2.93	$ 5.55	$11.40	$22.80	$ 45.60
8401	G	1	25 (7 x 33)	25	.200″	1.58	2.15	3.78	6.90	14.55	29.05	58.05
8420†•	H	2	24 (45 x 40)	40	.185″	2.25	3.35	5.18	9.68	22.50	45.00	......
8422	I	2	22 (16 x 34)	32	.231″	1.98	3.03	5.78	10.00	21.70	43.35	86.70
8403•	I	3	20 (26 x 34)	45	.244″	2.88	......	7.45	14.05	31.15	62.25	124.50
8404•	I	4	20 (26 x 34)	40	.255″	3.11	......	......	15.10	34.30	68.50	136.95
8405•	I	5	20 (26 x 34)	40	.275″	......	......	......	......	40.15	80.20	160.35
8434	J	4	25 (7 x 33)	40	.165″	......	......	......	7.55	......	33.60	67.20
8723	K	4	22 (7 x 30)	62	.165″	......	......	......	7.65	......	33.45	66.90
8729	L	4	22 (19 x 34)	42	.265″	......	......	......	......	......	54.30	108.60

*Between one conductor and remaining conductors (if any) connected to shield. †Miniature.

75-OHM PRECISION VIDEO CABLES

High quality carrier of video signal in color or monochrome studios; 100% sweep tested.

Belden No. 8279 (Fig. M)—Has 23 (7 x 31) bare compacted conductor, polyethylene insulated, tinned copper braid shield, black polyethylene jacket. Nom. impedance, 75 ohms. Nom. capacitance, 21 pF/ft. Nom. O.D., .220″; fits RG-59/U connectors.
100′ Spool, Net......**$12.40** **250′ Spool,** Net.....**$27.00** **500′ Spool,** Net......**$54.00**

Belden No. 8281 (Fig. N)—Has 20 (solid) copper conductor, polyethylene insul., tinned copper double braid shield, black polyethylene jkt. Nom. imped., 75 ohms. Nom. cap., 21 pF/ft. Nom. O.D., .304″.
500′ Spool, Net......................**$115.15** **1000′ Spool,** Net......................**$230.25**

Belden No. 9231• (Fig. N)—Same as 8281 except gray non-contaminating vinyl jacket.
500′ Spool, Net......................**$119.85** **1000′ Spool,** Net......................**$239.70**

Belden No. 8299 Adapter—Use with PL-259 connector and 8281, 9231 cable only. Net/25... **3.86**

AUDIO, COMMUNICATION AND INSTRUMENTATION CABLES

Multiple Quads Audio and Communication Cables (**Fig. O**): Polypropylene insulation, 22 AWG (7 x 30) tinned copper, cabled in quads, Beldfoil ISO-Shield over black and red conductors, 24 AWG stranded tinned copper drain wire, clear polyester tape over entire quad, shields color-coded, chrome vinyl jacket. Nom. capacitance, 67 pF/ft. between one conductor and other conductors connected to shield. Nom. O.D., .330″ No. 8726; .450″ No. 8727. Cabled around common axis; request information before planning high and low level circuits in same cable.

Belden No. 8726•—100′ Spool, Net...**$24.80** **500′ Spool,** Net...**$113.40** **1000′ Spool,** Net...**$226.80**
Belden No. 8727•—100′ Spool, Net... **50.85** **500′ Spool,** Net... **252.00** **1000′ Spool,** Net... **504.00**

Multiple Triplets Audio, Communication and Instrumentation Cables (**Fig. P**): Tinned copper, polypropylene insulated, 22 AWG (7 x 30) conductors cabled in triplets, each shielded with Beldfoil ISO-Shield, 22 AWG stranded tinned copper drain wire, .020″ white vinyl jacket, individual triplet jackets identified by color-coded stripes, triplets cabled, overall chrome vinyl jacket. Nom. capacitance, 60 pF/ft. between one conductor and other conductors connected to shield. Insulation, .008″ th. Working voltage, 300 V suggested. Conductors color coded black, red and green.

Belden No. 9771•—21 conductors (7 triplets); .550″ nom. diameter. **500′ Spool,** Net.....**$233.40**
Belden No. 9772•—36 conductors (12 triplets); .740″ nom. diameter. **500′ Spool,** Net.... **396.00**

Telephone Cables (**Fig. B**): Bare copper 22 AWG (solid), polyethylene insulated, conductors cabled, rose gray vinyl jacket. Insulation, .016″ thick; jacket, .022″ thick.

Belden No. 8795—Two conductor color-coded red, green. Nom. O.D., .160″.
500′ Convert-a-Pak, Net..................**$12.75** **1000′ Spool,** Net..................**$25.50**

Belden No. 8794—Three conductor color-coded red, green, yellow. Nom. O.D., .168″.
500′ Convert-a-Pak, Net..................**$15.85** **1000′ Spool,** Net..................**$31.65**

Belden No. 9794—Four conductor color-coded green, red, yellow, black. Nom. O.D., .190″; jacket, .025″ th. **500′ Convert-a-Pak,** Net.............**$19.65** **1000′ Spool,** Net.............**$39.30**

®TM: Beldfoil of Belden; Copperweld of Copperweld Steel Co. •Passes the FR-1 vertical flame test.

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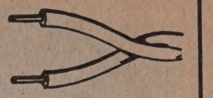

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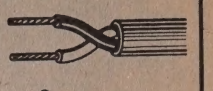

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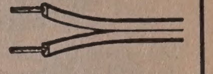

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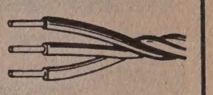

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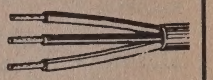

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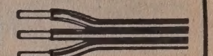

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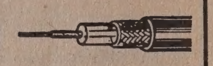

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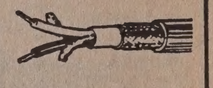

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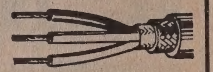

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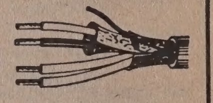

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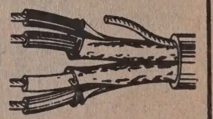

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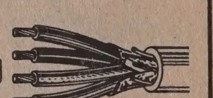

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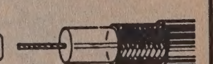

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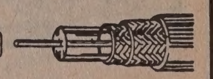

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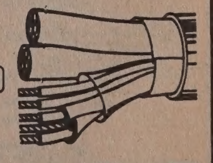

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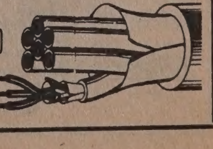
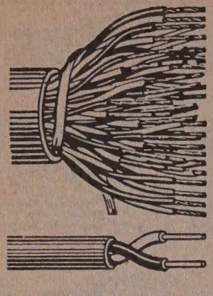


Belden Electronic Wire and Cable



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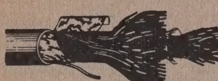

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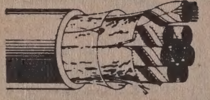


C

MULTIPLE PAIR UNSHIELDED SOUND CABLES (FIG. A)

Made with 80° C vinyl plastic compounds for high dielectric strength and best physical properties. Conductors are paired with a short-lay twist for conductor balance. Tinned copper, vinyl insulated, cabled in color-coded pairs, chrome vinyl jacket. Voltage, 200 V working except 18 gauge, 400 V.

Belden No.	No. of Pairs	AWG and (Stranding)	Nom. O.D.	Net Each, Spool of 100′	500′	1000′
8740•	1	22 (Solid)	.150″	$ 3.09	$ 11.10	$ 22.20
9740•	1	18 (16 x 30)	.220″	....	22.95	45.90
8741•	2	22 (Solid)	.201″	5.10	20.65	41.25
9744•	2	22 (7 x 30)	.230″	....	24.30	48.60
9156	2	18 (16 x 30)	.241″	....	44.40	88.80
9750	3	20 (10 x 30)	.301″	10.05	45.60	91.20
8742•	3	22 (Solid)	.240″	6.75	28.80	57.60
9745•	3	22 (7 x 30)	.280″	....	36.10	72.15
8690•	3	18 (16 x 30)	.362″	15.45	69.25	138.50
8757•	4	22 (Solid)	.255″	....	38.20	76.35
9746•	4	22 (7 x 30)	.295″	....	46.15	92.25
9157	4	18 (16 x 30)	.353″	....	83.65	167.30
9158	5	22 (Solid)	.298″	....	46.00	91.95
9159	5	18 (16 x 30)	.409″	....	111.00	222.00
9751	6	20 (10 x 30)	.370″	18.85	86.25	172.50
8743•	6	22 (Solid)	.305″	11.10	50.80	101.55
8747•	6	22 (7 x 30)	.320″	13.45	61.35	122.70
8691•	6	18 (16 x 30)	.550″	31.75	144.90	289.80
9160	8	22 (Solid)	.336″	....	71.05	142.10
9161	8	18 (16 x 30)	.469″	....	179.20	358.35
9752	9	20 (10 x 30)	.447″	27.75	130.95	261.90
8744•	9	22 (Solid)	.354″	16.35	76.05	152.10
8748•	9	22 (7 x 30)	.389″	20.10	95.10	190.20
8692•	9	18 (16 x 30)	.638″	44.60	211.35	422.70
8753•	11	22 (Solid)	.384″	20.70	98.05	196.10
9747•	12	22 (7 x 30)	.440″	....	130.95	261.90
9741•	12	18 (16 x 30)	.690″	....	280.50	561.00
8754•	13	22 (Solid)	.409″	23.10	110.70	221.40
9755	15	20 (10 x 30)	.535″	43.95	204.20	408.15
8745•	15	22 (Solid)	.420″	28.15	131.20	262.35
8749•	15	22 (7 x 30)	.455″	33.75	160.00	320.00
9742•	15	18 (16 x 30)	.800″	....	350.25	700.50
8755•	19	22 (Solid)	.480″	....	164.05	328.10
9748•	19	22 (7 x 30)	.520″	....	201.45	402.90
9743•	19	18 (16 x 30)	.880″	....	442.50	885.00
8756•	23	22 (Solid)	.510″	....	198.75	397.50
9749•	23	22 (7 x 30)	.570″	....	258.75	517.50
8746‡•	27	22 (Solid)	.550″	....	.53†	453.00
8750‡•	27	22 (7 x 30)	.595″	....	.73†	616.50

*In self-dispensing Convert-a-Pak. †Less than 1000′, per foot. ‡Available 250′, 500′, 1000′ or 2000′ spools: All spools one piece; lengths may vary +20%, −0%. •Pass FR-1 vertical flame test.

UNSHIELDED

SOUND CABLES

Belden No. 8751 (Fig. B)—51 pairs of shielded cable, #22 solid tinned copper, vinyl insulated, Beldfoil ISO-Shield™ over color-coded cabled pairs, #22 (7 x 30) stranded ground drain wire, chrome vinyl jacket. Working volts, 200. Nom. O.D., .700″. Specify length§.

1000 ft., Net......**$1182.00**
Less than 1000′, per ft. **1.38**

Belden No. 9753 (Fig. C)—Same as 8751 except: 102 pairs; nom. O.D., 1.100″. Specify length§.

1000 ft., Net......**$2287.50**
Less than 1000′, per ft. **2.67**

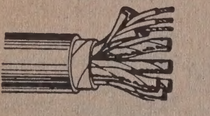
§Available 250′, 500′, 1000′ or 1500′ spools: All spools one piece; lengths may vary +20%, −0%.

Belden No. 8752 (Fig. B)—38 pairs of shielded cable, same as 8751 but polypropylene insulated. Nom. O.D., .600″. Specify length♦.

1000 ft., Net......**$1056.00**
Less than 1000′, per ft. **1.23**

♦Available 250′, 500′ or 1000′ spools: All spools one piece; lengths may vary +20%, −0%. Above cables pass FR-1 vertical flame test.

WRITE FOR COLOR CODING



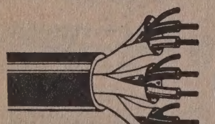
D

MULTIPLE PAIR INDIVIDUALLY SHIELDED CABLES (FIG. D)

Conductors 22 gauge vinyl or 18 and 22 gauge polypropylene insulated, cabled in color-coded pairs, each pair and its ground wire under Beldfoil® ISO-Shield (thin layer of aluminum bonded to a polyester film), overall chrome vinyl jacket. Working voltage, 300 V, 22 AWG; 350 V, 20 AWG; 400 V, 18 AWG. Nom. capacitance between conductors, 77 pF/ft., vinyl; 55 pF/ft., polypropylene. Pass FR-1 vertical flame test.

*Vinyl; all others polypropylene insulation. †All spools one piece; lengths may vary +20%, −0%.

Belden No.	No. of Pairs	AWG and (Stranding)	Nom. O.D.	Net Each, Spool of 100′	250′	500′	1000′
8767*	3	22 (Solid)	.279″	$12.55	....	$ 57.25	$ 114.50
8768*	6	22 (Solid)	.394″	25.65	....	119.55	239.10
8764*	9	22 (Solid)	.440″	34.95	....	169.95	339.90
8765*	11	22 (Solid)	.485″	42.10	....	201.75	403.50
8766*	15	22 (Solid)	.540″	58.00	....	276.25	552.50
8777	3	22 (7 x 30)	.265″	14.20	$ 33.30	66.55	133.10
8778	6	22 (7 x 30)	.394″	28.90	69.90	139.75	279.45
8774	9	22 (7 x 30)	.440″	46.65	102.45	204.90	409.80
8775	11	22 (7 x 30)	.485″	50.85	121.50	242.95	485.85
9768	12	22 (7 x 30)	.485″	55.50	130.15	260.25	520.50
8776	15	22 (7 x 30)	.540″	66.75	160.90	321.75	643.50
9769	17	22 (7 x 30)	.610″	81.70	187.50	375.00	750.00
8769	19	22 (7 x 30)	.620″	90.60	214.70	429.40	858.75
8773†	27	22 (7 x 30)	.760″	124.75	365.00	730.00	1236.00
9873	3	20 (10 x 30)	.330″	17.55	40.05	80.10	160.20
9874	6	20 (10 x 30)	.470″	35.50	81.30	162.55	325.05
9875	9	20 (10 x 30)	.530″	52.45	118.50	237.00	474.00
9876	11	20 (10 x 30)	.555″	61.65	142.50	285.00	570.00
9877	12	20 (10 x 30)	.575″	66.25	153.40	306.75	613.50
9878	13	20 (10 x 30)	.610″	70.90	164.25	328.50	657.00
9879	15	20 (10 x 30)	.650″	80.10	185.65	371.25	742.50
9773	3	18 (16 x 30)	.372″	....	....	102.85	205.65
9774	6	18 (16 x 30)	.555″	....	....	210.30	420.60
9775	9	18 (16 x 30)	.620″	....	....	317.25	634.50
9776	12	18 (16 x 30)	.765″	....	....	422.25	844.50
9777	15	18 (16 x 30)	.830″	....	....	526.50	1053.00

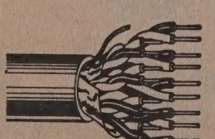


E

MULTIPLE PAIR INDIVIDUALLY SHIELDED DIRECT BURIAL, AUDIO AND DATA CABLE (FIG. E)

Especially designed for direct burial installation. Tinned copper, polypropylene insulated, Beldfoil aluminum-polyester shield over individually twisted pairs with 22 AWG stranded tinned copper drain wire, black high density polyethylene jacket.

Belden No.	No. of Pairs	AWG and (Stranding)	Nom. O.D.	Net Each, Spool of 100′	500′	1000′
9883	3	20 (10 x 30)	.340″	....	$ 84.75	$169.50
9886	6	20 (10 x 30)	.480″	....	178.50	357.00



F

MULTIPLE PAIR SHIELDED SOUND AND CONTROL CABLE (FIG. F)

Tinned copper, vinyl insulated twisted pairs, overall Beldfoil aluminum-polyester shield, stranded tinned copper drain wire, chrome vinyl jacket. UL Listed.

9302	2	22 (Solid)	.211″	$ 6.15	$ 26.05	$ 52.05
9306	6	22 (Solid)	.315″	12.55	57.25	114.45
9309	9	22 (Solid)	.364″	18.10	82.45	164.85
9315	15	22 (Solid)	.430″	31.75	146.70	293.40
9319	19	22 (Solid)	.455″	39.30	180.25	360.45
9327	27	22 (Solid)	.560″	53.20	244.95	489.90

Belden Electronic Wire and Cable

DATA AND INSTRUMENTATION CABLES

Belden No. 9640• (Fig. A)—28 AWG solid copper, Geosol™ insulated, conductors cabled, 3 conductor group (blk, red, blue) shielded from 2 conductor group (grn, wht), overall Beldfoil® ISO-Shield™, white vinyl jacket. Nom. O.D., .087″; nom. cap. between cond., 60 pF/ft. WV, 100V. **25′ Spool,** Net.......................**$2.46** **50′ Spool,** Net.......................**$4.20**

Belden No. 9784• (Fig. B)—Six pair; 24 AWG (7 x 32) stranded tinned copper, foam polypropylene insulation, cond. cabled, each pair individually Beldfoil ISO-Shielded with 24 AWG drain wire, chrome vinyl jacket. Nom. O.D., .494″; nom. cap. between cond., 12 pF/ft. WV, 60 V. **500′ Spool,** Net...................**$137.90** **1000′ Spool,** Net...................**$275.75**

Belden No. 8725• (Fig. B)—Four pair; 20 AWG (7 x 28) tinned copper cond., polypropylene insulated, four groups of 2 conductors with 22 AWG drain wire. Each group individually Beldfoil ISO-Shielded with polyester tape wrap, chrome vinyl jacket. Nom. O.D., .360″; cap. between cond., 27 pF/ft. WV, 400 V. Cabled around common axis. **500′ Spool,** Net..**$138.00** **1000′ Spool,** Net..**$276.00**

Belden No. 8700 (Fig. C)—28 AWG (Solid) tinned copper, polypropylene insul., bare copper braid shield, black vinyl jacket. Shield coverage, 91%. Nom. O.D., .054″. Nom. cap., 48 pF/ft. **25′ Spool,** Net..**$2.37** **50′ Spool,** Net..**$3.98** **100′ Spool,** Net..**$6.75** **250′ Spool,** Net..**$15.75**

Belden No. 9754 (Fig. D)—26 AWG (Solid) silver coated cadmium copper, semi-solid flame retardant polyethylene insulation, Beldfoil ISO-Shield with two silver coated cadmium copper drain wires, gray vinyl jacket. Nom. O.D., .166″. Nom. capacitance, 13.5 pF/ft. **500′ Spool,** Net...................**$35.50** **1000′ Spool,** Net...................**$70.95**

Belden No. 9272 (Fig. E)—Two 20 AWG (7 x 28) tinned copper cond., polyethylene color coded insulation, tinned copper braid shield, blue vinyl jacket. Nom. O.D., .242″; cap., 19.7 pF/ft. **100′ Spool,** Net.....**$10.05** **500′ Spool,** Net.....**$40.65** **1000′ Spool,** Net.... **$81.30**

Belden No. 9271 (Fig. F)—Two 28 (Solid) tinned copper cond., polyethylene color coded insulation, Beldfoil ISO-Shield with stranded tinned copper drain wire, blue vinyl jacket. Nom. cap., 12.2 pF /ft. 25 AWG (7 x 33); nom. O.D., .242″. **100′ Spool,** Net.....**$5.40** **500′ Spool,** Net.....**$21.60** **1000′ Spool,** Net.....**$43.20**

HI-FI, STEREO AND PHONOGRAPH CABLES

Belden No. 8430• (Fig. G)—Phono arm cable has two 32 AWG, 7 x 40 stranded, tinned copper conductors, vinyl insulated, twisted pair. O.D., .050″ nominal. Coded black, red. Capacitance, 21 pF/ft., nom. **10′ Spool,** Net........**$0.83** **25′ Spool,** Net.........**$1.17** **250′ Spool,** Net.........**$6.83**

Belden No. 9435• (Fig. G)—Same as 8430 except: Three conductors color coded blk, red, wht; O.D., .058″ nom.; capacitance between conductors 22 pF/ft. **10′ Spool,** Net........**$1.23** **25′ Spool,** Net.......**$1.76** **100′ Spool,** Net.......**$4.20**

Belden No. 9436• (Fig. G)—Same as 8430 except: Four conductors color coded blk, red, wht, grn; O.D., .065″ nom.; capacitance between conductors 22 pF/ft. **10′ Spool,** Net........**$1.52** **25′ Spool,** Net.......**$2.16** **100′ Spool,** Net.......**$5.05**

Belden No. 8429• (Fig. H)—Phono arm cable same as above, but with tinned copper braid shield. Capacitance 50 pF/ft. one conductor to other conductor and shield. Nom. O.D., .057″. **10′ Spool,** Net........**$1.17** **25′ Spool,** Net.......**$1.94** **250′ Spool,** Net.......**$13.15**

Belden No. 8419• (Fig. H)—Similar to the above but has three conductors for three-wire systems. Capacitance one cond. to other cond. and shield, 50 pF/ft. O.D., .067″ nom. Coded blk, red, wht. **10′ Spool,** Net........**$1.29** **25′ Spool,** Net.......**$2.28** **250′ Spool,** Net.... ...**$16.20**

Belden No. 9437• (Fig. H)—Same as 8429 except 4 cond. color coded blk, red, wht, grn. Nom. O.D., .072″. **10′ Spool,** Net ......**$1.62** **25′ Spool,** Net ......**$2.63** **100′ Spool,** Net **$7.90**

Belden No. 8431 (Fig. I)—Single 24 AWG, 16 x 36 stranded, tinned copper cond., rubber insul., with tinned copper braid shld. and brown cotton braid overall. O.D., .095″ nom. Cap., 96 pF/ft. nom. **10′ Spool,** Net..**$1.11** **15′ Spool,** Net..**$1.41** **25′ Spool,** Net..**$1.83** **100′ Spool,** Net..**$5.85**

Belden No. 8421 (Fig. J)—Hi-Fi connecting cable has single 25 AWG, 7 x 33 stranded of 3 strands tinned copper, 4 strands tinned Copperweld; cellular polyethylene insulated for low loss, tinned copper spiral wrapped shield and overall chrome vinyl jacket. O.D., .180″ nominal. Capacitance, 18 pF/ft., nominal. **15′ Spool,** Net......**$1.64** **25′ Spool,** Net.....**$2.21** **50′ Spool,** Net.....**$ 3.90** **100′ Spool,** Net........................**$6.53** **250′ Spool,** Net........................ **14.50**

Belden No. 8416 (Fig. K)—Stereo, language lab. Same as 8421 except: Polyethylene insulated; color coded red, clear (polarity rib on red); individually shielded. O.D., .106″ x .213″. Nom. cap., 35 pF/ft. between conductors, each channel. **15′ Spool,** Net........**$1.91** **25′ Spool,** Net.......**$ 2.37** **50′ Spool,** Net........**$4.43** **100′ Spool,** Net.......**$7.80** **250′ Spool,** Net....... **17.70**

Belden No. 8417• (Fig. L)—Min. audio connecting cable, totally shielded. Same as 8416 except single cond. with double Beldfoil ISO-Shield, inner shield folded, 26 AWG stranded tinned copper, grd. drain wire. Nom. O.D., .140″. Nom. cap., 25 pF/ft. between cond. **15′ Spool,** Net.........**$ 1.52** **25′ Spool,** Net..**$1.82** **50′ Spool,** Net..**$2.81** **100′ Spool,** Net..**$5.25** **250′ Spool,** Net.. **11.40**

Belden No. 9264 (Fig. V)—Hi-fi cable has one 24 AWG, 7 x 32 stranded conductor, flame retardant polyethylene insulated, Beldfoil aluminum-polyester shield, white vinyl jacket. Nom. O.D., .122″. Nom. impedance, 50 ohms. Nom. cap between cond's., 34 pF/ft. UL Listed. **100′ Spool,** Net. **$4.80** **250′ Spool,** Net.....**$10.20** **500′ Spool,** Net.....**$20.40** **1000′ Spool,** Net.....**$40.80**

SPECIAL AUDIO AND SOUND CABLES

Belden No. 8734• (Fig. M)—Tinned copper, vinyl insulated, 1 white coded conductor with tinned copper braid shield, 3 conductors cabled, chrome vinyl jacket; unshielded conductors coded black, red. Conductors 22 AWG, 7 x 30 stranded. O.D., .194″ nominal. Suggested 350 V working. **100′ Spool,** Net......**$6.90** **500′ Spool,** Net........**$28.20** **1000′ Spool,** Net.....**$56.40**

Belden No. 8763 (Fig. N)—Three 20 AWG, 7 x 28 stranded, tinned copper conductors polyethylene insulated; 2 conductors (black, red) shielded in Beldfoil ISO-Shield wrap; unshielded conductor coded clear, #20 stranded tinned copper ground drain wire, chrome vinyl jacket. O.D., .210″ nominal. Suggested 350 V working. **500′ Spool,** Net........**$31.65** **1000′ Spool,** Net........**$63.30**

Belden No. 8732 (Fig. O)—Four 22 AWG, 7 x 30 stranded tinned copper conductors polyethylene insulated; tinned copper braid shield over 2 (black, clear) conductors; unshielded conductors coded black, clear; overall chrome vinyl jacket. O.D., .188″ x .296″ nominal. Suggested 350 V working. **100′ Spool,** Net......**$8.63** **500′ Spool,** Net......**$35.85** **1000′ Spool,** Net.......**$71.70**

Belden No. 8722• (Fig. P)—Four 20 AWG, 7 x 28 stranded, tinned copper conductors vinyl insulated; Beldfoil ISO-Shield over 2 conductors (black, red); unshielded conductors coded green, white; #22 stranded tinned ground drain wire, chrome vinyl jkt. O.D., .230″ nom. Suggested 350 WV. Pairs cabled on common axis to reduce dia. **500′ Spool,** Net.......**$41.10** **1000′ Spool,** Net........ **$82.20**

Belden No. 8724• (Fig. P)—Same as 8722, but 22 AWG, 7 x 30 stranded, 24 AWG stranded tinned copper ground drain wire, 200 working volts; polypropylene insulated, nominal O.D., .165″. **250′ Spool,** Net......**$16.40** **500′ Spool,** Net......**$32.80** **1000′ Spool,** Net......**$65.55**

Belden No. 9155 (Fig. P)—Same as 8724 but 20 AWG, 7 x 28 shielded, and 18 AWG, 16 x 30 unshielded, 22 AWG stranded tinned copper drain wire; rose gray vinyl jacket. O.D., 256″ nominal. Suggested 300 V working **500′ Spool,** Net.................**$42.85** **1000′ Spool,** Net.................**$85.65**

Belden No. 8728 (Fig. Q)—Four 22 AWG, 7 x 30 stranded, tinned copper, polypropylene insulated, cabled in pairs, each pair has Beldfoil ISO-Shield with copper drain wire and polyester film over shields, overall Beldfoil ISO-Shield, stranded tinned copper drain wire, chrome vinyl jacket. Color coded red, blk, grn, wht. Pairs cabled on common axis to reduce diameter. O.D., .198″ nom. 400 WV, suggested. **500′ Spool,** Net................**$50.30** **1000′ Spool,** Net................**$100.60**

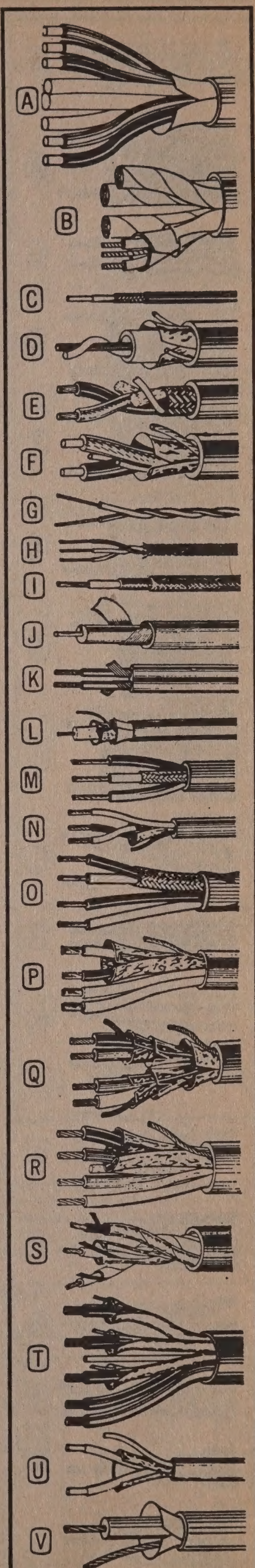
Belden No. 8730 (Fig. R)—Four 22 AWG, 7 x 30 stranded, tinned copper, polypropylene insulated; Beldfoil ISO-Shield over one pair (red, blk) with stranded tinned copper drain wire; unshielded coded green, white; chrome vinyl jacket. Pairs cabled on separate axis for reduced magnetic coupling. O.D., .230″ nom. 200 WV, suggested. **500′ Spool,** Net......**$40.95** **1000′ Spool,** Net.......**$81.90**

Belden No. 8733 (Fig. S)—Three 22 AWG, 7 x 30 stranded, tinned copper conductors, polyethylene insulated, each has separate Beldfoil ISO-Shield; ground wire for each conductor is tinned cadmium bronze ribbon under Beldfoil ISO-Shield; conductors cabled and color coded, black, red and clear. Overall chrome vinyl jacket. Nominal .205″ O.D. Suggested 350 volts working. **100′ Spool,** Net.........................**$8.20** **500′ Spool,** Net.........................**$32.55**

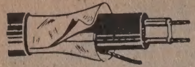
Belden No. 8788 (Fig. T)—Same as 8733 but vinyl insul., color coded blk, red, grn, plus 2 cond. unshielded, cabled around vinyl filler (yel., blue). Nom. O.D., .236″. **500′ Spool,** Net......**$56.25**

Belden No. 8640• (Fig. U)—Two 28 AWG solid copper, Geosol™ insulated, conductors cabled in pairs, Beldfoil ISO-Shield each pair, 30 AWG solid tinned Copperweld® drain wire, white vinyl jacket. Color coded blk, red. Nom. O.D., .090″; cap. between cond. 55 pF/ft. **250′ Spool,** Net.........................**$7.88** **500′ Spool,** Net.........................**$15.75**

®TM: Beldfoil of Belden; Copperweld of Copperweld Steel Corp •Passes the FR-1 vertical flame test.



Belden Electronic Wire and Cable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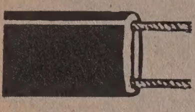
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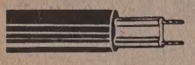
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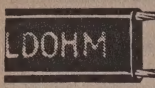

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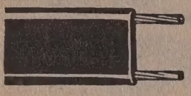
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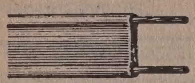
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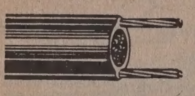
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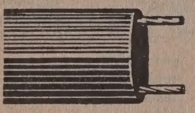
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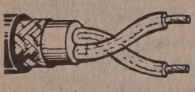
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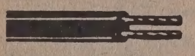
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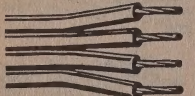
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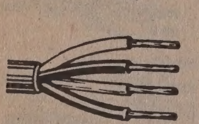
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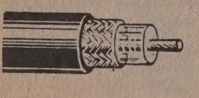
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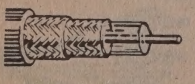
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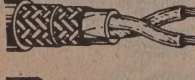
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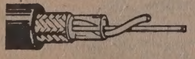
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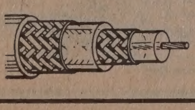
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TRANSMISSION LINE CABLES

300 OHM IMPEDANCE TWIN LEAD WIRE

No. 9090 Metro: Two 26 AWG 7 x 34 stranded Copperweld® conductors, orange polyethylene insulation and web between conductors, cellular polyethylene oval insulation, Beldfoil® ISO-Shield™, stranded tinned drain wire, brown or tan vinyl jacket. **No. 9085 Maxi:** Two 22 AWG 7 x 30 stranded Copperweld parallel conductors, cellular brown polyethylene oval jacket. **No. 8290 Permohm®:** 100% sweep tested. Two 22 AWG 7 x 30 stranded Copperweld conductors, orange polyethylene insulation and web between conductors, cellular polyethylene oval insulation, Beldfoil ISO-Shield, stranded tinned drain wire, brown polyethylene jacket. **No. 8285 Permohm:** Two 22 AWG 7 x 30 stranded Copperweld parallel conductors, orange polyethylene insulation and web between conductors, cellular brown polyethylene oval jacket. **No. 8230 Weldohm®:** Two 20 AWG 7 x 28 stranded bare Copperweld parallel conductors, brown polyethylene insulated. **No. 8225:** Two 20 AWG 7 x 28 stranded bare copper parallel conductors, brown polyethylene insulated. **No. 8226:** Same as 8225 except for indoor use only; specify ivory or clear. **No. 8275 Celluline®:** Two 20 AWG 7 x 28 stranded bare Copperweld parallel conductors, brown polyethylene jacket with inert gas filled unicellular polyethylene core. **No. 8235:** Rated 1 kW for amateur transmitting and receiving. Two 18 AWG 7 x 26 stranded bare copper parallel conductors, brown polyethylene insulated.

Belden No.	Fig.	Nominal O.D. Inch	Nominal Atten.* dB	Net Each, Coil of 25′	50′	75′	100′	Net Each, Spool of 250′	500′	1000′
9090	A	.215 x .345	6.4	$3.69	$4.99	$6.49	$ 7.79	....	$37.75	....
9085	B	.165 x .400	2.8	1.69	2.39	3.09	3.89	....	16.05	$32.10
8290	A	.305 x .515	3.5†	....	6.63	8.87	11.25	$26.55	53.10	....
8285	C	.255 x .468	2.8	....	3.39	4.50	5.70	13.65	25.60	51.15
8230	D	.072 x .400	2.2	1.08	1.56	2.10	2.61	....	12.15	22.95
8225	E	.058 x .400	2.2	1.01	1.49	1.94	2.39	....	10.95	21.00
8226	F	.058 x .400	2.2	1.01	1.49	1.94	2.39	....	....	....
8275	G	.300 x .400	2.1	....	3.11	4.23	5.31	....	24.45	48.90
8235	H	.185 x .520	2.2▲	....	....	....	6.75	....	30.60	....

*Attenuation per 100′ at 300 MHz. †At 213 MHz. ▲At 400 MHz.

SHIELDED 100-OHM IMPEDANCE LINE (FIG. I)

Belden No. 8227•—One tinned, one bare 20 AWG, 7 x 28 stranded copper conductors, polyethylene insulated, cabled, in polyethylene jacket, tinned copper braid shield with overall black vinyl jacket. O.D., .325″ nom. Cap., 15.5 pF/ft. nom. Attenuation 4.1 dB at 100 MHz, 10.2 dB at 400 MHz.
500′ Spool, Net..**$73.20**

72 OHM IMPEDANCE CABLES (FIG. J)

Belden No. 8222—Two 20 AWG 7 x 28 stranded bare copper parallel conductors, brown polyethylene insulated. O.D., .075″ x .128″. Cap., 20.3 pF/ft. nom. Attenuation 7.7 dB at 100 MHz, 15.9 dB at 400 MHz. **100′ Spool,** Net..................**$2.73** **500′ Spool,** Net..................**$11.40**

Belden No. 8210—Rated 1 kW (RF). Two 13 AWG 7 x 21 stranded bare copper parallel conductors, brown polyethylene insulated. O.D., .166″ x .278″. Cap., 21 pF/ft. nom. Attenuation, 3.8 dB at 100 MHz, 16.0 dB at 900 MHz. **100′ Spool,** Net.........**$13.95** **250′ Spool,** Net.........**$27.90**

ANTENNA ROTATOR CABLE

Fig. K Types: Bare copper, parallel. 8464 chrome vinyl insulated, 1 cond. tinned and insulation ribbed. 8463 brown polyethylene insulated, 9403 black polyethylene insulated, 1 cond. tinned. Suggested working, 200 V. **Fig. L Type::** Bare copper cond. vinyl insulated, cabled, chrome vinyl jacket. Color Coded: 1—Black, 2—Green, 3—Red, 4—White, 5—Yellow. Suggested working, 200 V; 8489, 400 V.

Belden No.	Fig.	No. Cond.	AWG and (Stranding)	Nom. O.D., Inch	Net Each, Spool of 50′	75′	100′	500′	1000′
8463	K	5	20 (7 x 28)	.070 x .375	$3.21	$4.65	$6.08	$27.55	....
8464•	K	4	20 (7 x 28)	.070 x .390	2.87	3.84	5.03	21.00	$42.00
9403	K	3	20 (7 x 28½)	.075 x .360	1.94	2.64	3.27	15.30	....
8484•	L	4	20 (7 x 28)	.180	....	....	5.25	22.65	45.30
8489‡•	L	4	18 (16 x 30)§	.250	....	....	9.75#	42.90	85.80
8485•	L	5	20 (7 x 28)	.190	....	....	6.55	28.15	56.25
8488†•	L	8	22 (7 x 30)	.205	....	....	7.50	33.40	66.75

†Color coded blk, blue, brn, grn, orange, red, wht, yel. ‡Color coded blk, wht, red, grn. §Tinned copper. #250′, **$21.45.** •Passes the FR-1 vertical flame test.

RG/U TRANSMISSION LINE CABLES

Meet JAN-C-17A specs and polyethylene insulation over conductors except as otherwise indicated.

Belden No.	Fig.	No. RG-	AWG and (Stranding)	Shields No.	Shields Type	Jacket	Nom. O.D.	Net Each, Spool of 25′	50′	100′	500′	1000′
8237•	M	8/U	13 (7 x 21) **b**	1	**b**	BV	.405″	.....	$9.55	$17.80	$ 70.95	$141.90
9251*•	M	8A/U	13 (7 x 21) **b**	1	**b**	BN	.405″	.....	.....	20.35	79.20	158.40
8242•	N	9/U	13 (7 x 21) **a**	2	**a, b**	GN	.420″	.....	.....	47.50	....	432.00
8238•	M	11/U	18 (7 x 26) **c**	1	**b**	BV	.405″	.....	.....	15.40	60.85	121.65
8261*•	M	11A/U	18 (7 x 26) **c**	1	**b**	BN	.405″	.....	.....	....	72.45	144.90
9250*•	O	22B/U	18 (7 x .0152) **d**	2	**c**	BN	.420″	.....	.....	35.20	146.35	292.65
8259	M	58A/U	20 (19 x .0071) **c**	1	**c**	BV	.195″	$2.58	3.90	7.45	26.25	52.50
8240	M	58/U	20 (Solid) **b**	1	**c**	BV	.195″	2.38	3.62	6.30	22.95	45.90
8262*	M	58C/U	20 (19 x .0071) **c**	1	**c**	BN	.195″	.....	.....	....	31.15	62.25
8241	M	59/U	22 (Solid)‡	1	**b**	BV	.242″	2.82	4.47	7.85	26.65	53.25
8263*	M	59B/U	.023 (Solid)‡	1	**b**	BN	.242″	.....	.....	....	33.00	66.00
8254	P	62/U	22 (Solid)†‡	1	**b**	BV	.242″	.....	.....	8.15	31.00	61.95
8255*	P	62B/U	24 (7 x 32)†‡	1	**b**	BN	.242″	.....	.....	....	39.60	79.20
9252*	M	122/U	22 (27 x 36) **c**	1	**c**	BN	.160″	.....	.....	7.60	29.25	58.50
8216*	M	174/U	26 (7 x 34)‡	1	**c**	BN	.100″	.....	.....	4.95	18.40	36.75
8218	M	....	27 (7 x 35)‡	1	**c**	BV	.150″	.....	.....	6.70	25.00	49.95
8267*•	M	213/U	13 (7 x 21) **b**	1	**b**	BN	.405″	.....	.....	....	79.20	158.40
8268*•	N	214/U	13 (7 x .0296) **a**	2	**a**	BN	.425″	.....	.....	....	258.90	517.80
9273*	N	223/U	19 (Solid) **a**	2	**a**	BN	.206″	.....	.....	21.70	94.50	189.00
9222	Q	....	20 (7 x 28) **c**	2	**c**	YV	.242″	.....	.....	12.40	53.40	....
9267	Q	59/U	20 (Solid) **b**	2	**b**	B	.360″	.....	.....	24.70	114.40	228.75

*MIL-C-17D spec. †Semi-solid polyethylene insulation. ‡Bare Copperweld. **a**—Silver-coated copper. **b**—Bare copper. **c**—Tinned copper. **d**—Bare copper, one cond. has tinned center strand. BN—Black non-contaminating vinyl. BP—Black polyethylene. BV—Black vinyl. GN—Gray non-contam. vinyl. YV—Yellow vinyl. B—Black neoprene. •Passes the FR-1 vertical flame test.

FOAM CORE TRANSMISSION LINE (FIG. M)

Belden No. 9221—Tinned copper 30 AWG, 7 x 38 stranded conductor, cellular polypropylene insulation, tinned copper shield, black vinyl jacket. Nom. cap., 17.4 pF/ft. O.D., .097″ nom.
25′ Spool, Net.........**$1.98** **100′ Spool,** Net.........**$5.35** **500′ Spool,** Net.........**$20.55**

Belden No. 8214•—RG-8/U for citizens' band and amateur radio as 50-ohm antenna cable. Copper 11 AWG, 7 x 19 stranded conductor, cellular polyethylene foam insulation, bare copper braid shield with black vinyl jacket overall. Nom. cap., 26 pF/ft. Vel. of propag. 78%, nom. Nom. O.D., .405″.
50′ Spool, Net......................**$10.50** **100′ Spool,** Net......................**$ 18.25**
500′ Spool, Net......................**85.60** **1000′ Spool,** Net......................**171.15**

Belden No. 8219—Same, but RG-58/AU with tinned copper 20 AWG, 19 x 32 stranded conductor, tinned copper braid shield; nom. O.D., .195″. **100′ Spool,** Net......................**$ 7.90**
500′ Spool, Net......................**$30.15** **1000′ Spool,** Net......................**60.30**

®TM: Permohm, Weldohm, Beldfoil and Celluline of Belden; Copperweld of Copperweld Steel Corp.
•Passes the FR-1 vertical flame test.

Ask Us for Quantity Prices

Belden Electronic Wire and Cable

CATV-MATV COAXIAL CABLES

All 100% sweep tested. Solid bare Copperweld® conductors are cellular polyethylene insulated. **Nos. 9233, 9234:** Duofoil® shield, black or white vinyl jacket; four spirally applied tinned Copperweld drain wires. **No. 9230:** Duofoil® shield, black vinyl jacket; four spirally applied tinned Copperweld drain wires. **No. 9235:** Same, except has .051″ galvanized steel messenger. **No. 8221:** Bare copper braid shield, gray, white or black vinyl jacket. **Nos. 8212 and 8213:** Bare copper braid shield, black polyethylene jacket. **No. 8228:** Duofoil shield, white, black, rose or gray vinyl jacket; four spirally applied tinned Copperweld drain wires. **No. 9229:** Duofoil shield, black vinyl jacket. Has .051″ galvanized steel messenger. **No. 8215:** Two bare copper braid shields, black polyethylene jacket. **Nos. 8232 and 8233:** Two bare copper braid shields, black polyethylene jacket. **No. 9244:** Bare copper braid shield with black vinyl jacket. **No. 9245:** Two Duofoil and one tinned copper braid. Has .051″ galvanized steel messenger and black vinyl jacket. **Nos. 9246 and 9247:** Two Duofoil and one tinned copper braid, black vinyl jacket. 9246 without steel messenger. **No. 9248:** Same construction as 9245 but without steel messenger. **Nos. 9242 and 9243:** Duofoil plus aluminum braid shielding; black vinyl jacket; RG-59U type. **No. 9266:** Two Duofoil and one tinned copper braid shield, black vinyl jacket. **No. 8241:** Bare copper braid shield, black vinyl jacket.

Belden No.	Fig.	AWG	O.D.	Nominal pF/ft.	Nominal Attenuation* dB	Nominal Attenuation* MHz	Net Each, Spool of 100′	Net Each, Spool of 500′	Net Each, Spool of 1000′	Net Each, Spool of 2000′
9233	A	22	.216″	16.3	6.5	500	....	**$ 20.25**	**$ 40.50**	....
9234	A	20	.225″	17.3	6.2	500	....	**21.75**	**43.50**	....
9235	B	20	†	17.3	6.2	500	....	**27.15**	**57.60**	....
8221	C	20	.242″	16.3	5.8	400	**$8.55**	**28.65**	**57.30**	....
8212	C	20	.242″	17.3	5.6	400	....	**30.30**	**60.60**	**$121.20**
8228	A	18‡	.242″	17.3	5.0	500	**7.20#**	**23.35•**	**46.65**	....
9229	B	18‡	§	17.3	5.0	500	....	**30.45**	**60.90**	....
8215	D	21	.332″	20.5	6.5	400	....	**69.10**	**138.15**	....
9230	A	14‡	.380″	17.3	3.7	500	....	**54.90**	**109.80**	....
8213	C	14‡	.405″	17.3	3.3	400	....	**77.95**	**155.85**	**311.70**
8232	E	20‡	.315″	17.3	5.6	400	....	**63.10**	**126.15**	**252.30**
8233	E	14	.475″	17.3	3.3	400	....	**111.90**	**223.80**	**447.60**
9244	C	22	.240″	21.0	7.1	400	....	**24.40**	**48.75**	....
9245	F	20	▲	17.3	6.2	500	....	**31.90**	**63.75**	....
9246	↨	20	■	17.3	6.2	500	....	**55.20**	**110.40**	....
9247	G	20	♦	17.3	6.2	500	....	**61.20**	**122.40**	....
9248	I	18	.270″	17.3	5.0	500	....	**30.55**	**61.05**	....
9242	I	22	.242″	16.3	9.0	900	....	**23.35**	**46.65**	**93.30**
9243	I	20	.242″	17.3	8.6	900	....	**24.25**	**48.45**	**96.90**
9266	I	20	.242″	17.3	5.6	400	....	**24.90**	**49.80**	....
8241	I	22	.242″	21.0	7.1	400	**7.85****	**26.65**	**53.25**	....

*Attenuation per 100′. †.225″ x .375″. ‡Bare copper. §.242″ x .380″. #Black only. •Available in self-dispensing Convert-a-Pak™; same price. ▲.242″ x .375″. ■.242″ x .515″. ♦.242″ x .660″. IFig. F less steel messenger. ↨Fig. G less messenger. ****25′ Spool,** Net..... **$2.82; 50′ Spool,** Net..... **$4.47**

COAXIAL TV CABLE

All 100% shielded, low loss foam 59/U type, 75-ohm cables for color or black and white TV installations as well as FM stereo systems. Fitted with F connectors at each end. Nos. 9357–9359, specify white or beige, indoor use; 9360–9362, black, with weatherproof boot for outdoor use.

Belden No.	Length	Net Ea., Lots of 5	Belden No.	Length	Net Ea., Lots of 5	Belden No.	Length	Net Ea., Lots of 5
9357	3′	**$1.73**	**9359**	12′	**$2.39**	**9361**	75′	**$5.55**
9358	6′	**1.98**	**9360**	50′	**3.93**	**9362**	100′	**6.25**

MISCELLANEOUS SPECIAL DUTY WIRES

Belden No. 8689• 7 mm Ignition Wire (Fig. H)—Tinned copper clad steel wire, 20 AWG, 7 x 28 stranded cond.; .120″ thk., blk. rubber insulation. Nom. O.D., .278″. Hypalon jacket. **100′ Spool,** Net.. **$9.10**

Belden No. 8868 High Voltage CRT Lead (Fig. I)—Tinned copper 22 AWG, 7 x 30 stranded, conductive polyethylene, polyethylene insulated, red vinyl jacket; extra flexible and small. Rated 50,000 V breakdown; 25,000 V working. O.D., .150″ nominal. **25′ Spool,** Net.................. **$ 1.58** **100′ Spool,** Net......................... **$4.05** **500′ Spool,** Net...................... **15.10**

Belden No. 8866 High Voltage CRT Lead (Fig. I)—Tinned copper 18 AWG, 16 x 30 stranded, conductive polyethylene, polyethylene insulated, red vinyl jacket. Rated 110 kV breakdown; 40,000 V working. O.D., .208″ nom. **25′ Spool,** Net. **$2.52** **100′ Spool,** Net. **$7.15** **500′ Spool,** Net. **$30.45**

Belden No. 8869 High Voltage CRT Lead (Fig. I)—Tinned copper 22 AWG, 7 x 30 stranded, conductive polyethylene, polyethylene insulated, black vinyl jacket. Rated 35,000 V breakdown, 17,000 V working. Nom. O.D., .120″. **25′ Spool,** Net. **$1.34** **100′ Spool,** Net. **$3.39** **500′ Spool,** Net. **$12.40**

Belden No. 8817 Litz Wire (Fig. J)—Copper 5 x 44 stranded conductor, Celenamel® insulated, nylon wrap. O.D., .008″ nominal. **100′ Spool,** Net.............................. **$0.90**

Belden No. 8014• Indoor Aerial Wire (Fig. K)—Tinned copper 25 AWG, 13 x 36 stranded, chrome vinyl insulation. O.D., .044″ nom. **25′ Spool,** Net.......... **$0.96** **500′ Spool,** Net.......... **$5.25**

®TM: Celenamel, Duofoil, Beldfoil of Belden; Copperweld of Copperweld Steel Co.; Hypalon of DuPont.
•Passes the FR-1 vertical flame test.

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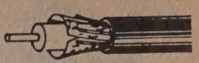

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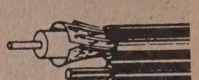

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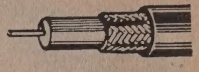

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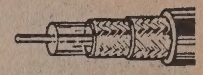

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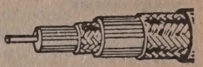

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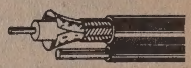

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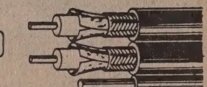

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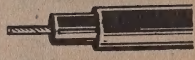

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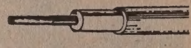

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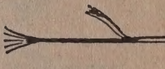

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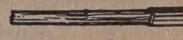


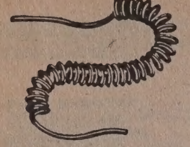
MAGNET WIRE

Single Beldsol®: Dual film insulated magnet wire combines the excellent dielectric characteristics of polyurethane and toughness and solvent resistance offered by an overcoat of nylon. Rated by IEEE tests for 130° C usage and will solder without insulation removal at 750° F. Complies with MIL-W-583 specs. 40 AWG is Beldure® 105° C polyurethane film. **Heavy Armored Poly-Thermaleze:** Dual coated magnet wire. Base coat cross-linked, modified polyester: top coat amide-imide polymer; rated for 180° C usage. Exceptional ability to resist solvents and abuse in difficult windings. Complies with MIL-W-583 specs. 36, 38 and 40 AWG 180° C single polyester-imide, blue color.

	Single Beldsol®						Heavy Poly-Thermaleze									
	¼ lb. Spool			½ lb. Spool			½ lb. Spool			1 lb. Spool			3 and 5 lb. Spools			
Size	**Belden No.**	**Lgth., Ft.**	**Net Each**	**Belden No.**	**Lgth., Ft.**	**Net Each**	**Belden No.**	**Lgth., Ft.**	**Net Each**	**Belden No.**	**Lgth., Ft.**	**Net Each**	**Belden No.**	**Spool Lbs.**	**Lgth. Ft.**	**Net Each**
14	......	......	....	**8047**	40	**$1.83**	**8059**	40	**$1.83**	**8073**	80	**$3.12**	**9040**	5	410	**$15.90**
16	......	......	....	**8048**	63	**1.83**	**8060**	63	**1.86**	**8074**	126	**3.24**	**9041**	5	630	**16.45**
18	......	......	....	**8049**	100	**1.86**	**8061**	100	**1.89**	**8075**	199	**3.39**	**9042**	5	995	**17.20**
20	......	......	....	**8050**	160	**1.86**	**8062**	157	**1.92**	**8076**	315	**3.39**	**9043**	5	1570	**17.20**
22	......	......	....	**8051**	254	**1.86**	**8063**	250	**1.94**	**8077**	501	**3.39**	**9044**	5	2500	**17.20**
24	......	......	....	**8052**	404	**1.89**	**8064**	396	**2.03**	**8078**	793	**3.47**	**9045**	3	2380	**10.65**
26	......	......	....	**8053**	645	**1.97**	**8065**	630	**2.10**	**8079**	1260	**3.69**	**9046**	3	3770	**11.25**
28	**8040**	510	**$1.32**	**8054**	1020	**2.06**	**8066**	995	**2.27**	**8080**	1990	**4.05**	**9047**	3	5970	**12.15**
30	**8041**	807	**1.40**	**8055**	1615	**2.28**	**8067**	1570	**2.51**	**8081**	3140	**4.58**	**9048**	3	9430	**13.65**
32	**8042**	1257	**1.55**	**8056**	2515	**2.54**	**8068**	2440	**2.70**	**8082**	4880	**4.95**	......	......	......	....
34	**8043**	2030	**1.61**	**8057**	4060	**2.72**	**8069**	3930	**3.02**	**8083**	7860	**5.80**	......	......	......	....
36	**8044**	3200	**1.79**	**8058**	6400	**3.09**	**8070**	6200	**3.56**	**8084**	12400	**6.98**	......	......	......	....
38	**8045**	5070	**2.27**	......	......	....	**8071**	9700	**4.20**	**8085**	19400	**8.35**	......	......	......	....
40	**8046**	8050	**3.05**	......	......	....	**8072**	16050	**5.15**	**8086**	32100	**10.95**	......	......	......	....

®TM: Beldsol and Beldure of Belden.

Belden Electronic Wire and Cable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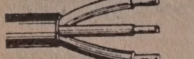
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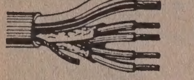
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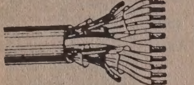
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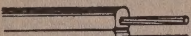
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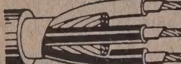
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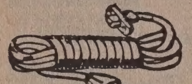
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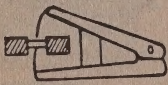
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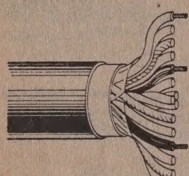

I

STRIP-IT TOOL (FIG. H)

Belden No. 8196—A precision tool, simple in design and foolproof in operation. Indispensable for electronic technicians, assemblers and electricians. Adjustment bar set with a touch of the finger. Engineered for thousands of operations with one set of blades. Can also be used to cut small size wires.
Net Each............. **$2·94**

CB-AMATEUR RADIO COAXIAL CABLE

Individually packaged and fitted with PL-259 connectors on both ends, RG 58A/U (Models 9350 thru 9352), or 8/U (all others) cables for use with two way systems. Low loss foam; 50 ohms impedance. Outer diameter, .195″ for RG 58A/U, and .405″ for 8/U. All in black color.

Belden No.	Length	Net Each
9350	15′	$ 3·69
9351	25′	4·20
9352	50′	5·50
9353	25′	7·50
9354	50′	10·65
9355	75′	14·80
9356	100′	18·40

®TM: Beldfoil of Belden; Copperweld of Copperweld Steel Co.

RETRACTILE CABLES AND CORDS (FIG. A)

MICROPHONE CABLES

No. 8409: Tinned copper, nylon insulated, neoprene jacket. **Nos. 8415, 8490, 9415:** Five strands TCW, 16 strands TC, rubber insulated, paper tape, neoprene jacket. **No. 8499:** Tinned cadmium bronze, rubber insulated, spiraled TC shield, cotton wrap, neoprene jacket. **No. 8605:** Tinned copper, polypropylene insulated, spiraled TC shield, gray PVC jacket. **All Others:** Five strands TCW, 16 strands TC, rubber insulated, double Beldfoil® Iso-Shield™ with drain wire same as conductors, paper tape, neoprene jacket. **Conductor Color Coding: 1,** white; **2,** black; **3,** red; **4,** green; **5,** blue. Capacitance given is of shielded conductor.

Belden No.	Conductors	AWG and (Stranding)	Nominal O.D.	Nominal Coil O.D.	Nominal Cap. pF/Cord	Length Retr.	Length Ext.	Net Each per Standard Put-Up 1	Net Each per Standard Put-Up 15
8409	4 unshielded	28 (7 x 36)	.165″	9/16″	....	12″	6′	$1.56	....
8415	4 unshielded	23 (21 x 36)	.250″	7/8″	....	11½″	6′	1.82	$81.55*
9415	4 unshielded	23 (21 x 36)	.250″	7/8″	....	30″	15′	3.90	50.85
8499	1 shielded	24 (45 x 40)	.170″	1 1/16″	285	7½″	4′	1.32	....
8605	1 shielded	24 (19 x 36)	.160″	1 1/16″	680	21½″	12′	1.98	....
8497	1 shielded,	23 (21 x 36)	.250″	7/8″	510	11½″	6′	1.98	83.05*
9417	2 unshielded	23 (21 x 36)	.250″	7/8″	1200	30″	15′	4.15	51.60
8491	2 ind. shielded,	23 (21 x 36)	.275″	1 1/16″	510	12″	6′	2.30	....
9416	2 unshielded	23 (21 x 36)	.275″	15/16″	1200	30″	15′	5.40	71.65
8490	5 unshielded	23 (21 x 36)	.265″	7/8″	....	11½″	6′	1.98	....

*Standard Put-Up of 50.

NEOPRENE POWER CONTROL CABLES

Bare copper, paper wrap, rubber insulation, cabled with fillers, paper tape wrap, black neoprene jacket. Straight portion 12″ each end (except 6″ on 8601, 8602, 8603). **Jacket:** .045″ thick; removed 1½″ each end. **Color Coding: 1,** white; **2,** black; **3,** green; **4,** red.

Belden No.	No. of Cond.	Type	AWG and (Stranding)	Nominal O.D.	Nominal Coil O.D.	Length Retr.	Length Ext.	Net Each per Standard Put-Up 1	Net Each per Standard Put-Up 15
8601	2	SVO	18 (41 x 34)	.270″	15/16″	12″	6′	$1.52	....
9476	2	SVO	18 (41 x 34)	.270″	15/16″	24″	12′	2.78	$33.90
9477	2	SVO	18 (41 x 34)	.270″	15/16″	48″	25′	4.45	55.20
9478	3	SVO	18 (41 x 34)	.275″	15/16″	24″	12′	3.47	43.95
9479	3	SVO	18 (41 x 34)	.275″	15/16″	48″	25′	6.00	80.95
8602	3	SJO	18 (41 x 34)	.360″	1⅜″	12″	6′	2.30	....
9480	3	SJO	18 (41 x 34)	.360″	1⅜″	24″	12′	4.01	....
9481	3	SJO	18 (41 x 34)	.360″	1⅜″	48″	25′	6.70	....
8603	3	SJO	16 (65 x 34)	.370″	1 7/16″	12″	6′	2.34	....
9484	3	SJO	16 (65 x 34)	.370″	1 7/16″	24″	12′	4.55	....
9485	3	SJO	16 (65 x 34)	.370″	1 7/16″	48″	25′	7.80	....
9482	4	SJO	18 (41 x 34)	.385″	1 7/16″	24″	12′	4.62	....
9483	4	SJO	18 (41 x 34)	.385″	1 7/16″	48″	25′	7.80	....

VINYL TELEPHONE CORDS

8495: Bare cadmium bronze, vinyl insulated, conductors cabled, paper wrapped, black vinyl jacket. One end stripped 2¾″, spade terminals attached and hook strain relief clamped over jacket. Other end stripped 3 7/16″ and spade terminals attached. **Color Coding: 1,** white; **2,** black; **3,** red. **All Others:** Tinsel conductors, vinyl insulated, vinyl jacket. One end stripped 7″, spade terminals attached and hook strain relief clamped over jacket. Other end has red and black conductors pulled out of jacket and cut to 3″ length, spade terminals attached, molded plastic strain relief, 6¾″ jacket remains on two white conductors, spade terminals attached. Jacket available in black, light beige or white; 8495 black only.

Belden No.	No. of Cond.	Type	AWG and (Stranding)	Nominal O.D.	Nominal Coil O.D.	Length Retr.	Length Ext.	Net Each per Standard Put-Up 1	Net Each per Standard Put-Up 15
8495	3	....	23 (21 x 36)	.220″	7/8″	10″	4½′	$1.83	....
9443	4	....	31 (Tinsel)	.195″	¾″	10½″	5′	2.78	$36.25
9440	4	....	31 (Tinsel)	.195″	¾″	22″	10′	3.47	44.70
9441	4	....	31 (Tinsel)	.195″	¾″	33″	15′	4.47	58.60
9442	4	....	31 (Tinsel)	.195″	¾″	48″	25′	5.40	72.10

JUKE BOX CABLES

No. 8783: Tinned copper, vinyl insul., cabled, chrome vinyl jacket. **No. 8786:** Tinned copper, vinyl insulated, 4 conductors, cabled under Beldfoil ISO-Shield; 2 unshld. cond., 22 AWG drain wire; chrome vinyl jacket. **No. 8787:** Tinned copper; 8 polyethylene insulated cond., cabled in 2 quads each has transparent polyester tape wrap and tinned copper wire, with Beldfoil ISO-Shield color coded red, green; 2 vinyl insulated conductors; chrome vinyl jacket. **No. 8784:** 10 unshielded, tinned copper conductors, color coded vinyl insulation, cabled, chrome vinyl jacket. Pass FR-1 flame test.

Belden No.	Fig.	No. Cond.	AWG and (Stranding)	Nom. O.D.	WV	Net Each, Spool of 100′	Net Each, Spool of 500′
8783	B	3	1-20 (10x30), 2-16 (26x30)	.250″	450	$8·80	$38·75
8786	C	6	2-22 (7x30), 4-24 (7x32)	.256″	350	9·60	43·80
8787	D	10	8-24 (7x32), 2-22 (7x30)	.290″	350	....	84·25
8784	....	10	2-16 (26x30), 1-20 (10x30), 7-22 (7x30)	.295″	300	....	78·90

MULTI-CONDUCTOR PORTABLE CORDAGE

No. 8480 (**Fig. I**)—SJT type low leakage power cord. Bare stranded copper polyethylene insulated, cabled with low dielectric fillers, low dielectric inner jacket, vinyl outer jacket. UL Listed.
Nos. 8462 and 8888 (**Fig. E**)**:** Two conductors, stranded copper, parallel, insulated with one conductor polarity ribbed. **All Others:** (**Fig. F**)**:** Stranded copper, rubber insulated, cabled with fillers, black rubber jacket. **Color-coded:** Black and white except as noted.

Belden No.	UL Type	No. Cond.	AWG and (Stranding)	Nominal O.D.	Net Each, Spool of 25′	50′	100′	250′	500′	1000′
8480	SJT	3‡	16 (65 x 34)	.580	.....	.....	$51.75	$107.65	$215.25	$430.50
8462*	SP-1	2	18 (41 x 34)•	.123″ x .223″	$1.76	.....	5.31	12.60	....	....
8888†	SPT-1	2	18 (41 x 34)	.110″ x .207″	1.71	.....	4.80	10.20	....	....
8452	SV	2	18 (41 x 34)	.245″	.....	$4.58	8.18	18.30	36.55	73.05
8478	SJ	2	18 (41 x 34)	.298″	.....	.....	9.00	21.45	....	85.50
8472	SJ	2	16 (65 x 34)	.325″	.....	.....	12.45	29.20	....	....
8474	....	2	14 (41 x 30)	.360″	.....	.....	15.70	37.80	....	....
8453	SV	3‡	18 (41 x 34)•	.265″	.....	5.78	11.20	....	52.95	....
8479	....	3‡	14 (41 x 30)	.380″	.....	.....	18.40	44.85	....	....
8454	....	4§	18 (41 x 34)•	.265″	.....	6.60	12.60	....	57.90	115.95
8455	....	5#	3-20 (26 x 34)• 2-18 (41 x 34)•	.280″	.....	.....	12.45	31.45	....	....

Specify: *Brown or ivory rubber; †Brown, ivory or gray vinyl. ‡Black, white, green. §Black, white, brown, red. #Brown, green, white, black, red. •Tinned.

TELEVISION AND SERVICEMAN CORDS (FIG. G)

No.	Description	Each	No.	Description	Each
8874	6′ SP-1 brown rubber, male TV plug	$0·89	8889	9′ SPT-1 brn. plastic, male TV plug	$0·69‡
8895	6′ SPT-1 brn. plastic, male TV plug	.59*	8875	6′ SPT-1 red plastic extension	.62
8873	Same as 8895 but polarized	.65†			

Available in bulk, 100-pack: ***$32·65; †$36·90; ‡$38·65.**

ALUMINUM GROUND WIRE

Belden No. 8018 (Not Illus.)—Solid 8 AWG soft annealed aluminum wire packaged in counter dispensers of ten 50 ft. connected coils, or spools of 500 ft. lengths. Spooled wire marked every 100 ft.
50′ Coil, Net.......................... **$1·44** **500′ Spool,** Net.................... **$11·70**

Belden Electronic Wire and Cable

9 NEW CLOSED CIRCUIT TELEVISION CABLES THAT ANSWER MOST CCTV AND VTR CABLE APPLICATION NEEDS

Belden No. 9254• (Fig. A)—13-conductor camera extension cable. Recommended for remote control, closed circuit and cue line applications. Has two 20 AWG (10 x 30) tinned copper, vinyl insulated, color coded conductors. Nine 22 AWG (7 x 30) tinned copper, vinyl insulated, 2 conductors cabled, Beldfoil® shield, 2 conductors cabled unshielded, 5 conductors unshielded. Two foam polypropylene insulated coaxial cables. Nominal impedance, 75 ohms, color coded. Tinned copper braid shield. Chrome vinyl jacket. .550″ nominal O.D. UL Listed, Style 2497.
100 ft., Net. . . . .**$57.40** **250, 500 or 1000 ft.,** Net per 1000 ft. **$562.50**

Belden No. 9255 (Fig. B)—4-conductor video monitor and extension cable, an excellent replacement for Sony, Panasonic, Concord, Dage and other original equipment cables. Has one 20 AWG (16 x 32) tinned copper, polyethylene insulated conductor; one 28 AWG (7 x 36) tinned copper, vinyl insulated, tinned copper spiral wrapped shield, vinyl jacket conductor. One 50-ohm coax, 27 AWG (7 x 35) tinned copper conductor, foam polyethylene insulation, tinned copper braid shield. One 50-ohm coax, 27 AWG (7 x 35) tinned copper conductor, polyethylene insulation, tinned copper braid shield. Overall black vinyl jacket, .225″ nominal O.D.
50 ft., Net. .**$12.60** **100 ft.,** Net. .**$21.00** **500 ft.,** Net. .**$87.75** **1000 ft.,** Net. .**$175.50**

Belden No. 9256 (Fig. C)—4-conductor video monitor and extension cable is an excellent replacement for original equipment cables. Has two 24 AWG (7 x 32) tinned copper, vinyl insulated, tinned copper spiral wrapped shield, vinyl jacket conductors. Two 50-ohm coax, 25 AWG (7 x 33) bare copper conductor, polyethylene insulation, bare copper braid shield, vinyl jacket, one black, one white. Overall black vinyl jacket, .310″ nominal O.D.
50 ft., Net. .**$15.55** **100 ft.,** Net. .**$26.05** **500 ft.,** Net. .**$108.00** **1000 ft.,** Net. .**$216.00**

Belden No. 9257 (Fig. D)—7-conductor camera extension cable for replacement of original equipment cables. Has one 50-ohm coax, 27 AWG (7 x 35) tinned copper conductor, polyethylene insulation, tinned copper braid shield, polyester tape wrapped. One 28 AWG (7 x 36) tinned copper, vinyl insulation, bare copper spiral wrapped shield, black vinyl jacket conductor. Four 27 AWG (7 x 35) tinned copper conductors, vinyl insulated. One 24 AWG (7 x 32) tinned copper conductor, vinyl insulated. Overall gray vinyl jacket, .245″ nominal O.D.
50 ft., Net. .**$13.60** **100 ft.,** Net. .**$22.50** **500 ft.,** Net. .**$94.05** **1000 ft.,** Net. .**$188.10**

Belden No. 9258 (Fig. E)—8-conductor video, audio and power extension cable. Excellent replacement for original equipment cables. Has six 22 AWG (16 x 34) tinned copper conductors, vinyl insulated. One 50-ohm coax, 30 AWG (7 x 38) tinned copper conductor, polyethylene insulated, bare copper braid shield, polyester tape wrapped. One 22 AWG (16 x 34) tinned copper conductor, vinyl insulated, tinned copper braid shield, polyester tape wrapped. Overall black vinyl jacket, .225″ nominal O.D.
50 ft., Net. .**$14.10** **100 ft.,** Net. .**$23.50** **500 ft.,** Net. .**$97.80** **1000 ft.,** Net. .**$195.60**

Belden No. 9259 (Fig. F)—RG-59 type coax cable with stranded center conductor. Recommended for camera to recorder to monitor connections. Stranded center conductor adds the flexibility needed to resist severe twisting, bending and other stresses which occur in many CCTV applications. Has 22 AWG stranded bare copper conductor, cellular polyethylene insulation, bare copper braid shield, black vinyl jacket, 75 ohm, .242″ nominal O.D. UL Listed, Style 1354.
50 ft., Net. . .**$5.05** **100 ft.,** Net. . .**$8.50** **500 ft.,** Net. . .**$29.95** **1000 ft.,** Net. . .**$59.85**

Belden No. 9260 (Fig. G)—6-conductor shielded remote control cable. Recommended for applications where remote switching of video camera function is required. Six 20 AWG (7 x 28) tinned copper conductors, vinyl insulated, black, white, red, green, orange, blue. Overall tinned copper braid shield. Overall gray vinyl jacket, .305″ nominal O.D. UL Listed, Style 2464.
50 ft., Net. .**$11.85** **100 ft.,** Net. .**$19.75** **500 ft.,** Net. .**$81.15** **1000 ft.,** Net. .**$162.30**

Belden No. 9261 (Fig. H)—12-conductor shielded remote control cable. Recommended for applications where remote switching of video camera function is required. Has twelve 20 AWG (7 x 28) tinned copper conductors, vinyl insulated, color coded. Overall tinned copper braid shield. Overall gray vinyl jacket, .410″ nominal O.D. UL Listed, Style 2464.
50 ft., Net. .**$20.55** **100 ft.,** Net. .**$32.85** **500 ft.,** Net. .**$137.25** **1000 ft.,** Net. .**$274.50**

Belden No. 9262 (Fig. I)—13-conductor remote control and video cable. Recommended for use in installations requiring external drive signals, tallies, intercom, switching and video operations. Has twelve 20 AWG (7 x 28) tinned copper conductors, vinyl insulated, color coded. One 75-ohm coax, 22 AWG stranded bare copper conductor, foam polyethylene insulated, bare copper braid shield, polyester tape wrapped. Overall tinned copper braid shield. Overall gray vinyl jacket, .425″ nominal O.D. UL Listed.
50 ft., Net. .**$27.10** **100 ft.,** Net. .**$45.70** **500 ft.,** Net. .**$190.50** **1000 ft.,** Net. .**$381.00**

Belden No. 9265 (Fig. M)—Siamese type cable, RG59/U type and twisted pair. RG59/U has 1 conductor 22 AWG BC coax with cellular polyethylene insulation, bare copper shield. Nom. impedance, 75 ohms. Twisted pair is 2 conductor, 22 AWG TC with vinyl insulation, Beldfoil aluminum-polyester shield, black vinyl jacket. Nom. O.D., .242″ x .445″.
500 ft., Net. . . . .**$62.40** **1000 ft.,** Net. **$124.80**

TV CAMERA CABLES

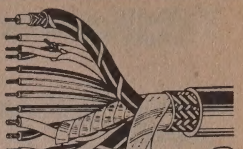
Belden No. 8280• (Fig. J)—28-conductor camera cable. Four 18 AWG (16 x 30) tinned copper, vinyl insulated, color coded; 21-22 AWG (7 x 30) tinned copper, vinyl insulated, cabled in 3 groups of 7, color coded; 3 coaxial cables color coded, nominal impedance 51 ohms; tinned copper braid shield; chrome vinyl jacket .750″ nom. O.D.
100 ft., Net. . . . .**$107.40** **250, 500 or 1000 ft.,** Net per 1000 ft. **$1071.00**

Belden No. 8286•—Similar to above, but nom. impedance 75 ohms. Additionally, the group of four 18 AWG and a group of seven 22 AWG conductors are separately wrapped with Beldfoil ISO-Shield with stranded drain wire and polyester tape over each group. Jacket is black Hypalon®, .730″ O.D.
100 ft., Net. . . . .**$107.40** **250, 500 or 1000 ft.,** Net per 1000 ft. **$1072.50**

Belden No. 9253•—Recommended for transistorized TV cameras. UL listed. Similar to Fig. G except with shield. 28-conductor TV camera cable has four 18 AWG (16 x 30) tinned copper, vinyl insulated, color coded conductors, Beldfoil® ISO-Shield around 4 conductors with stranded drain wire, polyester tape over this shielded group. 21-22 AWG (7 x 30) tinned copper, vinyl insulated, cabled in three groups of 7, color coded, one group of 7 has Beldfoil ISO-Shield overall with a stranded drain wire, polyester tape over this shielded group. Three coaxial cables, nom. impedance 75 ohms. RG 59/U type with foam polypropylene insulation. Tinned copper braid shield, chrome vinyl jacket .810″ nom. O.D.
100 ft., Net. . . . .**$123.35** **250, 500 or 1000 ft.,** Net per 1000 ft. **$1230.00**

Belden No. 8282• (Fig. K)—13-conductor TV eye cable. Eight 22 AWG (7 x 30) tinned copper, vinyl insulated, color coded; one 22 AWG (7 x 30) polyethylene insulated; two 18 AWG (16 x 30) tinned copper conductors, vinyl insulated, black and red; one RG-58A/U 50-ohm coax cable, one 72-ohm coax, stranded conductor, polyester tape wrapped, chrome vinyl jacket .470″ nom. O.D.
100 ft., Net. . . . .**$47.40** **250, 500 or 1000 ft.,** Net per 1000 ft. **$466.50**

®TM: Beldfoil of Belden. •Passes FR-1 vertical flame test.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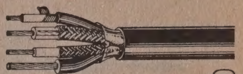
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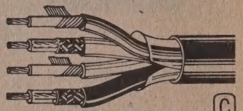
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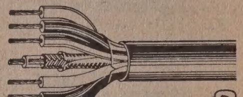
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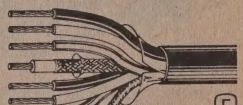
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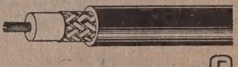
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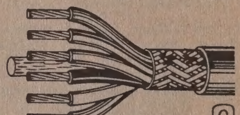
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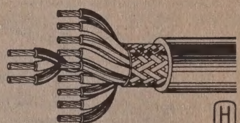
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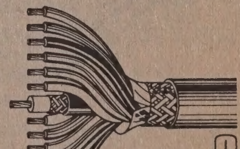
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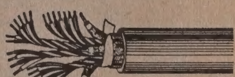
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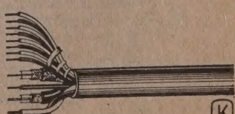
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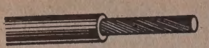
Belden Electronic Wire and Cable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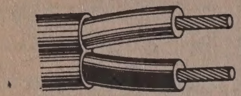
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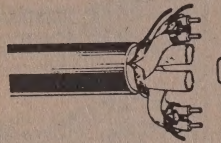
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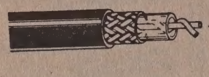
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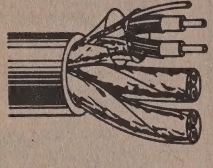
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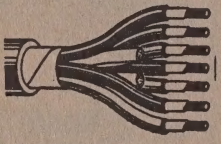
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PRIMARY WIRE, MARINE AND AUTO

Bare copper, vinyl insulated. S.A.E. type G.P.T.

Belden No.	Fig.	AWG and (Stranding)	Nom. O.D.	Color Code	Net Each, Spool of 100′	Net Each, Spool of 500′
8685	A	16 (19 x 29)	.102″	Black	$ 3.69	....
8684	A	14 (19 x 27)	.117″	Green	4.80	....
8683	A	12 (19 x 25)	.142″	Red	6.75	....
8682	A	10 (19 x 23)	.175″	White	9.70	....
8681	A	8 (19 x 21)	.219″	Chrome	19.50	....
8680	A	6 (37 x 21)	.290″	Chrome	30.45	....

DUPLEX PRIMARY WIRE

Tinned copper, vinyl insulated, conductors parallel, chrome vinyl jacket.

8677	B	16 (19 x 29)	.164″ x .276″	Brn, Red	$ 7.65	$36.30
8675	B	14 (19 x 27)	.189″ x .326″	Brn, Red	9.70	46.65
8673	B	12 (19 x 25)	.213″ x .384″	Brn, Red	13.35	67.10
8678	B	10 (19 x 23)	.243″ x .436″	Brn, Red	21.00	99.30

DATA, INSTRUMENTATION AND COMPUTER CABLES

Belden No. 9851 (Fig. C)—200 ohm video twinax. Two conductor, 29 AWG solid silver coated Copperweld. Cellular flame retardant polyethylene insulation. Beldfoil shield, overall. Chrome vinyl jacket. Nom. O.D., .245″. UL Listed, Style 2606.
100′ Spool, Net. . .**$9.25** **500′ Spool,** Net. . .**$42.40** **1000′ Spool,** Net. . .**$84.75**

Belden No. 9852 (Fig. C)—Dual 200 ohm video twinax. Same as 9851 but four conductor. Nom. O.D., .490″.
100′ Spool, Net. .**$30.55** **500′ Spool,** Net. .**$143.25** **1000′ Spool,** Net. .**$286.50**

Belden No. 9269 (Fig. D)—IBM No. 323921. Type 62A/U. 22 AWG solid bare Copperweld. Semi-solid polyethylene insulation. Bare copper shield. Black, non-contaminating vinyl jacket. Nom. O.D., .242″. UL Listed, Style 1354.
500′ Spool, Net. .**$37.45** **1000′ Spool,** Net. .**$74.85** **2000′ Spool,** Net. .**$149.70**

Belden No. 9268 (Fig. D)—IBM No. 5252750. Type 62A/U. 22 AWG solid bare Copperweld. Semi-solid flame retardant polyethylene insulation. Bare copper shield. Black vinyl jacket. Nom. O.D., .264″. UL Listed, Style 1354.
500′ Spool, Net. .**$47.80** **1000′ Spool,** Net. .**$95.55** **2000′ Spool,** Net. .**$191.10**

COPPER TAPE SHIELDED PAIRED CABLES

Belden No. 9853 (Fig. E)—Six conductors (3 pairs). 22 AWG solid. Tinned copper, vinyl insulated with nylon over. Copper foil tape shielded twisted pairs, chrome vinyl jacket. Similar to MIL-C-23437, except copper foil shield in place of copper braid. Nom. O.D., .299″. Working voltage, 300 V. Color conductors. **100′ Spool,** Net. . . . .**$ 27.70**
250′ Spool, Net. .**$64.15** **500′ Spool,** Net. .**$128.25** **1000′ Spool,** Net. . **256.50**

Belden No. 9856 (Fig. E)—Same as 9853, but twelve conductors (6 pairs). Nom. O.D., .450″. **100′ Spool,** Net. . . . .**$54.00** **250′ Spool,** Net. **$123.20**
500′ Spool, Net. . . . .**$246.40** **1000′ Spool,** Net. **492.75**

MULTIPLE UNPAIRED TYPE SO NEOPRENE CONTROL CABLES (FIG. F)

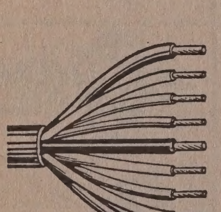
General purpose industrial and utility control applications, remote control of automatic electric equipment and motor control. Heavy duty neoprene jacket offers excellent resistance to oils, acids, oxidation, weathering, ozone abrasion and impact. Bare copper, 16 AWG (65 x 34), rubber insulated, conductors cabled with fillers, black neoprene jacket. Suggested Working Voltage: 600 V.
Color Coding available on request.

Beld. No.	*	Nom. O.D.	Net Each, Spool of 100′	Net Each, Spool of 500′	Net Each, Spool of 1000′
9420	5	.520″	$ 33.15	$160.95	$321.90
9422	7	.560″	43.15	211.80	423.60
9424	9	.620″	55.50	269.65	539.25
9425	12	.720″	74.70	368.25	736.50
9427	16	.800″	94.60	462.75	925.50
9429	20	.880″	115.60	576.00	1047.00

*No. of conductors.

MULTIPLE UNPAIRED CONTROL AND AUDIO CABLES

Tinned copper, vinyl insulated, conductors cabled, chrome vinyl jacket. Suggested Working Voltage: 22 AWG, 200 V; 18 AWG, 400 V; 16 AWG and 14 AWG, 600 V. **Color Coding available on request.**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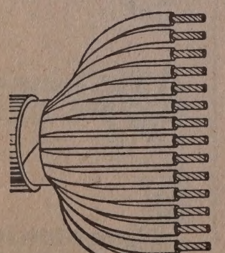
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Belden No.	Fig.	No. of Cond.	AWG and (Stranding)	Nom. O.D.	Net Each, Spool of 15′	25′	100′	250′	500′	1000′
8443	G	3	22 (7 x 30)	.150″	.....	$1.52	$ 4.00	$ 8.10	$ 16.15	$ 32.25
8444	G	4	22 (7 x 30)	.168″	.....	1.73	5.25	10.90	21.70	43.80
8445	G	5	22 (7 x 30)	.180″	.....	2.09	6.15	13.15	26.20	52.35
9430	G	7	22 (7 x 30)	.200″	.....	.....	.....	.....	33.15	66.30
8456	G	10	22 (7 x 30)	.260″	.....	.....	11.95	.....	54.25	108.45
8457	G	12	22 (7 x 30)	.260″	.....	.....	13.45	.....	61.75	123.45
8458	G	15	22 (7 x 30)	.320″	.....	.....	22.25	.....	99.00	198.00
9431	G	20	22 (7 x 30)	.345″	.....	.....	.....	.....	122.95	245.85
8459	G	25	22 (7 x 30)	.370″	.....	.....	34.95	.....	160.50	321.00
9432	G	30	22 (7 x 30)	.400″	.....	.....	.....	.....	176.40	352.80
9433	G	40	22 (7 x 30)	.455″	.....	.....	.....	.....	233.25	466.50
9434	G	50	22 (7 x 30)	.500″	.....	.....	.....	.....	291.00	582.00
9444	G	4	20 (10 x 30)	.208″	.....	.....	6.60	.....	29.10	58.20
9445	G	5	20 (10 x 30)	.230″	.....	.....	8.05	.....	35.25	70.50
9439	G	7	20 (10 x 30)	.250″	.....	.....	10.80	.....	47.80	95.55
9455	G	9	20 (10 x 30)	.310″	.....	.....	14.35	.....	64.30	128.55
9457	G	12	20 (10 x 30)	.330″	.....	.....	17.55	.....	80.85	161.70
9458	G	15	20 (10 x 30)	.380″	.....	.....	23.15	.....	107.70	215.40
8446	G	6	4-22 (7 x 30) 2-18 (16 x 30)	.222″	2.09	.....	9.10	20.10	40.15	80.25
8447	G	7	5-22 (7 x 30) 2-18 (16 x 30)	.246″	.....	.....	10.90	23.40	46.80	93.60
8448	G	8	6-22 (7 x 30) 2-18 (16 x 30)	.250″	2.39	.....	11.50	25.50	51.00	102.00
8449	G	9	7-22 (7 x 30) 2-18 (16 x 30)	.261″	2.54	.....	12.15	27.55	55.05	110.10
8489	G	4	18 (16 x 30)	.250″	.....	.....	9.75	21.45	42.90	85.80
8465	G	5	18 (16 x 30)	.286″	.....	.....	11.95	27.40	54.75	109.50
8467	G	7	18 (16 x 30)	.324″	.....	.....	15.85	36.10	72.15	144.30
8469	G	9	18 (16 x 30)	.379″	.....	.....	21.55	50.20	100.35	200.70
8466	G	12	18 (16 x 30)	.412″	.....	.....	28.95	70.30	140.50	280.95
8468	G	15	18 (16 x 30)	.490″	.....	.....	40.05	.....	189.00	378.00
8619	G	19	18 (16 x 30)	.505″	.....	.....	.....	.....	215.50	431.00
9626	H	25	18 (16 x 30)	.600″	.....	.....	.....	.....	288.10	576.15
8620	H	4	16 (19 x 29)	.375″	.....	.....	15.00	.....	70.90	141.75
9620	H	5	16 (19 x 29)	.405″	.....	.....	20.05	.....	83.65	167.25
8621	H	7	16 (19 x 29)	.455″	.....	.....	27.90	.....	124.95	249.90
9621	H	9	16 (19 x 29)	.510″	.....	.....	.....	.....	155.25	310.50
8622	H	12	16 (19 x 29)	.600″	.....	.....	45.55	.....	210.60	421.20
8623	H	15	16 (19 x 29)	.685″	.....	.....	63.75	.....	302.40	604.80
8624	H	19	16 (19 x 29)	.715″	.....	.....	78.30	.....	367.50	735.00
9622	H	25	16 (19 x 29)	.820″	.....	.....	.....	.....	422.25	844.50
8627	H	4	14 (19 x 27)	.495″	.....	.....	27.15	.....	124.05	248.10
9623	H	5	14 (19 x 27)	.560″	.....	.....	33.15	.....	147.90	295.80
8628	H	7	14 (19 x 27)	.630″	.....	.....	45.90	.....	212.80	425.60
8629	H	12	14 (19 x 27)	.770″	.....	.....	77.20	.....	372.75	745.50

All parts listed on this page pass the FR-1 vertical flame test.

Belden Electronic Wire and Cable

TEST PROD WIRE (FIG. A)

Extremely limp and flexible wire has high dielectric strength. Tinned copper 18 AWG, 65 x 36 stranded, separator, rubber insulated, specify red or black. No. 8897 made per MIL-W-13169. Miniature type 8890, 24 AWG, 45 x 40 stranded tinned copper, cotton separator, rubber insulated, specify red or black.

Belden No.	Nom. O.D.	Breakdown Volts	Suggested Work V‡	Net Each, Spool of 10′	14′*	25′	100′	500′	1000′
8899†	.144″	20,000	5,000	$0.96	$1.05	$1.52	$4.87	$17.85	$35.65
8897	.144″	20,000	5,000	....	....	....	....	20.40	37.20
8898	.230″	29,000	10,000	1.38	....	2.49	6.45	27.40	....
8890	.066″	10,000	1,000	....	....	1.26	3.11	13.20	....

*7 ft. of red; 7 ft. of black. †25′; 100′ and 500′ also available in blue, white, gray, green or yellow. ‡For intermittent duty only.

COILED TEST PROD WIRE (FIG. B)

Coiled test prod wire, prevents that cluttered up work bench. Retracted length 8 inches, stretched length, 5 feet. Tinned copper wire, rubber insulated, red and black. Complete with prods. AWG and stranding, 20 (42 x 36). Nom. O.D., .173″. Breakdown, 20,000 V; suggested working, 5,000 V.

Belden No. 8878—One red and one black. Net per Pair....................................$4.05
Belden No. 8879—Same as above, less prods. Net per Pair.................................1.73

UL HOOK-UP AND LEAD WIRES

Fig. C Types UL-300V-80° C (Style 1061): Tinned copper, semi-rigid vinyl insulation. Thin wall hook-up wire; suitable for wire wrap applications.
Fig. D Types UL-600V-105° C (CSA-600V-Type TEW): Tinned copper conductor vinyl insulated.
Fig. E Types UL-600V-90° C (CSA-Type TRB): Tinned copper conductor vinyl insulated with cotton braid, lacquered. All parts listed in following table pass the FR-1 vertical flame test.

Belden No.	Fig.	AWG and (Stranding)	Nom. O.D.	Stock Colors†	Net Each, Spool of 100′	500′	1000′	4000′#
9977	C	29 (Solid)	.031″	1–5, 7–10, 13	....	....	$ 7.90	....
9976	C	26 (Solid)	.034″	1 thru 10	....	....	6.75	....
9975	C	24 (Solid)	.038″	1 thru 10	....	....	7.20	....
8920‡	D	22 (7 x 30)	.095″	1–5, 9, 10, 13	$1.97	....	13.15	$ 9.90•
8919‡	D	20 (10 x 30)	.102″	1–5, 9, 10, 13	2.46	....	16.60	12.90
8918‡	D	18 (16 x 30)	.112″	1–5, 9, 10, 13	2.94	....	21.10	17.10
8917‡	D	16 (26 x 30)	.126″	1–5, 9, 10, 13	3.78	$15.30	28.20	24.40
8916‡	D	14 (41 x 30)	.141″	1–5, 9, 10, 13	5.35	20.95	....	....
8937*	E	22 (7 x 30)	.091″	1–5, 9, 10, 13	2.70	....	19.15	....
8936*	E	20 (10 x 30)	.098″	1–5, 9, 10, 13	2.79	....	21.55	....
8935*	E	18 (16 x 30)	.113″	1–5, 9, 10, 13	3.68	....	27.30	....
8934*	E	16 (26 x 30)	.126″	1–5, 9, 10, 13	4.65	19.30	....	....
8933§	E	14 (41 x 30)	.177″	1–5, 9, 10, 13	7.00	30.60	....	....

*Rated 600 V peak for electronic circuits only; 300 V for other applications. Style 1009. †Stock Colors: See table below right. ‡Rated 2500 V peak for electronic circuits. Style 1015. §Rated 2500 V peak for electronic circuits only; 600 V for other applications. Style 1014. #Per 1000′. •5000′ spool.

BRAIDED TINNED COPPER SHIELDING AND BONDING CABLES (FIG. F)

Belden No.	Stranding	Nom. I.D.	Net Each, Spool of 10′	50′	250′	Belden No.	Stranding	Nom. I.D.	Net Each, Spool of 10′	50′	250′
8676	16 x 36	1/32″	$0.89	$1.58	$ 7.25	8669	336 x 34	5/8″	$ 2.54	$10.90	$51.40*
8674	24 x 36	3/64″	.96	2.22	10.05	8672	528 x 36	9/16″†	2.94	12.45	56.10*
8652	96 x 40	1/16″	1.11	2.69	11.10	8671	864 x 36	15/16″†	3.86	17.70	85.90*
8653	48 x 36	3/32″	1.11	2.93	12.25	8662	576 x 34	19/32″†	3.53	15.40	74.40*
8654	72 x 36	7/64″	1.14	3.20	13.90	8655	360 x 30	5/8″†	4.05	18.60	92.50
8664	96 x 36	1/8″	1.26	3.68	15.80	8670	480 x 30	3/4″†	5.48	24.50	117.10*
8660	96 x 34	5/32″	1.08	3.24	14.35	8656	576 x 30	7/8″†	6.65	30.25	146.90
8668	120 x 34	3/16″	1.52	4.44	19.00	8657	768 x 30	1 1/16″†	9.15	41.60	....
8663	168 x 34	5/16″	1.59	5.48	25.60	8658	1056 x 30	1 3/8″†	12.15	56.25	....
8661	192 x 34	1/2″	1.46	5.10	23.65*	8659	1680 x 30	1 1/2″†	18.25	85.60	....

†Flat width. *Spool may contain more than one piece, minimum length of any one piece is 25 ft.

SOLID TINNED COPPER BUS BAR WIRE (FIG. G)

Made in accordance with Federal Spec QQ-W-343.

Belden No.	AWG	Nom. O.D.	Net Each, Spool of 100′	1000′	Belden No.	AWG	Nom. O.D.	Net Each, Spool of 100′	1000′
8011	12	.080″	$5.55	....	8021	22	.025″	$1.10	$6.60
8012	14	.064″	3.78	$31.60	8022	24	.020″	1.07	5.50
8013	16	.050″	2.46	21.10	8023	26	.016″	1.04	4.88
8019	18	.040″	1.74	13.15	8024	28	.012″	1.01	4.50
8020	20	.032″	1.29	9.10	8025	30	.010″	1.01	4.20

MIL-W-16878 TYPE B MULTI-CONDUCTOR SHIELDED CABLE (FIG. I)

Suitable for general purpose use in communications and instrumentations applications. Stranded tinned copper conductors, vinyl insulated, clear nylon jacket, conductors cabled, tinned copper braid shield, white vinyl jacket. Insulation .010″ thick. WV, 600 V suggested. Conductor Color Code: **1,** white; **2,** black; **3,** red; **4,** green. Pass the FR-1 vertical flame test.

Belden No.	No. of Cond.	AWG and (Stranding)	Nom. O.D.	Shield Cov. %	Nom. Cap.* pF/ft.	Net Each, Spool of 100′	500′	1000′
9971	1	24 (19 x 36)	.090″	93	75	$ 6.00	$ 27.85	$ 55.65
9961	1	20 (19 x 32)	.109″	93	100	6.70	30.60	61.20
9951	1	16 (19 x 29)	.139″	93	125	9.25	42.90	85.80
9972	2	24 (19 x 36)	.156″	91	70	8.35	40.05	80.10
9962	2	20 (19 x 32)	.192″	92	95	12.55	56.40	112.80
9952	2	16 (19 x 29)	.238″	92	120	15.10	73.00	145.95
9973	3	24 (19 x 36)	.164″	91	70	10.80	51.60	103.20
9963	3	20 (19 x 32)	.202″	91	95	15.30	74.25	148.50
9953	3	16 (19 x 29)	.250″	91	120	20.85	99.75	199.50
9974	4	24 (19 x 36)	.171″	92	70	13.30	62.55	125.10
9964	4	20 (19 x 32)	.212″	92	95	18.50	89.20	178.35
9954	4	16 (19 x 29)	.262″	91	120	26.25	123.25	246.45

*Capacitance between one conductor and other conductor connected to shield.

MIL-C-3432 600 VOLT POWER AND CONTROL CABLES (FIG. J)

Intended for military applications to transmit power and control signals. Features tough flexible jacket which is resistant to mechanical abuse and extreme humidity and temperature conditions. Tinned copper conductors, rubber insulated, cabled with fillers, cotton serve, black rubber jacket. Conductor Color Coding: **1,** white; **2,** black; **3,** green.

Belden No.	Type Designation	No. of Cond.	AWG and (Stranding)	Nom. O.D.	Insul. Thk.	Net Each, Spool of 500′	1000′
9215	**CO-02 MGF (2/18) 0310**	2	18 (41 x 34)	.310″	.033″	$48.75	$ 97.50
9216	**CO-02 MGF (2/16) 0335**	2	16 (65 x 34)	.335″	.033″	59.20	118.35
9217	**CO-02 MGF (2/14) 0400**	2	14 (41 x 30)	.400″	.036″	77.90	155.75
9218	**CO-03 MGF (3/18) 0340**	3	18 (41 x 34)	.340″	.033″	60.30	120.60
9219	**CO-03 MGF (3/16) 0365**	3	16 (65 x 34)	.365″	.033″	81.00	162.00

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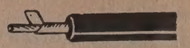

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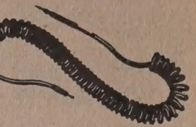

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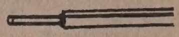

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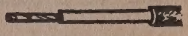

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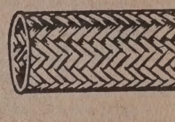

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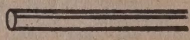

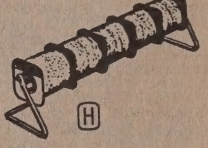
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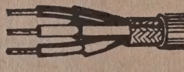

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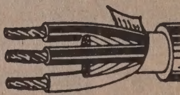


HOOK-UP WIRE KITS (FIG. H)

Assortments of hook-up wire colors in portable metal dispenser rack. One spool of each color is supplied. Pass the FR-1 vertical flame test.

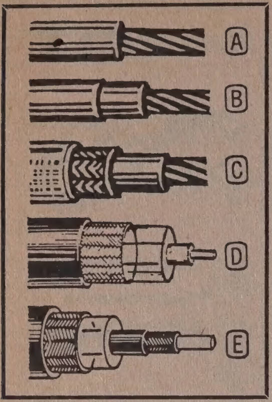
Beld. No.	Wire Type and No.	Stock Colors†	Net Kit
8816	18 (Strnd.) 8522-25*	1-6, 9, 10	$8.28
8822	20 (Solid) 8529-25*	1-10	8.25
8823	20 (Solid) 8529-100‡	2, 5, 6, 9, 10	9.00
8824	20 (Strnd.) 8523-25*	1-6, 9, 10	7.68
8825	20 (Strnd.) 8502-100‡	2, 4, 5, 9, 10	11.20
9530	22 (Solid) 8530-25*	1-10	7.55
9531	22 (Strnd.) 8524-100‡	2, 5, 6, 9, 10	8.85

*25 ft. spools. ‡100 ft. spools.

†STOCK COLORS

Code No.	Color
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Light blue
7	Violet (purple)
8	Gray (slate)
9	White
10	Black
13	Dark blue

Belden Electronic Wire and Cable



DC HI-VOLTAGE CABLE

Belden No. 8870 (Fig. D)—Solid Copperweld, 22 AWG; conductive polyethylene with Korona-GuardTM polyethylene insulation; tinned copper braid equipotential sheath; black polyethylene jacket. Nom. O.D., .440″. Rated 160 kV breakdown, 80,000 V working.

100′ Spool, Net.....**$ 42·45**
250′ Spool, Net..... **106·05**

Belden No. 8871 (Fig. E)—Tinned copper braid (CMA equiv. to 16 AWG) over solid polyethylene rod, black conductive polyethylene with Korona-Guard, clear polypropylene insulation, tinned copper braid, black polyethylene jacket. Nom. O.D., .830″. Rated 400 kV breakdown, 200 kV working.

25′ Spool, Net.....**$ 47·80**
100′ Spool, Net.... **190·95**
250′ Spool, Net.... **477·45**

®TM: Copperweld of Copperweld Steel Corp.

MIL SPEC HOOK-UP WIRE

MIL-W-16878 TYPE B VINYL (FIG. A)

Tinned copper, vinyl insulated for general purpose wiring with high resistance to moisture and solvents. Rated 600 VDC at 105° C. Passes the FR-1 vertical flame test.

Belden No.	Type Desig.	AWG and (Stranding)	Nom. O.D.	Stock Colors†	Net Each, Spool of			
					Solid Colors		Striped Colors	
					100′	1000′	100′	1000′
8599	B-32	32 (7 x 40)	.029″	1–10	$2·07	$14·50	....	....
8598	B-30	30 (7 x 38)	.032″	1–10	1·65	11·40	....	....
8597	B-28	28 (7 x 36)	.035″	1–10	1·62	10·40	....	....
8505	B-26	26 (7 x 34)	.039″	1–10, 14–22	1·61	11·35	$1·73	$12·50
8509	B-24	24 (19 x 36)	.045″	1–10	2·07	12·90	....	....
8504	B-24	24 (7 x 32)	.044″	1–10, 14–22	1·61	10·65	1·73	11·80
8503	B-22	22 (7 x 30)	.050″	1–10, 14–22	1·82	11·63	1·94	12·75
8502	B-20	20 (7 x 28)	.058″	1–10, 14–22	2·24	14·05	2·36	15·20
8501	B-18	18 (7 x 26)	.068″	1–10, 14–22	2·37	17·95	2·49	19·10
8500	B-16	16 (19 x 29)	.077″	1–10, 14–22	3·03	23·85	3·15	25·00

MIL-W-16878 TYPE B VINYL-NYLON JACKET—RATED 600 VDC AT 115° C (FIG. B)

Tinned copper conductor, vinyl insulated with nylon jacket overall. Pass the FR-1 vertical flame test.

Belden No.	Type Designation	AWG and (Stranding)	Nom. O.D.	Stock Colors†	Net Each, Spool of	
					100′	1000′
8515	B-26	26 (7 x 34)	.045″	1–10	$2·25	$15·75
8519	B-24	24 (19 x 36)	.051″	1–10	2·37	17·65
8514	B-24	24 (7 x 32)	.050″	1–10	2·22	15·10
8518	B-22	22 (19 x 34)	.057″	1–10	2·69	20·25
8513	B-22	22 (7 x 30)	.056″	1–10	2·40	17·10
8517	B-20	20 (19 x 32)	.065″	1–10	2·87	21·80
8512	B-20	20 (7 x 28)	.064″	1–10	2·54	19·20
8516	B-18	18 (19 x 30)	.075″	1–10	3·53	27·75
8511	B-18	18 (7 x 26)	.074″	1–10	3·20	24·10
8510	B-16	16 (19 x 29)	.083″	1–10	3·36	30·70

MIL-W-76 TYPE MW VINYL (FIG. A)

Tinned copper conductor, vinyl insulated, medium wall. Rated 1000 V at 80° C. Stock Colors†: 25′, colors 1–13; all others, 1–22 except as noted. Pass the FR-1 vertical flame test.

Belden No.	MIL-W-76 Type Designation	AWG and (Stranding)	Nom. O.D.	Net Each, Spool of				
				Solid Colors			Striped Colors	
				25′	100′	1000′	100′	1000′
8538	MW-C 24(1)U	24 (Solid)	.054″	....	$1.50	$ 8.25	$1.62	$ 9.40
8525	MW-C 24(7)U	24 (7 x 32)	.058″	....	1.58	10.20	1.70	11.35
8530§	MW-C 22(1)U	22 (Solid)	.059″	$0.75	1.50	9.40	1.62	10.50
8524§	MW-C 22(7)U	22 (7 x 30)	.064″	.80	1.77	12.00	1.89	13.15
8529	MW-C 20(1)U	20 (Solid)	.066″	.83	1.80	11.85	1.92	13.00
8523§	MW-C 20(7)U	20 (10 x 30)	.070″	.96	2.06	13.75	2.18	14.90
8528‡	MW-C 18(1)U	18 (Solid)	.074″	....	2.30	16.20	....	....
8522§	MW-C 18(16)U	18 (16 x 30)	.080″	1.04	2.46	18.45	2.58	19.60
8521	MW-C 16(19)U	16 (26 x 30)	.098″	....	3.44	26.50	3.56	27.60
8520	MW-C 14(19)U	14 (41 x 30)	.111″	....	4.80	41.50	4.92	42.60
8527*	MW-C 12(19)U	12 (65 x 30)	.130″	....	7.35	59.95	....	....
8531*	MW-C 16(1)U	16 (Solid)	.085″	....	2.88	23.00	....	....

Stock Colors†: *1–10 only; ‡1–13 only; §1–30.

MIL-W-16878 IRRADIATED PVC HOOK-UP WIRE (FIG. A)

Tinned copper, irradiated PVC insulated. UL listed. Meets MIL-W-16878 as follows: (At 105° C max.) Type B, 600 V rms max. Type C, 1000 V rms max. **AWM:** Style 1429, 300 V peak for electronic use only, 80° C max. Style 1430, 300 V rms (600 V peak for electronic use only), 105° C max. Stock Colors†: 1 thru 10. Pass the FR-1 vertical flame test.

Belden No.	MIL-W-16878 Type	Style No.	AWG and (Stranding)	Nom. O.D.	Net Ea. Spool of 1000′
83402	B-26*	1429	26 (Solid)	.039″	$13.80
83403	B-24*	1429	24 (Solid)	.044″	14.05
83404	B-22*	1429	22 (Solid)	.050″	16.00
83412	B-26	1429	26 (7 x 34)	.039″	15.00
83413	B-24	1429	24 (7 x 32)	.044″	14.95
83414	B-22	1429	22 (7 x 30)	.050″	16.95
83415	B-20	1429	20 (7 x 28)	.058″	21.15
83416	B-18	1429	18 (7 x 26)	.068″	27.75
83423	B-24	1429	24 (19 x 36)	.045″	18.90
83424	B-22	1429	22 (19 x 34)	.051″	19.45
83425‡	B-20	1429	20 (19 x 32)	.059″	23.25
83443	C-24	1430	24 (7 x 32)	.058″	17.25
83444	C-22	1430	22 (7 x 30)	.064″	22.20
83445	C-20	1430	20 (7 x 28)	.072″	23.40
83446‡	C-18	1430	18 (7 x 26)	.082″	28.65

*Solid cond. not recog. in MIL-W-16878. ‡Stock Color†: 9 only.

MIL-W-16878 TEFLON* HOOK-UP WIRE (FIG. A)

Concentrically stranded silver coated copper conductor insulated with extruded TFE Teflon. Pass FR-1 vertical flame test. Colors 1 thru 10.

*Registered DuPont TM.

TYPE EE, 1000 V, 200° C

Belden No.	Type Desig.	AWG and (Stranding)	Nom. O.D.	Net Each, Spool of		
				100′	500′	1000′
83023	EE-24	24 (19 x 36)	.053″	$ 9.10	$ 63.10	....
83025	EE-22	22 (7 x 30)	.058″	9.35	65.50	....
83026	EE-22	22 (19 x 34)	.060″	10.15	73.05	$ 71.55
83027	EE-20	20 (19 x 32)	.068″	11.85	87.60	86.10
83028	EE-20	20 (7 x 28)	.066″	11.20	81.45	....
83029	EE-18	18 (19 x 30)	.079″	15.70	120.70	119.20
83030	EE-16	16 (19 x 29)	.086″	17.70	136.65	135.15
TYPE ET, 250 V, 200° C, MINIATURE						
83041	ET-32	32 (7 x 40)	.021″	$4.90	....	$27.30
83043	ET-30	30 (7 x 38)	.024″	5.05	....	27.85
83045	ET-28	28 (7 x 36)	.027″	5.20	....	29.55
83046	ET-26	26 (7 x 34)	.031″	5.60	....	32.35
83047	ET-24	24 (7 x 32)	.036″	5.80	....	34.45
83048	ET-24	24 (19 x 36)	.037″	6.50	....	40.60
83049	ET-22	22 (7 x 30)	.042″	6.40	....	39.70
83050	ET-22	22 (19 x 34)	.044″	6.80	....	43.45

MIL-W-76 TYPE MW SHIELDED WITH NYLON JACKET (FIG. C)

Tinned copper, vinyl insulated, medium wall, tinned copper shield overall. Rated 1000 V at 80° C. Stock Colors†: 9 only.

Belden No.	MIL-W-76 Type Designation	AWG and (Stranding)	Nom. O.D.	Net Ea., Spool	
				100′	1000′
8893	MW-C 22(7)SJ	22 (7 x 30)	.096″	$6.45	$51.80
8896	MW-C 20(7)SJ	20 (10 x 30)	.105″	6.40	56.70
8892	MW-C 18(16)SJ	18 (16 x 30)	.114″	7.30	59.95
8894	MW-C 16(19)SJ	16 (26 x 30)	.132″	9.25	81.45

MIL-W-76 TYPE LW VINYL (FIG. A)

Tinned copper, vinyl insulated, light wall. Rated 300 V at 80° C. Stock Colors†: 1 thru 10. Pass FR-1 vertical flame test.

8571	LW-C 28(7)U	28 (7 x 36)	.037″	$1.38	$ 8.48
8570	LW-C 26(7)U	26 (7 x 34)	.041″	1.41	8.63
8569	LW-C 24(7)U	24 (7 x 32)	.046″	1.50	9.25
8568	LW-C 22(7)U	22 (7 x 30)	.054″	1.56	10.20
8567	LW-C 20(7)U	20 (10 x 30)	.060″	1.95	13.15

MIL-W-76 TYPE HW VINYL (FIG. A)

Tinned copper, vinyl insulated, heavy wall. Gauges 16 and 18 rated 2500 V at 80° C; gauges 6 thru 14 rated 600 V at 80° C. Stock Colors†: 2, 9 and 10. Pass FR-1 vertical flame test.

8586*	HW-C 18(16)U	18 (16 x 30)	.115″	$ 3.47	$ 24.80
8585	HW-C 16(19)U	16 (26 x 30)	.128″	4.13	31.90
8584	HW-C 14(19)U	14 (41 x 30)	.171″	7.00	55.50
8583	HW-C 12(19)U	12 (65 x 30)	.191″	9.50	86.25
8582	HW-C 10(37)U	10 (105 x 30)	.220″	14.25	129.00
8581	HW-C 8(127)U	8 (133 x 29)	.261″	31.80	......
8580	HW-C 6(127)U	6 (133 x 27)	.310″	42.00	......

Stock Colors†: *1 thru 10.

†STOCK COLORS

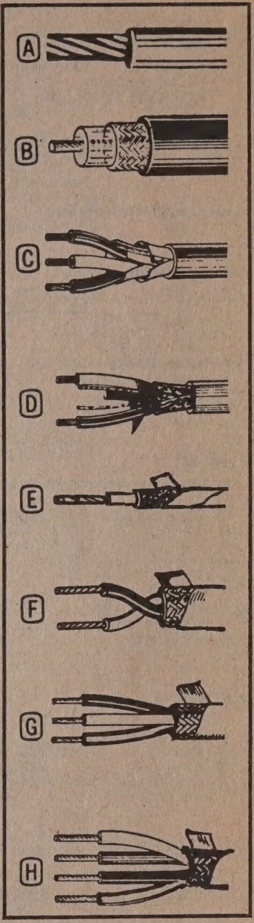
Specify color when ordering. First color in stripe combination is body color; second and third are stripes.

Code No.	Color Comb.	Code No.	Color Comb.	Code No.	Color Comb.
1	Brown	11	Tan	21	Wht/Gray
2	Red	12	Pink	22	Wht/Violet
3	Orange	13	Dark Blue	23	Wht/Blk/Red
4	Yellow	14	Wht/Blk	24	Wht/Blk/Grn
5	Green	15	Wht/Red	25	Wht/Blk/Yel
6	Light Blue	16	Wht/Grn	26	Wht/Blk/Blue
7	Violet (purple)	17	Wht/Yel	27	Wht/Blk/Brn
8	Gray (slate)	18	Wht/Blue	28	Wht/Blk/Orng
9	White	19	Wht/Brn	29	Wht/Blk/Gray
10	Black	20	Wht/Orng	30	Wht/Blk/Violet

Belden Electronic Wire and Cable

TEFLON HIGH TEMPERATURE WIRE AND CABLE

Belden Teflon® wire products are particularly recommended for miniature cable applications. Teflon is especially suitable for internal wiring soldering applications where insulation melt back is a specific problem. Belden Teflon wiring products are outstanding in their resistance to oil, oxidation, heat, sunlight, flame, and their ability to remain flexible at low temperatures. All have excellent resistance to ozone, water, alcohol, gasoline, acids, alkalis, aromatic hydrocarbons and solvents.



MIL-W-16878, TYPE E TEFLON HOOK-UP WIRE (FIG. A)

Concentrically stranded, silver-coated copper conductor with extruded TFE Teflon insulation rated 600 volts, 200° C. Pass the FR-1 vertical flame test.

Belden No.	Type Desig.	AWG and (Stranding)	Nom. O.D.	Ins. Thick-ness	Net Each, Spool of Solid Colors† 100′*	Solid Colors† 500′*	Solid Colors† 1000′*	Striped‡ 1000′*
83000	E-30	30 (7 x 38)	.033″	.010″	$ 5.05	$ 29.55	$ 28.05	$ 38.55
83001	E-28	28 (7 x 36)	.036″	.010″	5.25	31.30	29.80	40.30
83002	E-26	26 (7 x 34)	.041″	.010″	5.70	35.55	34.05	44.55
83003	E-24	24 (19 x 36)	.046″	.010″	7.05	46.65	....	....
83004	E-24	24 (7 x 32)	.045″	.010″	6.10	37.80	36.30	46.80
83005	E-22	22 (7 x 30)	.051″	.010″	7.05	46.35	44.85	55.35
83006	E-22	22 (19 x 34)	.052″	.010″	7.75	52.65	51.15	61.65
83007	E-20	20 (19 x 32)	.060″	.010″	8.95	63.30	61.80	72.30
83008	E-20	20 (7 x 28)	.059″	.010″	8.40	58.95	....	....
83009	E-18	18 (19 x 30)	.071″	.010″	12.10	89.85	88.35	98.85
83010	E-16	16 (19 x 29)	.080″	.010″	14.80	112.80	111.30	121.80

MIL-W-16878, TYPES EE AND ET TEFLON HOOK-UP WIRE (FIG. A)

Same as above except Type EE rated 1000 V, 200° C; Type ET rated 250 V, 200° C. Specifications and pricing on request.

TEFLON-INSULATED RG/U TRANSMISSION LINE CABLES (FIG. B)

Meet MIL-C-17D specifications. Silver-coated Copperweld® conductors with TFE Teflon insulation and silver-coated copper shields. Pass the FR-1 vertical flame test.

Belden No.	No. RG-	AWG and (Stranding)	No. Shields	Jack-et§	Nom. O.D.	Nom. Imp., Ohms	Net Each, Spool of 100′*	500′*	1000′*
83241	141A/U	18 (Solid)	1	BF	.190″	50	$52.35	$244.50	$483.00
83242#	142B/U	18 (Solid)	2	TBF	.195″	50	64.70	305.78	605.55
83265#	178B/U	30 (7 x 38)	1	TBF	.070″	50	14.95	64.50	....
83264#	179B/U	30 (7 x 38)	1	TBF	.100″	75	25.90	111.83	219.15
83266#	180B/U	30 (7 x 38)	1	TBF	.140″	95	33.90	156.38	....
83284#	316/U	26 (7 x .0067)	1	TBF	.098″	50	24.70	109.73	214.95

FEP TEFLON-INSULATED SPECIAL INSTRUMENTATION CABLES

Noise reducing tape applied over insulated conductors minimizes generated noise due to cable flexing. Shield coverage, 100%. **Operating Temperature:** −70° C to +150° C. **Jacket Working Voltage:** 1000 VDC, shield to ground. **Nos. 83394, 83395 and 83396:** Tinned copper, insulated with FEP Teflon, conductors cabled, noise reducing tape, 22 AWG (7 x 30) nickel coated copper drain wire, special Beldfoil® shield, red silicone rubber jacket. **No. 83393:** Same except 20 AWG (7 x 28) nickel coated copper drain wire and yellow silicone rubber jacket.

Belden No.	Fig.	No. of Cond.	AWG and (Stranding)	Thickness Insu-lation	Thickness Jack-et	Nom. O.D.	Conductor Color Coding	Net Each, Spool of 25′	100′	500′
83394•	C	2	22 (7 x 30)	.015″	.030″	.204″	Blk, wht	$ 8.48	$32.40	$162.00
83395•	C	3	22 (7 x 30)	.015″	.030″	.213″	Blk, wht, red	10.65	40.35	196.50
83396•	C	4	22 (7 x 30)	.015″	.030″	.222″	Blk, wht, red, grn	12.15	47.00	227.25
83393	D	2	20 (7 x 28)	.020″	.030″	.245″	Blk, red	11.70	46.65	225.75

*Spools may contain more than one piece, minimum length of any one piece is 25 ft.; 500′ and 1000′ lengths may vary ±10%, all other lengths are exact. †Specify brown, red, orange, yellow, green, light blue, violet (purple), gray (slate), white, or black. ‡Write for information on color striping (1, 2 or 3 stripes) available at price shown. §BF indicates brown fiberglass; TBF, tinted brown FEP Teflon; WTT, white Teflon tape. #Manufactured to current Government specifications and subsequent revisions. •Pass the FR-1 vertical flame test.

MIL-W-16878, TYPE E SHIELDED TEFLON CABLES

Feature stranded silver-coated copper conductors, MIL-W-16878, Type E extruded TFE Teflon insulation, color-coded, cabled, braided silver-plated copper shield, and white TFE Teflon tape wrapped jacket. Temperature rating, −65° C to +200° C. Shield coverage, 90%. Suggested working voltage, 600 volts rms. Choice of 1-, 2-, 3 or 4-conductor types in 100, 500 or 1000 ft. spools.

Belden No.	Fig.	No. of Cond.	AWG and (Stranding)	Thickness Insu-lation	Thickness Jack-et	Nom. O.D.	Conductor Color Coding	Net Each, Spool of 100′*	500′*	1000′*
83301	E	1	30 (7 x 38)	.010″	.010″	.074″	Wht	$ 29.25	$114.38	$ 228.75
83302	E	1	28 (7 x 36)	.010″	.010″	.078″	Wht	30.35	115.88	231.75
83303	E	1	26 (7 x 34)	.010″	.010″	.082″	Wht	32.10	120.45	240.90
83304	E	1	24 (19 x 36)	.010″	.010″	.088″	Wht	34.65	130.70	261.40
83305	E	1	22 (19 x 34)	.010″	.010″	.094″	Wht	36.30	136.78	273.55
83306	E	1	20 (19 x 32)	.010″	.010″	.103″	Wht	40.65	152.18	304.35
83307	E	1	18 (19 x 30)	.010″	.010″	.113″	Wht	49.05	198.50	397.00
83308	E	1	16 (19 x 29)	.011″	.012″	.123″	Wht	56.70	218.30	436.60
83315	F	2	30 (7 x 38)	.010″	.010″	.106″	Wht, blk	41.40	171.75	343.50
83316	F	2	28 (7 x 36)	.010″	.010″	.112″	Wht, blk	43.50	175.63	351.25
83317	F	2	26 (7 x 34)	.010″	.010″	.120″	Wht, blk	46.00	183.60	367.20
83318	F	2	24 (19 x 36)	.010″	.010″	.132″	Wht, blk	49.05	195.75	391.50
83319	F	2	22 (19 x 34)	.010″	.010″	.144″	Wht, blk	56.50	217.40	434.80
83320	F	2	20 (19 x 32)	.010″	.012″	.162″	Wht, blk	59.65	245.18	490.35
83321	F	2	18 (19 x 30)	.010″	.012″	.188″	Wht, blk	75.15	312.50	625.00
83322	F	2	16 (19 x 29)	.011″	.012″	.200″	Wht, blk	97.05	405.75	811.50
83330	G	3	30 (7 x 38)	.010″	.010″	.111″	Wht, blk, red	55.50	220.28	440.55
83331	G	3	28 (7 x 36)	.010″	.010″	.117″	Wht, blk, red	56.25	225.68	451.35
83332	G	3	26 (7 x 34)	.010″	.010″	.126″	Wht, blk, red	60.15	247.58	495.15
83333	G	3	24 (19 x 36)	.010″	.010″	.136″	Wht, blk, red	66.45	273.65	547.30
83334	G	3	22 (19 x 34)	.010″	.012″	.156″	Wht, blk, red	74.20	306.30	612.60
83335	G	3	20 (19 x 32)	.010″	.012″	.175″	Wht, blk, red	86.65	357.38	714.75
83336	G	3	18 (19 x 30)	.010″	.012″	.196″	Wht, blk, red	103.45	423.28	846.55
83337	G	3	16 (19 x 29)	.011″	.012″	.218″	Wht, blk, red	145.95	610.35	1220.70
83345	H	4	30 (7 x 38)	.010″	.010″	.119″	Wht, blk, red, grn	71.20	289.63	579.25
83346	H	4	28 (7 x 36)	.010″	.010″	.126″	Wht, blk, red, grn	72.75	301.88	603.75
83347	H	4	26 (7 x 34)	.010″	.010″	.135″	Wht, blk, red, grn	77.40	321.53	643.05
83348	H	4	24 (19 x 36)	.010″	.012″	.151″	Wht, blk, red, grn	89.25	365.18	730.35
83349	H	4	22 (19 x 34)	.010″	.012″	.166″	Wht, blk, red, grn	99.60	407.98	815.95
83350	H	4	20 (19 x 32)	.010″	.012″	.185″	Wht, blk, red, grn	108.00	451.85	903.70
83351	H	4	18 (19 x 30)	.010″	.012″	.215″	Wht, blk, red, grn	140.55	586.58	1173.15
83352	H	4	16 (19 x 29)	.011″	.014″	.235″	Wht, blk, red, grn	187.20	774.00	1548.00

*Spools may contain more than one piece, minimum length of any one piece is 25 ft.; 500′ and 1000′ lengths may vary ±10%, but 100′ length is exact. All parts listed in above table pass the FR-1 vertical flame test. ®TM: Teflon of DuPont; Copperweld of Copperweld Steel Co.; Beldfoil of Belden.

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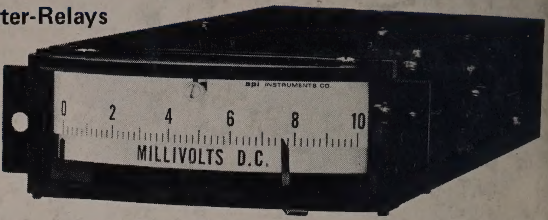
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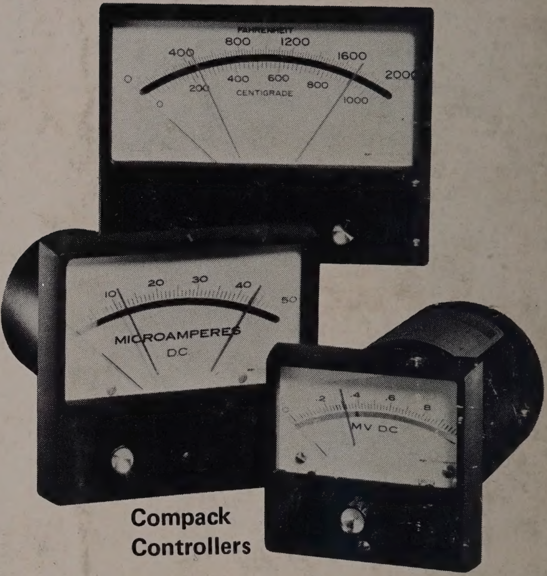
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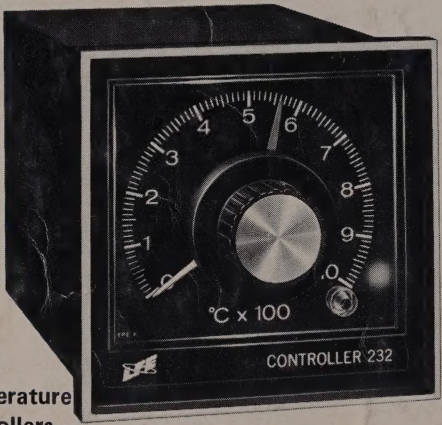
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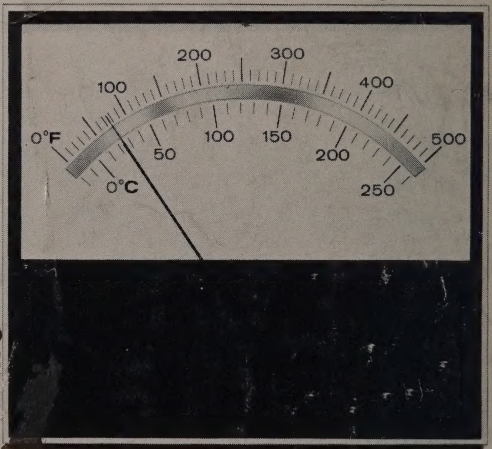

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